



The Palestinian Economy

Theoretical and Practical Challenges

I

Proceedings of the Conference

University of Pavia, 15-16th June 2010

Edited by

Gianni Vaggi – Marco Missaglia – Fadi Kattan

Pavia University Press

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The cover shows: *The Dome of the Rock and the Western Wall 'behind bars'* by Giovanni Valensisi

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VOLUME I

Prologue

These proceedings are the outcome of a joint research work carried out by Italian and Palestinian economists and present the final results of the research project which has been coordinated by the Department of Political Economy and Quantitative Methods in collaboration with the Department of Public Economics of the University of Pavia.

The research work was made possible thanks to the financial support of Italian Ministry of Education, University and Research – MIUR – through the FIRB Project RBIN 0493LR_000. All the participants want to thank MIUR for its support.

In February 2005 at Bethlehem University, during the PEACE Program conference, a Memorandum of Understanding, was signed between the partners under the Patronage of the MIUR, of the Ministry of Education and Higher Education of the Palestinian National Authority (PNA) and of the PEACE Program to create a Centre for Advanced Studies and Research in the field of International Cooperation and Development (CASR-ICD) in Palestine. The universities of An-Najah, Birzeit and Bethelhem were involved on the Palestinian side, while the universities of Pavia and Siena were the two Italian partners.

Research activities focused on general issues of great sensitiveness for the sustainability and the reconstruction of the Palestinian economy. But the topics examined have a more general implications for the entire Middle East and for Mediterranean Basin. Issue such as trade regimes, labour markets and labour mobility, the fiscal space of the PNA and the role of micro finance go beyond the specific case.

The Centre produced qualitative and quantitative analyses for evaluating the effects of different economic policies aimed at the sustainable development of the Palestinian socio-economic structure.

In particular, the following areas of study have been identified:

1. Industrial and labour economics.
2. Middle-Eastern regional economic cooperation and Euro-Mediterranean cooperation, including international trade and finance, multilateral agreements and capital mobility.
3. Fiscal systems and budgetary policies.

The papers included in this book, which were presented and discussed at a conference held on 15-16th June 2010 in Pavia and the main results were presented in Bethlehem on the 22nd of June with the participation of delegations from the Italian Ministry of Foreign

Affairs, of the Italian Cooperation in Jerusalem, of the PCBS – Palestinian Central Bureau of Statistics – and of research centre MAS of Ramallah.

This research work provides a fundamental contribution to highlight the main characteristics of a sustainable economic development in Palestine. Moreover the activities which have been carried on over more than three years have helped to further strengthen the research collaborations between Palestinian and Italian universities.

Gianni Vaggi – Marco Missaglia – Fadi Kattan

Welcome Speech by Rector Prof. Angiolino Stella

I am honoured to welcome all of you at the University of Pavia for this conference on The Palestinian Economy.

Welcome and thank you for their presence to the authorities, to Mario Ali, General Director for the Internationalization of Research of the Italian Ministry, to the foreign delegates coming from Palestine, to the representatives of International association and to all our Italian colleagues.

This conference represents the outcome of a major joint research work which has been carried out by Italian and Palestinian economists and presents the final results of the FIRB research project, funded by the Italian Ministry of Education – MIUR and coordinated by the Department of Political Economy and Quantitative Methods in collaboration with the Department of Public Economics of the University of Pavia.

In February 2005 at Bethlehem University, during the PEACE Program conference, a Memorandum of Understanding was signed between the partners under the Patronage of the Italian Ministry of Education, University and Research (MIUR) and of the Ministry of Education and Higher Education of the Palestinian National Authority (PNA) and of the PEACE Program to create a Centre for Advanced Studies and Research in the field of International Cooperation and Development (CASR) in Palestine.

Professor Vaggi will outline the specific program and the role of Italian universities in this process; I now will only underline that the Euro-Mediterranean area needs our attention and common action, to reach a sustainable economic development.

A few weeks ago I was in Palestine and had the opportunity to visit the Universities of Nablus and Bethlehem: they need our cooperation and we are ready, together with the Ministry on Foreign Affairs to contribute to their growing with research and exchange programmes.

Many thanks and good work to all.

Speech by Dr. Mario Ali, Director-General, Directorate-General for International Research Ministry of Education, University and Research

Rector, Professors, Ladies and Gentlemen,

Let me thank you for inviting me to be here, today, and let you have Italian Minister of Education, University and Research Mariastella Gelmini's best greetings.

I wish to make you my best congratulations for the outstanding results of the joint research work, carried out by Italian and Palestinian economists, funded by our Italian Ministry of Education, University and Research, (in the FIRB research international projects context,) and coordinated by the Department of Political Economy and Quantitative Methods in collaboration with the Department of Public Economics of the University of Pavia.

I am also very satisfied for the excellent results obtained by the creation of the "Centre for Advanced Studies and Research in the field of International Cooperation and Development at Bethlehem University", just explained by speakers before me. The research collaboration with the Mediterranean countries, and also with Palestine, is a priority for the Italian international research.

I am very glad to inform you that Italy is preparing for the first time a new strategic document dedicated to "Strategy for the Internationalization of the Italian Research".

The document is focused on improving the national/international interface and promoting international collaboration, putting forward Italy as an ideal bridge for foreign researchers of the Mediterranean area, to let them collaborate and contribute at the "European Research Area".

Today, as Director-General for Internationalization of Research in the Ministry of Education, University and Research, I would like, during my short speech, to focus our attention on some fundamental research topics, with a European and International vision.

I have always been a strong supporter of the principle that, in the past, globalization was a concept based on exchange of merchandises, instead of knowledge and research.

Europe knows, since ever, that a "Knowledge-based society", is composed by "knowledge and skills" the so-called immaterial capital, "the new richness of nations". And we have to participate to the distribution of this important richness. And I am sure that the shores of the Mediterranean are full of this important richness and I hope that, in

the next future, we will have to increase the cooperation among all the principal actors of the search and innovation, to allow putting up this new richness.

In front of such a complex scenario, we need to face the Lisbon Strategy, requesting to reach GDP in research of 2.5% by 2010. In our country, during the last 15 years, our GDP has been decreasing from 1.5% at the beginning of 90s, to 1.1% or even less, today. Therefore, the goal proposed by Lisbon Strategy and Europe was an impossible dream. Fortunately, all the member States decided to extend this expiration ten years after.

I would like to remind to all of us that, in the recent European Commission Document EU2020, for the next ten years European Union's Programming activities, research and innovation will play a key role. The recent document EU2020 extended the time-limit to 2020, confirmed that the pillars of future European development will be funds allocation in research and innovation activities, to obtain the most economic, social and environmental sustainability. It is highly convenient to take this chance and consider it like a great opportunity and not a longer agony.

Europe 2020 puts forward three mutually reinforcing priorities:

Smart growth: developing an economy based on knowledge and innovation.

Sustainable growth: promoting a more resource efficient, greener and more competitive economy.

Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

Seven are the goals proposed into this important document, seven pillars but, today, I wish to focus our attention on "flagship initiatives":

- "Innovation Union", to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs.
- "Youth on the move", to enhance the performance of education systems and to facilitate the entry of young people to the labour market.

The decision to participate more actively to the European context is due to some fundamental reasons:

- Resources needed and allocated to scientific and technological projects.
- To play a key-role in negotiations pertaining developing projects at a European and Worldwide level.
- Transnational topics handled.
- Tradition of science and technology.

Moreover, Europe now is the main production and use space of knowledge, consequently it is time to adopt real European policies about research and education.

Everybody knows that financial resources, allocated to these kinds of activities, are decreasing at national level and are increasing at European level. The 6th Framework Program's budget was about 19.5 Billion Euro, the 7th Framework Program's was more than 50 Billion Euro and the next 8th Framework Program will allocate about the double of the amount allotted in the previous 7th Framework Program.

Totally aware of these difficulties and always looking towards the European Research Area, we are working hard to give good responses to European priorities and challenges.

First of all, I created four outstanding level Working Groups.

- The first one, for International Research, which highly contributed to the National Plan of Research. This working group, for the first time, drew up a formal document in order to create a strategy for internationalization of research, strongly wanted by Minister Gelmini and mentioned in her official document "Atto di indirizzo 2010". This formal document has already been submitted to political authorities.

In our National Plan of Research 2009/2013, we strongly introduced, for the first time, the International "vision" focused on the 7th Framework Program, in particular about some topics like the Technological Platform, ERA-Net, Art. 169, the Research Infrastructures, Joint Technology Initiatives (JTI), Joint Programming Initiatives (J.P.I).

- The second one, for Research Infrastructures, which drew up a strategic document about National priorities pertaining great Research Infrastructures.

I am now extremely proud to announce you that our Ministry On. Mariastella Gelmini has given her political endorsement to the whole process, by officially transmitting to the ESFRI Council the announcement that Italy has just completed the evaluation phase and has produced a first draft of the Italian Roadmap of Research Infrastructures.

The Ministry has also expressed her intention to present the Italian Roadmap to the scientific community soon.

- The third one, it is a kind of Task force, composed by high level and professional officials of Universities, Public Research Institutes, working specifically on European Framework Programmes. This working group will support the Directorate for Internationalization of Research to outline "position papers" to be submitted to Minister, about transversal topics pertaining policy-makers' decisions.
- The fourth Working Group is a Study Commission, supporting our Directorate and having as principle goal the analysis of statistic data regarding Italian participation to European and International Research. This group, led by Professor Antonio Golini, Academy member of Lincei in Rome, is very important because will compare essential

results into the 6th, 7th Framework programs, allowing us to understand in a clear way, our strong and weak points.

In our Ministry, we are also working hard, to fit our laws to the European ones and let us participate more actively to the European and International programs.

Last 10th of November 2009, the Ministry of Education, University and Research, in particular our Directorate for the Internationalization of Research, that I have the honour to run, obtained a great success about activities pertaining Joint Programming Initiatives.

Three important initiatives, supported by our country, have been approved by European Commission:

1. Agriculture, Food security and Climate Change.
2. Health, Food and prevention of diet related diseases.
3. The challenge for cultural heritage: providing protection in response to major change for Europe in a global context.

Our Ministries, and mainly our Italian Government, paid particular attention to the Joint Programming Initiatives, especially to Cultural Heritage. This is the reason why we are working to conclude agreements with Ministries of Cultural Heritage, Health and Agriculture.

The first one, in fact, was signed on last 25th of February, in Palazzo Chigi, in the presence of Council's Presidency Undersecretary, Gianni Letta, between our two Ministries, by Honourable Minister of Education, University and Research Mariastella Gelmini and by Minister of Cultural Heritage and Activities Senator Sandro Bondi.

I am strongly convinced that, now more than ever, is necessary to pay our best attention and concentrate our efforts on a central topic, to increase and improve quantitative and qualitative growth of our country system, that is the re-launching of our economy through research, both at a National and mainly an International level.

Before closing my speech, let me thank you again for inviting me to be here today, for your attention and for the opportunity to talk about such an important topic for our future generations.

VOLUME I

Section 1: General Issues

Mercantilism or Liberalism? Economic Autonomy and State-Building in Palestine

Rosa Alonso I Terme and Fadi Kattan[♦]

In short, the Oslo peace process was premised on a new economic dawn. Perhaps unrealistically, the new economy of the Palestine Authority was to emerge as integrated with, but not subservient to, the Israeli economy.

B. Kimmerling and J. Migdal, The Palestinian People. A History

[♦] Bethlehem University

1. Mercantilism and Liberalism and their Times

Mercantilist and Liberal theories and economic policies have prevailed in the world at very different times. Mercantilist or nationalist economic theories have prevailed at times of war and insecurity, national rivalry, state-building and economic development. They are the policies of hard times led by fledgling states with not-yet-developed economies aiming at strengthening their economic autonomy and institutional structures. They were first developed by Colbert in the 17th century and implemented in France as well as throughout Europe as the post-Westphalia process of nation-state building and intra-European strife unfolded. They were equally espoused by Friedrich List and German policy-makers during the nineteenth-century period of German economic development and political unification as well as by Alexander Hamilton in the United States at a very similar time in the history of his country.

Mercantilism reflects the needs of economies and states whose neighbours are not their friends – except possibly tactically – and, thus, who cannot take security for granted. Its authors and implementers assume that there is no trade-off between politics and economics or between power and plenty. Rather, they believe that, in their circumstances, power and security considerations with their state-building and economic autonomy corollaries need to be the guiding principles of their economic policies. For them, overseeing long-term survival considerations for the sake of potential short-term economic gain would mean that there would be no plenty to be had (and possibly no state left either). In a mercantilist world, a state which depends economically on its neighbour is a weak and vulnerable state whose fragility will be used against it. On the contrary, a strong state is a state which is economically autonomous from its neighbour and, hence, does not depend on it. A strong state is also a state which has sound and efficient national institutions, needed both to ensure its security as well as underpin its economy.

Liberal theories and policies, on the contrary, have prevailed at times of peace and stability. They are the policies of times of trust between neighbours with relatively strong states and reasonably well-developed economies. They were first theorised by Adam Smith and David Ricardo. Both economists were not coincidentally born in England, one of the most well-established states and the most developed economy of the time. Liberal policies have been progressively adopted across the world as states and economies

develop.¹ Even once states and economies have progressed from the mercantilist to the liberal phase, they can have relapses at times of economic recession and political insecurity (as was the case in the interwar period in Europe). When a certain level of economic development and state authority have been established, however, it is easier to revert back to liberal thinking and policies, especially within multilateral frameworks. At that stage of development, willing leaders can build institutions and international regimes to cement liberalism as they did in the western world after World War II and in Western Europe first through the Common Market and later on through the European Union.

For mature states with relatively well-developed economies, economic integration also becomes possible and even desirable. For developed economies at peace, competition from their neighbours is not a threat to their autonomy, but a spur to economic growth. Similarly, institution-building at the national level is no longer the end in itself that it can appear to be to those establishing a new country. On the contrary, states can focus on building common regional institutions to cement shared interests and defend them in the rest of the world even at the expense of relative loss of national sovereignty. In this context, considerations of relative gain (relative economic growth rates, bilateral balances of trade, bilateral foreign investment flows, labour flows or even relative political power) become less important as the threat of war and the likelihood of use of economic leverage for political gain among neighbours fades. It is the time at which states can focus on mutual gain, believe in and implement systems that foster positive-sum gains and concern themselves with security and prosperity for the region as a whole.

Economic integration, in short, is based on mutual trust, belief in joint economic benefits and a sense of security by those involved. It requires abiding by the rules of the game of economic integration which the economic and political benefits it generates help to reinforce. For these conditions to prevail and regional integration to proceed even in a context of peace, however, there needs to be a rough parity between the integrating parties. In fact, states that have engaged in economic integration processes are either typically all large (e.g. US, Canada, Mexico) or all small (Benelux). Other agreements

¹ The 2009 World Bank Development Report confirms this long-established relationship and its evolution: "Rich countries tend to have the lowest barriers to trade and factor mobility [...] as countries develop, they gradually lower almost all types of barriers." (pp. 96-97) "Each of today's successful regions initially developed its manufacturing sector behind a fairly substantive wall of tariffs and other protections. Only as their economies matured [...] did they gradually open their borders and integrate regionally and globally" (119). *Reshaping Economic Geography*. Washington: The World Bank (2009, pp.96-97).

have included particular guarantees and incentives for small states within a non-threatening multi-lateral regional framework (as in the EU).

In no case has economic integration willingly proceeded between one rich and (relatively) powerful and one poor and (relatively) powerless partner in the context of security tensions between them. This is probably so because, in such a context, what is likely to develop is economic and political dependence – rather than inter-dependence – and the weaker party would not wish to place itself in such an economic and politically vulnerable situation in a conflict situation. The case of the economic relations between Israel and Palestine, however, offer a case study of what can transpire in such a situation.

For the transition phase between a mercantilist and a liberal framework to start, war needs to be over. Fostering cooperation in a context of war and occupation leads to an increase in the areas of friction and in the tools available for each side to inflict damage on the other. This situation creates incentives for aggression through economic means and conflict escalation, hence delaying the day in which true conflict resolution can begin. Moreover, in a context of inequality between two sides, attempts to enhance cooperation between them actually lead to deepening the dependence of the weaker on the stronger partner, distorting its economic relations and de-legitimising its institutions.

1.1. Palestine-Israel Relations – A Mercantilist or a Liberal Context?

Since the 1990s, many analysts and policy-makers have been operating as if the relevant framework to apply to Palestine's economic relations with Israel were that of liberalism. The economic regimes and policies which they have propounded and implemented have reflected the assumptions of a liberal world. They have focused on stepped up economic integration in trade, labour flows, revenue management and private sector economic relations, including in such strategic sectors as energy. These economic integration goals have been reflected in the Oslo Agreements of 1993 and, in particular, in the Paris Protocol of 1994 and the Agreement on Movement and Access of 2005. These blueprints outline a *de jure* customs union (CU) bordering on a common market, including free trade in goods and services, a common external tariff and, to a certain degree, free flows of labour.²

² Arnon and Weinblatt have pointed out the discrepancy between the *de jure* and the *de facto* regimes prevailing in Palestine-Israel relations. In particular, they argue that, despite *de jure* economic integration, economic separation has prevailed *de facto*. (Arnon and Weinblatt 2001). In our view, however, speaking of "separation" in the context of occupation is a contradiction in terms. What we have, as will be argued, is an asymmetrical power relationship which allows *de facto* arbitrary use by Israel of the *de jure* framework to (cont.)

The actual conditions prevailing in Palestine-Israel relations, however, are far from those of a liberal context. Palestine and Israel are not two sovereign and rich states at peace. Rather, Israel is a sovereign and well-established state with an impressively developed economy and the strongest army in the Middle East while Palestine is an occupied nation with no formal state, fledgling institutions, a developing economy and no army. Moreover, the context of Palestine-Israel relations is not one of peace, but one of military occupation and war. Because of this power gap between the two parties and the context of occupation and war, the *de facto* regime and policies regulating and actualising the economic relationship between them have been very different from what is established *de jure* under existing economic integration agreements (which themselves reflect an uneven power balance between the parties). Therefore, the results in terms of economic development and institution-building for Palestine have not at all been what would be expected from a process of economic integration between two free well-established states at peace with each other.

This discrepancy between *de jure* agreements and *de facto* reality and its negative impact on the Palestinian economy has been increasingly acknowledged by economic analysts.³ This paper builds on this literature and purports that the degree of economic integration with Israel that has been imposed on Palestine in the current context of war and occupation is counterproductive for the Palestinian economy. In this regard, it argues that the recommendations of mercantilists for economic autonomy from parties with which a country is at war are well-taken and constitute a better framework within which to analyze Israeli-Palestinian economic relations. In this guise, it recommends the enhancement of the economic autonomy of Palestine from Israel. In no way does the paper espouse attempting economic self-sufficiency or excessive protectionism, both of which would be impracticable and self-defeating, especially for such a small economy. Rather, it recommends building on own resources while diversifying economic relations, deepening economic ties with neighbours such as Egypt and Jordan when advantageous and maintaining open relations with the rest of the world.

This chapter will aim at: a) summarising the required conditions for successful economic integration to pan out; b) describing the *de jure* framework regulating

foster its perceived economic self-advantage and to use it as a political and economic bargaining chip including, periodically, to inflict collective punishment as retaliation on Palestine.

³ In addition to Arnon and Weinblatt (2001), see Diwan and Shaban (1999) and the various reports of the Aix Group, such as *Economic Road Map. An Israeli-Palestinian Perspective on Permanent Status* (2004) and *Economic Dimensions of a Two-State Agreement Between Israel and Palestine* (2007) <www.aixgroup.org>.

Palestine-Israel economic relations; c) presenting the economic regime and policies which *de facto* regulate these relations; d) outlining the economic transmission mechanisms between regime and policies to economic outcomes; e) analysing the economic and political consequences of the combination of the existing unimplemented *de jure* and implemented *de facto* frameworks (dependence, de-development and institutional de-legitimisation); f) presenting some conclusions from the preceding analysis; and g) putting forth some recommendations for enhancing economic autonomy in going forward.

2. Required Conditions for Successful Economic Integration

Recent reviews of international trade and regional economic integration hold powerful lessons for the Palestinian-Israeli context. This section will briefly examine two of them – the 2009 World Development Report on *Reshaping Economic Geography* and a 2003 World Bank review of Regional Integration Arrangements. In both cases, the conditions the studies lay out for fruitful trade and economic integration to take place are not fulfilled in the Palestinian-Israeli context due to the circumstances of war and occupation.

The 2009 World Development Report identifies three basic variables determining trade between countries: density (size of the trading partner's economy), distance (physical market access between trading partners) and division (the effects of borders). The first two variables are promising for trade prospects between Israel and Palestine due to the size of the Israeli economy (density) and the geographical proximity between both countries (distance). However, the third variable (division) works in a unilateral direction making market access for Israeli goods into Palestine relatively easy, but market access for Palestinian goods into Israel extremely difficult. As we will see, this unevenness of access greatly reduces the potential gains from trade for Palestine and has critically impaired the development of the Palestinian economy, especially since the 1990s.

A 2003 World Bank study of regional integration and development is also enlightening in our context. The report reviewed worldwide empirical evidence on the impact of regional economic integration on growth and economic development.⁴ At the end, the study draws a number of conclusions it calls “rules of thumb for regionalism.”

⁴ See Schiff and Alan Winters (2003), especially, chapter 9: “Rules of Thumb for Regionalism,” (pp. 261-271).

This section will summarize the rules of thumb that are most relevant to the Israeli-Palestinian context and assess how they affect the likelihood of the existing Oslo-backed customs union between the two parties to yield the expected gains from regional integration.

North-South RIAs are preferable – In principle, North-South RIAs are preferable to South-South agreements because, whereas there is empirical evidence that the former can stimulate growth, there is no evidence of this effect in the latter. A key reason why North-South RIAs tend to perform better than South-South ones is that they are more likely to increase competition and lead to better trade, greater investment and more foreign direct investment-related technology transfers. From this point of view, a regional economic agreement between Palestine and Israel sounds promising. However, the 2009 WDR points out that an important reason why South-South RIAs do not tend to generate much growth spillovers is that “despite regional trading arrangements, there is no real integration”, chiefly because of lack of market access.⁵

RIAs need to foster real competition – A key route through which the economic growth effects of RIAs are channelled is greater competition. For this competition to occur, however, effective integration needs to take place and that requires more than simply reducing tariffs and quotas. It necessitates the removal of any other barriers that have the effect of segmenting markets and impeding the free flow of goods, services, investment and ideas. Namely, for a RIA to truly integrate economies, all barriers to trade and investment need to be eliminated between participating countries. This real integration is needed for the crucial competition effects between economies as well as industrial agglomeration effects to take place.

Credibility gains require explicitness – especially in North-South RIAs, a positive effect of regional integration is to enhance the credibility of the government policies of the developing country partner. This effect in turn often helps to encourage foreign direct investment. However, for this effect to pan out, the transition path to free trade needs to be fully specified, with a minimisation of reversals in liberalisation, the prohibition of application of instruments of contingent protection and the establishment of binding dispute-settlement mechanisms that are not contingent on foreign policy considerations.

Only efficient RIAs are likely to help politically – Regional integration is often used to foster political goals, such as enhancing the security of and political cooperation among partners. The review points out, however, that RIAs can help solve political

⁵ World Bank, World Development Report 2009: *Reshaping Economic Geography*, (p. 102).

problems only if they function well. On the contrary, if they do not, they can have the opposite effects.

As will transpire throughout this paper, the above-listed conditions do not hold in the Palestinian-Israeli context. First off, despite a customs union existing from a legal *de jure* point of view, there are a plethora of non-tariff barriers to trade between Palestine and Israel (checkpoints, the separation wall, permit systems, etc.). Moreover, these barriers go mostly in one direction creating a myriad of obstacles to economic activity within Palestine and for exports from Palestine into Israel leading to unfair competition for the Palestinian economy.⁶ Hence, the “competition effect” predicated on real integration cannot pan out. The enormous and unpredictable barriers to economic activity between both countries as well as the context of occupation and war with the risk it entails also prevent cooperation across firms, foreign direct investment and any related agglomeration and technology transfer effects. Second, the “credibility” effect on PA government policies is impaired by the fact that the degree to which the *de jure* customs union is applied is *de facto* completely unpredictable and unilaterally determined by Israel. In reality, therefore, the effect is the opposite – delegitimizing the PA and undermining the credibility of its policies. Finally, the application of a peace-time regional integration framework in a context of war and occupation, far from building confidence and fostering peace, increases points of friction between the two parties, provides tools for economic aggression, exacerbates the conflict and delays the coming of the time in which true cooperation can commence.

3. *De jure* Economic Institutions and Assumptions Underlying Them

The *de jure* framework for the economic relations between Palestine and Israel is determined by the Oslo Accords and, in particular, by the “Protocol on Economic Relations” or “Paris Protocol” (subsequently incorporated into the Interim Agreement of 1995).⁷ It was initially devised to regulate the economic relations between the Palestinian Authority and Israel during the interim period that was to last until 1999 when final status in the relations between both parties was expected to be reached.

⁶ The result of this asymmetry has been dubbed as a “one-sided customs union” Diwan and Shaban, (1999, p. 84).

⁷ This section draws heavily from Calika (1998).

The Agreement aims to establish a customs union between the PA and Israel by basically extending the Israeli trade regime to Palestine. According to the Agreement, the PA has to apply at least the same level of customs and other duties as Israel, except for goods included in three lists: A1, A2 and B. For goods under these lists, the PA is given some limited power to modify the basic Agreement. In particular, for some items it has the right to determine tariff rates and other import taxes. The items in list A1 are some goods produced in Jordan, Egypt and some other Arab countries. The items on list A2 are some basic foodstuffs from other countries. The items on list B are some equipment goods considered important for development purposes. Even for the goods on lists A1 and A2, however, import quantities need to be within the limits set jointly between the PA and Israel and determined according to Palestinian market needs. These items in the agreed quantities are also exempt from meeting Israeli standards and licensing requirements.

Therefore, *de jure*, the Agreement allows Palestinian goods free access to the Israeli market as well as to the markets of the countries with which Israel has free trade agreements (the EU, the US, EFTA member states, Canada, Turkey, Mexico, Romania and Bulgaria). Moreover, since the time of the signing of the Agreement, Israel has engaged in further economic liberalisation and its trade regime is now very open. As Israel has been moving up the value added ladder in its manufactures, it has increasingly liberalised its markets toward low value added manufacturing imports in order to gain access from other countries for its high-tech and other high-valued added manufactures. As a result, the only remaining high levels of protection in its trade system apply to agricultural products (and, decreasingly, to some specific traditional manufacturing goods).⁸ Overall, therefore, the regime features low tariffs on manufactures and relatively high tariffs on agricultural products. By 2005, the weighted average most-favoured-nation (MFN) tariff rate applied to agricultural products was over five times that applied to industrial products.⁹

Unlike in typical customs unions (the ones existing outside contexts of occupation), the trade regime applied to the CU between Palestine and Israel is determined unilaterally by Israel. The PA – except in the very limited cases mentioned above – has no say in its trade policy toward third countries. Because the common external tariff of the CU is

⁸ Beverages, clothing, footwear and plastics industries are the manufacturing sectors with the highest level of protection. World Bank (2006, p. 8).

⁹ The average applied MFN tariff was 8.9% in 2005. MFN tariffs on agricultural products were, on average 32.9% with rates varying widely and a maximum tariff rate of 560%. World Bank (2006, p. 48).

determined by Israel without the participation of the PA, it reflects Israel's economic interests and stage of development rather than Palestinian development considerations. In addition, it imposes on Palestine Israel's political-economic limitations, as it locks out of Palestinian trade all the countries which have no diplomatic relations with Israel, including most of the Arab world. Also, and unlike in the case of customs unions between sovereign states, the PA does not collect its own customs revenue. Instead, the Agreement establishes that Israel will collect customs duties, VAT and excise taxes on imports ("clearance revenues") on behalf of the PA. Moreover, the PA can only receive customs duties and import taxes on those goods marked clearly for the WB and Gaza as the final destination. This limitation reduces the tax collections received by the PA due to leakage (as not all goods finally imported into Palestine are clearly marked as such).¹⁰

A further restriction imposed by the *de jure* CU between Palestine and Israel is that any imports into Palestine need to meet the exacting quality standards demanded by Israel – which, in addition to all those typical of a developed country, include *kashrut*¹¹ certifications for food products. These high quality standards may be neither appropriate nor necessary for a country of the level of development of Palestine. Very few developing countries have similar restrictions and it is unlikely that they would be imposed by the PA were it able to determine its own trade regime autonomously. These standards impose additional restrictions on the Palestinian trade regime as well as costs on the Palestinian economy.

Regarding labour flows, the wording of the Interim Agreement is exceedingly vague. Article VII states that: "Both sides will attempt to maintain the normality of movement of labour between them, subject to each side's right to determine from time to time the extent and conditions of the labour movement into its area." The article thus establishes a declaration of principle for the freedom of movement of labour between Israel and Palestine. However, this declaration of principle is legally rather vacuous as it is immediately qualified by its being "subject to" each side's ability to restrict this movement "from time to time." Since the conditions under which each side is allowed to impose restrictions are not defined and neither is their timing, the simple *de jure* upshot of this article is that there will be freedom of movement of labour when and as far as each side decides. Since it is labour from Palestine that typically seeks work in Israel rather than vice-versa and Israel has all the political, economic and military means in its hands

¹⁰ "The extent of these (tax) leakages is unknown, but could be as large as 5% of GDP". Diwan and Shaban (1999, p. 87).

¹¹ Jewish dietary laws.

to enforce decisions on labour movements whereas the PA has none, this article means that Palestinian labour will be able to work in Israel when and under the conditions that Israel decides.

Finally, the Paris Agreement includes some provisions which are unusual for liberal economic integration frameworks. In particular, it contemplates the operation of Palestinian monopolies in the telecommunications and electricity sectors and import monopolies in the cement and petroleum sectors (linked to Israeli firms). The impact of these monopolies on governance is addressed in the below section on institutional de-legitimation.

The 2005 Agreement on Movement and Access (AMA), in part reacting to the barriers to movement to goods and labour prevailing *de facto* since the Oslo Agreements, was an attempt to make the CU regime between the PA and Israel more binding. Among other things, it specifies that: crossing points will operate continuously, Israel will urgently expedite the access of Gaza products for export, the Rafah checkpoint between Israel and Gaza will be open with third-party supervision and Israel will facilitate the passage of convoys between the West Bank and Gaza. These provisions are made in an unconditional fashion and hence seem directly applicable from a legal standpoint. The AMA also establishes that Israel will facilitate the movement of goods and people within the West Bank. This provision, however, is made conditional on "Israel's security needs." Since it is not determined who will establish what those are, it means that it is Israel alone who will define them as well as their consequences for movement and access within the West Bank. The AMA also establishes that the building of a seaport in Gaza can commence and it commits Israel "not to interfere" with its operation. Finally, the AMA states that: "The parties agree on the importance of the (Gaza) airport. Discussions will continue on the issues of security arrangements, construction, and operation." This last point, like that on freedom of movement within the West Bank, has hardly any meaningful legally-binding consequences.

In sum, the Customs Union envisaged by the Paris Protocol basically describes a *de jure* expansion of the Israeli customs envelope to Palestine with very limited room for manoeuvre by the PA in the determination of trade relations with third countries. This trade regime is a very open one with high tariff rates applying only to agricultural products and some low value-added manufactures. It also extends the exacting Israeli quality standards for imports to Palestine. According to the Agreements, any change to the trade regime is decided unilaterally by Israel and directly extended to Palestine. The provisions on labour movement included in the Protocol include a vague statement

regarding the desirability of normal labour flows. More importantly, they legally allow both sides to determine the degree and conditions of access of labour into their area. The 2005 AMA embodies a greater degree of specificity regarding movement and access of goods and labour between Israel and Palestine as well as, in some areas, more binding legal language.

Therefore, the *de jure* customs union between Palestine and Israel is a rather *sui generis* one. It is unilaterally rather than bilaterally determined and some of its key provisions – in particular those regarding movement and access of goods and labour – are legally vague, dependent on political considerations and subject to the interpretation of the Israeli Government.

4. *De Facto* Economic Institutions and Policies

As limiting as the *de jure* context of Palestine-Israel economic relations may be, it only goes a limited way toward explaining their *de facto* nature and consequences. What lies at the basis of the actual nature of those relations is the fact that we are dealing with two unequal partners in the context of war and military occupation. One partner is a state and the other is not. One is independent and the other is occupied. One is rich and the other is poor. One has an army and the other does not. One has the *de jure* and *de facto* power to determine the trade regime and labour flows and the other does not. One collects trade revenues for itself and the other party while the latter is dependent on the former's political willingness to transfer or withhold its revenues at any point in time. One has export contacts and access throughout the world for its exports while the other depends on the former to grant access for transit as well as for export contacts themselves. One has its own roads, ports and airports while the other is enclosed, cannot control the roads even within its own territory and has no ports or airports. One has an autonomous source of electricity production while the other depends on the former for its electricity supply. The actual economic context of Palestine-Israel relations is thus one of utter dependence.

The *de facto* status of Palestine-Israel economic relations is determined not only by its lopsided *de jure* framework and the unevenness of the balance of power between the two parties, but also by its preceding history and, in particular, the previous four decades of occupation. The years comprised between 1967 and today de-linked the Palestinian economy from its ties with Jordan and Egypt and led it to a distorted integration with

Israel.¹² Given the context of the occupation, integration was never complete or symmetrical. From the beginning, Israel imposed barriers to Palestinian agricultural imports and the overall access of products from one side of the 1967 borders to the other was never symmetrical and it systematically favoured Israel. There was little public investment by the Israeli Government (the only one in charge at the time) in Palestine. Moreover, the Government of Israel (GoI) used administrative measures to hamper the establishment of any industrial firms in Palestine which could possibly compete with its own producers.¹³ The Palestinian economy was also hamstrung by a lack of credit, as following the 1967 occupation, Arab banks withdrew and few Palestinians were willing to borrow from Israeli banks.

The first decade and a half of the occupation was one of rapid growth based on unskilled labour exports to the Israeli economy and its one-time effect of wage increases and relative convergence with Israeli wage levels, and remittances from workers in the Gulf countries. It also marked the beginning of a process of weakening of the productive structure of the West Bank characterised by declines in both agriculture and (an already precarious) industry and the over-development of the construction and services sectors.¹⁴ In the 1980s and 90s, the Palestinian economy stagnated. Diwan and Shaban (1999) identify four main constraints to GDP growth during the pre-Oslo period: asymmetric market relations with Israel (imports into Palestine from Israel without borders, but with barriers to export for Palestinians into Israel and the rest of the world); regulatory restrictions (investment approval requirements by Israel; uncertainty in legal and tax frameworks); fiscal compression and institutional under-development (low tax receipts; fiscal leakages to Israel; limited public spending in infrastructure for development); and restricted access to natural resources (with confiscation of land and water).¹⁵

The impact of all these barriers and asymmetries with Israel on the Palestinian economic was dramatic. By the beginning of the 1990s, the Palestinian economy had

¹² This was the second "shock" to the Palestinian economy and one which in part and in a distorted manner undid part of the first shock. The first shock was the partition of Mandatory Palestine in 1948. After the 1948 war, the Palestinian economy of the West Bank and Gaza was split off from its historical links with the coastal areas of what became Israel. Between 1948 and 1967, the West Bank became increasingly part of the Jordanian economy while Gaza integrated with the Egyptian economy. The 1967 occupation of the West Bank and Gaza by Israel partially and in a distorted manner "re-unified" these areas with their previous historical *hinterland* (which was by then, of course, a completely different world).

¹³ "A review of the various constraints imposed by Israel is extensively described in Awartani (1993) and Bahiri (1987)." Arnon *et al.* (1997, p. 166). Awartani (1993) and Bahiri (1987).

¹⁴ See S. Roy (1999, pp. 64-82) and Dessus (2004, pp. 447-469).

¹⁵ Diwan and Shaban (1999, p. 6).

been severed from the rest of the world and turned into a dependent appendix of the Israeli economy. As the World Bank's Investment Climate Assessment succinctly describes:

By the eve of the Oslo Accords, the occupied Palestinian territories had become completely dependent upon Israel and had little economic relations with other countries. Nearly 60% of the West Bank's exports and more than 90% of its imports were to and from Israel and the trade deficit was nearly 45% of GDP. The figures for Gaza were similar, but the trade deficit was even higher. Palestinian enterprises were heavily reliant on Israelis for inputs and most production was sold either locally or through Israeli distributors...The enterprises that did exist were dependent upon Israeli firms for inputs and almost all exports went to Israel or were exported through Israeli firms.¹⁶

Probably because of this pre-existing *de facto* dependence, the objective of the Oslo Accords was to "make the most of it" and attempt to realize the conditions and benefits of true economic integration in Palestine-Israel relations.¹⁷

As pointed out above, however, neither the *de jure* framework nor the balance of power between the parties or the context in which they were engaging were promising for these conditions to materialize. They did not. What materialised *de facto* was a regime characterised by three main features: a) pervasiveness of highly unpredictable restrictions on the movement and access of people and goods; b) continued confiscation of natural resources (in particular land and water) combined with restrictions on planning and use of resources; and c) an unpredictable *de facto* regime of military and administrative decisions affecting all aspects of economic relations including trade, labour flows, access to natural resources, fiscal revenue, transport networks and energy.

¹⁶ Investment Climate Assessment. West Bank and Gaza Investment Climate: Unlocking the Potential of the Private Sector. World Bank: March 2007, p. 5.

¹⁷ This paper does not address the issue of whether Palestine "over-trades" with Israel. This is not an easy issue to establish and critically depends on the assumptions of the model used to estimate it. Diwan (1999) cites "various modeling exercises (which) have shown regional trade and trade with Asia would have been much larger, and trade with Israel much smaller, in the absence of the CU. By some estimates, imports from Israel may have been lower by as much as a half." On the other hand, a recent World Bank study argues that "no support can be found for the case that WBG (the West Bank and Gaza) overtrades with Israel given their proximity, GDP, population, and other variables." *West Bank and Gaza: Opportunities and Constraints*. Washington: World Bank (2006, p. 41).

Movement and Access – The number of days of total closure¹⁸ declined slightly at the beginning of the post-Oslo period, but increased dramatically since the onset of the second Intifada. The average days of effective total closure went from 17 in 1990-93 down to 11 in 1994-99 and up to 87 in 2000-2002 and 97 in 2003-2005.¹⁹ To the days of total closure need to be added the large amount of fixed and mobile checkpoints within the Occupied Palestinian Territories, which greatly curtail freedom of movement within the area itself. According to the UN Office for the Coordination of Humanitarian Affairs in the Occupied Territories (OCHA), in March 2007 there were 546 physical impediments to movement in the West Bank.²⁰ In addition, the separation wall being built by Israel in the West Bank is also imposing increasing restrictions on movement and access by Palestinians and will do much more so once its construction is completed and existing openings cannot be used. Gaza has been under a regime of full closure since the Hamas electoral victory of 2006. This regime has led to the almost complete banning of people from entering and leaving the strip as well as of imports and exports of goods – with very few exceptions for humanitarian cases.

In addition to these restrictions, the World Bank identified a number of other barriers to movement and access by Palestinians. These include administrative impediments (control of the population registry, permit regime, family unification and establishment of residency), restricted areas of the West Bank (settlements, restricted roads, the separation wall and the “seam zone,” exclusion from the Jordan Valley and East Jerusalem and special restrictions in area C).²¹ This combination of impediments, rather than the general principle of normal flows of a typical customs union, is what defines the actual context of movement and access between Palestine and Israel to this day. Therefore, the condition of the removal of tariff as well as non-tariff barriers necessary for effective economic integration has clearly been absent in the Israeli-Palestinian context. As the Aix Group of Israeli, Palestinian and international economic advisers remarked: “The new *de facto* economic regime that currently exists is a significant departure from the negotiated 1994

¹⁸ “General closure refers to the overall restrictions placed on the movement of labor, goods and the factors of production between the West Bank/Gaza and Israel and between the West Bank and Gaza, and is usually accompanied by prolonged delays and searches at border crossings. Total closure refers to the complete banning of any movement and typically is imposed in anticipation of, or after, an extremist attack on Israel. Internal closure restricts movement between Palestinian localities within the West Bank itself.” S. Roy: “De-development Revisited: Palestinian Economy and Society since Oslo”. *Journal of Palestine Studies*, 28 (Spring): pp. 64-82: 69.

¹⁹ World Bank (2006, p. 2) Table 1: Key Macro-economic and social indicators.

²⁰ World Bank (2007a, p. 3).

²¹ For a detailed description of these obstacles, see World Bank (2007a).

Paris Protocol... There is a clear contradiction between the basic requirements for economic recovery and the new regime. This contradiction is reflected in trade, labour, finance and other dimensions.”²²

Confiscation of natural resources – The process of land confiscation, which had started right after the beginning of the occupation, accelerated after the Oslo Accords. Between 1996 and 2000, the area of Israeli settlements in the West Bank and Gaza doubled while, between 2000 and 2007, the confiscated area is estimated to have grown by a further 31%. The confiscated land was used for settlement expansion, the building of roads closed to Palestinians, as well as the security wall and its buffer or “seam” zone (an additional 8-9% of the West Bank).²³ By the beginning of the Oslo Accords, it was estimated that, in the West Bank, Palestinians were only using 15-20% of the water resources.²⁴ Moreover, the additional Palestinian land confiscated for the construction of the separation wall has “included” in the “Israeli” side of the wall significant amounts of Palestinian water resources.

Fiscal regime. According to the Paris Protocol, the Government of Israel is responsible for collecting so-called “clearance revenues” (tariffs and VAT and excise duties on imports) on behalf of the PA and transfer them to it. This agreement was reached because of the reluctance of the GoI to establish “economic borders” or posts at which the PA Customs Department could collect its own trade revenue. This reluctance came from the Israeli view that, even the establishment of economic borders for the only purpose of tax collection, could be interpreted as an implicit recognition of those borders and weaken its negotiating position.²⁵ *De facto*, the system of collection by the GoI and subsequent transfer to the PA has placed 60% of PA revenue in the hands of the GoI with the consequences described in the sections below.

²² The Neglected Economic Dimension: Revitalizing the Economic Road Map. Brainstorming Session of the Aix Group. May 30, 2006, p. 1 <www.aixgroup.org>.

²³ “Israeli Settlements dramatically expand in the Occupied West Bank between the years 1996 & 2007.” 02, November, 2008. <www.poica.org/editor/case_studies/view.php?recordID=1631>. See also, *B'tselem, Access Denied. Israeli Measures to Allow Palestinians Access to Land around Settlements* (2008). <www.btselem.org/Download/200809_Access_Denied_introduction_and_Conclusions.pdf> and, H. Ofra and D. Etke, “Construction of Settlements on Private Land. Official Data” and “Construction and Development of Settlements Beyond the Official Limits of Jurisdiction.” Peace Now 2008.

²⁴ World Bank (2007b, p. 4).

²⁵ Arnon and Weinblatt (2001).

Uncertainty and political leverage of the de facto regime regulating economic relations. One of the most important defining characteristics of the actual regime regulating economic relations between Palestine and Israel is uncertainty. As pointed out above, this uncertainty is legitimised to a large extent in the *de jure* regime. This regime, defined in the 1994 Paris Protocol and, to a lesser extent, the 2005 Agreement on Movement and Access, leaves ample room for interpretation of the conditions under which policies can differ from the established general principle of normal movement of goods and labour.²⁶ However, the regime itself appears to be irrelevant as *de facto* there is no difference in actual policies by the Government of Israel between issues where the legal framework is more binding and those where it is vaguer. For instance, the stipulation made in the AMA that "crossing points will operate continuously" as well as the duty of the Government of Israel to transfer to the PA clearance revenues collected on its behalf are both stated unequivocally and unconditionally. Despite that, they have not at all been respected and the same applies to similar AMA stipulations. Instead, they have been subject to a unilateral interpretation by the Government of Israel regarding when it is expeditious or not to implement them (according to security or other considerations). They have also been used as political leverage, with the GoI withholding clearance revenues from the PA as a tool to exert pressure on it or to "punish" it.²⁷ Moreover, the overall uncertainty surrounding the future status of the West Bank and Gaza creates an enormous amount of legal and political uncertainty which in turn has a dramatically deleterious effect on the Palestinian economy.

²⁶ The *de jure* regime includes clauses that allow Israel to interrupt the normal functioning of the customs union subject to political and security considerations. This contradicts the rule of thumb for successful economic integration which requires the prohibition of application of instruments of contingent protection and envisages the establishment of binding dispute-settlement mechanisms that are not contingent on foreign policy considerations. This is probably because economic integration frameworks are envisaged for contexts of peace and not war-time.

²⁷ As pointed out by the World Bank: "The GoI's decision to stop transferring clearance revenue is a violation of the Oslo accords, under which there is no clear provision for Israel to withhold clearance revenues. It is not illegal under Israeli law, which grants such discretion to the Minister of Finance and recognizes international agreements only to the extent that their provisions have been ratified by the Knesset. A case was brought to the Israeli Supreme Court in which the petitioners sought to force the GoI to release the funds. However, the Supreme Court rejected the petition, and in so doing agreed with the GoI that withholding the funds was within the discretion of the Minister of Finance to prevent the funding of terrorist activities. In terms of international law, the issue is open to debate." World Bank (2007c, p. 7).

5. Economic and political consequences of applying a liberal peace-time framework on a mercantilist wartime reality

One can summarize the consequences of the combined application of the above-described *de jure* and *de facto* economic regimes and policies to Palestine-Israel economic relations as follows: a) dependence; b) de-development; and c) institutional de-legitimation.²⁸ For each of these three areas, this section will outline the various economic transmission mechanisms from the existing economic regimes and actual policies to their economic and political consequences.

5.1. Dependence

The above-described *de jure* and *de facto* economic regimes and policies make the Palestinian economy utterly dependent on Israel. This dependence can be seen at many levels. This section will briefly examine five of them – production, trade, labour, fiscal revenues and electricity. Other areas of dependence worth examining, but beyond the purview of this paper are currency, banking system, private sector business ties, the health sector and the environment.²⁹

The production capacity and productivity level of the Palestinian economy depend to a large extent on Israeli policies. A key factor of production – land – is at the mercy of the Israeli Government and Israeli settlers. In part, this is because ownership and title issues in Palestine continue to be problematic. Lands with a clear title are limited to area A (the area where the PA is in full civil and security control). They are very scarce and

²⁸ This paper does not purport to analyze all factors affecting the performance of the Palestinian economy or of Palestinian institutions. Rather, it focuses on one variable – the imposition of a liberal economic regime appropriate for peace-time relations among sovereign, rich, well-established states on a mercantilist reality of war and occupation between two unequal parties.

²⁹ Currently, the Palestinian economy makes use to a large extent of the *shekel* as its main currency. This necessitates cooperation with Israeli Banks to work jointly with the Palestinian Monetary Authority on clearance arrangements. A future Palestinian state, on the other hand, may wish to establish its own currency. The Palestinian banking system, because of its heavy use of the shekel, is also dependent on clearance agreements with Israeli banks. This puts them in a dependent position, as has been evidenced in the current crisis in Gaza. Many large Palestinian firms, such as some of the monopolies, include agreements with Israeli firms (upon which they are dependent). The health sector relies heavily on sending medical cases which cannot be treated in Palestine to Israel. Future planning may wish to explore alternative locations in Europe and the Arab world to lessen dependence on Israel. This would, of course, require the provision of the necessary funding from these countries. The Palestinian environment is also heavily dependent on Israeli water management, sewerage and military refuse treatment and disposal as well as on Israeli industrial practices. This area will necessitate regulation and management between the two parties on an equal footing well into the future.

constitute only 18% of the West Bank. On the other hand, the final status of lands in areas B (area of joint control between the PA and the GoI) and C (area under the full control of the GoI) is uncertain. In addition, the title for these lands is generally unavailable.³⁰ However, it is unclear whether having a clear title would make a significant difference in slowing down the process of land confiscation which has proceeded unabated throughout the past forty years of occupation. This ongoing process of confiscation has led to a decrease in the supply of land for the Palestinian economy – for either agricultural or industrial purposes – and has greatly increased its price (see below section on de-development). Water availability and prices are also a constraint to the development and competitiveness of the Palestinian agricultural sector.

The Palestinian industrial sector is also greatly dependent on Israel. After 1967, a number of Palestinian micro-enterprises developed to form the low-value added part of manufacturing chains integrated with an Israeli enterprise. In particular, Palestinian firms would sub-contract for Israeli firms in sectors producing labour intensive goods like garments and footwear.³¹ Because the Israeli economy is transitioning out of these low-value added manufacturing products, there is decreasing demand for Palestinian micro-enterprises sub-contracting in these sectors. In 2008 manufacturing output was nearly 20% and agricultural output 55% below their 1999 levels.³² The Palestinian industrial sector is also dependent upon the Israeli economy in that a large number of Palestinian firms depend on Israeli firms for developing contacts with the outside world, including for marketing and exporting their products to third countries. This is in part because these contacts are more highly developed in Israel, but also because Israeli firms are at an advantage in dealing with the Israeli bureaucracy, including its export requirements and processes. As a result, under 10% of the manufacturing and IT sample of firms of the World Bank's West Bank-Gaza Investment Climate Assessment sells directly to the international market while most of the remaining firms sell through Israeli companies.³³

Palestinian productivity is highly dependent on developments in Israel-Palestine relations and on the conflict in particular. Productivity growth is largely driven by the ability of firms to build scale economies through developing access to larger markets and the capacity of firms to learn and implement new production methods and techniques. Both of these possibilities are largely absent in Palestine as the conflict and its related

³⁰ World Bank (2007b, p. 69).

³¹ World Bank (2007b, p. 5).

³² World Bank (2009, p. 11).

³³ World Bank (2007b, p. 29).

myriad obstacles to movement and access increasingly reduce the market size of Palestinian firms and effectively cut them off from contacts with firms in Israel and the rest of the world. Therefore, one of the main channels through which growth is spurred in North-South regional integration arrangements – technology-transfer – is not present in the Israeli-Palestinian context. Like production, Palestinian productivity growth also seems to have followed closely the avatars of the conflict. As a result, the overall productivity and labour productivity of Palestinian firms rose between 1997 and 2000, declined sharply in 2001 (ensuing the onset of the Intifada), and recovered by 2004.³⁴

The Palestinian economy is also greatly dependent on the Israeli economy for its trade flows. This relationship of dependence is almost wholly one-sided. In 2003, Palestine's imports from and exports to Israel accounted for 73 and 92% of the total respectively.³⁵ On the other hand, Israel's trade with Palestine only accounted for about 1% of Israel's total imports and 6.3% of its exports.³⁶ Palestinian exports are also dependent on Israel for access. Since there are no ports or airports in Palestine, exports can only go out through Israel, Jordan or Egypt and Israel currently controls all checkpoints and trade access routes. Also, because Palestinian cars and trucks are not allowed access into Israel, Palestinian firms depend on Israeli firms to transport their export goods into Israel and, for those with other final destinations, onward to third countries. As a result, Palestinian trade flows totally depend on the state of the conflict with Israel and the degree of closure and other restrictions imposed by the GoI at any given point in time. For example, Palestinian exports, after increasing by 4% in 1999, declined by 7, 35, 13 and 4% respectively in the years 2000, 2001, 2002 and 2003. Similarly, Palestinian imports increased by 19% in 1999 but declined by 14, 18 and 2% in 2000, 2001 and 2002 and started growing by 5% again in 2003.³⁷

Since the beginning of the occupation in 1967, labour flows from Palestine to Israel have been one of the main sources of growth in the Palestinian economy. They were also the main engine of income convergence during the first years of the occupation.³⁸ Labour flows, however, have also been highly variable depending on the security situation and the decisions of the GoI and they declined sharply after the beginning of the second Intifada. The percentage of all employed Palestinians working in Israel fell from an

³⁴ World Bank (2007b, pp. 14-15 and 73).

³⁵ World Bank (2006, p. 49).

³⁶ Arnon and Bamya (2007, p. 193).

³⁷ International Monetary Fund (2006, p. 8).

³⁸ See Dessus (2004, p. 4) quoting Kleiman (1999).

average of 16% in 1994-99 to 7% in 2003-2005.³⁹ This decline led to substantial losses to the Palestinian economy. For instance, the World Bank calculates that, based on the level determined by the share of "Israeli" employment in total WBG employment in 1999-2000, the number of Palestinian workers in Israel in 2005 could have been 165,000 and their earnings USD 922 million. Instead, because of permit restrictions, employment was only 63,000 and earnings USD 351 million. According to the same study, the estimated loss over 2001-05 because of lower employment amounted to USD 2.4 billion and because of closures to USD 928 million, with the total losses amounting to 3.3 billion USD.⁴⁰ By 2007, a man in the West Bank only had a 77% chance of being employed compared to 1999.⁴¹

Because the Palestinian economy is so closely linked to the Israeli economy, growth and government revenues fluctuate with the cycles of the conflict. For instance, during the growth years of 1995 to 1999, government revenues in US dollars almost doubled, going from US 510 million (15.8% of GDP) to US \$ 942 million (22.6% of GDP).⁴² On the other hand, the Intifada led to a steep decline in government revenues. By December 2000 – three months into the Intifada –, revenues had declined by 50% relative to the pre-Intifada level.⁴³ Moreover, the Palestinian Authority is also dependent on Israel to collect on its behalf and transfer to it "clearance revenues," which amount to roughly 60% of overall PA revenues.

Despite its contravening the Oslo Accords, Israel has repeatedly used the withholding of these revenues as a political tool to place pressure on or to "punish" the Palestinian Authority. For instance, in 2001 (during the second intifada), the GoI suspended the regular transfer of clearance revenue until December 2002. Similarly, in the second quarter of 2006, the GoI suspended revenue transfers to the PA due to the Hamas electoral victory (and donors suspended budget support). Overall, in 2006, resources to fund recurrent budget expenditures fell by more than one third compared to

³⁹ World Bank (2006, p. 2).

⁴⁰ The ensuing losses to individual Palestinian workers are very high since wages earned in Israel are roughly two thirds higher than those earned in WBG (assuming there is a job available). World Bank (2006, pp. 20-21).

⁴¹ *Palestinian Economic Prospects: Gaza Recovery and West Bank Revival*. Economic Monitoring Report to the Ad-Hoc Liaison Committee. World Bank, June 8 (2009, p. 32).

⁴² World Bank (2007c, p. 6).

⁴³ Although conflict reduces economic growth and government revenue in general, most of the decline in Palestine seems to be due to the close connection of the Palestinian economy to the Israeli economy. In particular, the World Bank estimates that: "The steep decline reflected tightened restrictions on the movement of goods in and out of the West Bank and Gaza, and cutbacks in Palestinian consumer spending, both of which reduced imports." World Bank (March 2007c, p. 6).

the previous year. After the advent of the Salam Fayyad Government, the GoI restarted the transfer of clearance revenue (including the retained funds from February 2006 to June 2007) and donor funding resumed.

The energy sector is another area in which the Palestinian economy utterly depends on Israel. In particular, the PA depends on Israel for eighty percent of its electricity supply as well as for all petroleum imports.⁴⁴ Electricity imports from Israel into the West Bank and Gaza are supplied through the Israeli public power supply monopoly – the Israel Electricity Company (IEC). The IEC provides all the electricity supply used in the West Bank – except for the recent connection of the Jericho area to Jordan.⁴⁵ In Gaza, roughly 68% of electricity supply is provided directly by IEC while the 25% produced by the Gaza Power Plant also depends on Israel because the plant runs on gasoil imported from IEC. The remaining 7% of Gaza electricity supply is imported from Egypt. Because such a high percentage of Palestinian electricity supply comes from an Israeli public monopoly and gets to Palestine physically through Israel, the Israeli government can disrupt the electricity supply to the West Bank and Gaza at any time.

This dependency has had dire consequences on the financial management of the electricity sector, on actual electricity supply – especially in Gaza – and on overall strategic energy planning. Regarding financial management, the Israeli Ministry of Finance systematically deducts from the tax revenues it collects on behalf of the PA the amount owed to IEC by Palestinian electricity distribution companies and municipalities which are unable to/do not pay the IEC fully for its electricity supply. The total amount deducted for this concept from PA revenues amounted to more than 350 million USD since 2000. This payment collection system means that Palestinian electricity distribution companies and municipalities have weak incentives to collect payments from clients since any leftover amount will by default be passed on by the IEC to the PA. This perverse incentive system jointly with the ongoing economic crisis has led to an increasing culture

⁴⁴ Arnon and Bamy (2007, p. 168).

⁴⁵ This is a positive development whose replication is advised in the recommendations section of this paper. “The PA has agreed with Jordan to connect the Palestinian power grid to that of Jordan at Jericho through a 33kV line via King Abdallah Bridge. JDECO (Jerusalem District Electricity Company) submitted a new request recently to upgrade the line to 132 kilovolt, which is compatible with the voltage supplied by the Jordanian electricity company. This connection would not link the power grids of Israel and Jordan. JDECO will execute the work on the Palestinian side. The Jericho area will be disconnected from the Israeli power grid, and JDECO will manage a separate electricity supply system for the customers connected to the electricity supply from Jordan. The Israeli Ministries of National Infrastructure and Defence (Civil Administration) have approved this connection.” World Bank, *West Bank and Gaza Energy Sector Review*. (May 2007, p. 14).

of non-payment,⁴⁶ weakening the sector's financial management, placing a great burden on PA finances and straining the relationship between electricity distribution companies, municipalities and the PA.⁴⁷

This system also weakens institutional legitimacy and emphasizes the dependence of the PA on Israel. The PA has acknowledged this situation and taken action to redress the part that is within its power – attempting to improve collection rates from consumers and municipalities. To this effect, it is working on introducing a system of (water and electricity) "payment certificates" that will be necessary to engage in any transactions with or receive payments from the PA.⁴⁸ The PA has also started monitoring municipalities' bank accounts to ensure that payments made by consumers are indeed transferred to suppliers. On their side, some electricity distribution companies such as GEDCO are planning to introduce pre-paid meters to increase their collection rates.

Perhaps the most obvious example of the potential consequences of Palestinian dependence on energy supply from Israel is the current energy crisis in Gaza. Since the 2006 Hamas electoral victory, Israel has imposed a blockade on the Strip. As has been documented by aid relief organisations and donor agencies, this blockade has had a disastrous impact on the economy of the Gaza Strip and hence on the living conditions of the population. In the energy sector, the blockade has led to a sharp reduction in electricity supply. Israel has the means to implement this reduction both because the electricity supply to the Strip – except for 7% which comes from Egypt⁴⁹ – and the fuel for the Gaza Power Plant come from Israel and because Israel controls entry and exit into Gaza. In September 2008, the Gaza Electricity Distribution Company (GEDCO) calculated the energy deficit to be at 15% and it forecasted it to rise to 25% in the winter-time.⁵⁰ This electricity supply deficit has led to intermittent power cuts with a heavy impact on industry, sewerage treatment plants and hospitals.

Moreover, the Gaza Power Plant warehouse is experiencing a shortage of basic electrical materials needed for system maintenance such as transformers, cables and fuses. Many of these materials have been purchased and donated and have been waiting

⁴⁶ This problem is particularly acute in Gaza due to the Israeli-imposed blockade. Currently, the collection rate of the Gaza electricity distribution company GEDCO is only around 25-30%. *Status of GEDCO*, 2008, p. 2.

⁴⁷ The IMF estimates that "net lending" from the PA to the municipalities and electricity distribution companies "rose from NIS 1.5 billion (7.4% of GDP) in 2006 to NIS 2.2 billion (10.6% of GDP) in 2007, as utility collection rates declined, and some municipalities used households' utility payments to pay for other municipal services." International Monetary Fund, (2008, p. 8).

⁴⁸ International Monetary Fund, (2008, p. 7).

⁴⁹ *Status of GEDCO*, 2008: Table 1. "Sources of Energy and Deficit."

⁵⁰ *Status of GEDCO*, 2008: Table 1. "Sources of Energy and Deficit."

in Israel and the West Bank for transport into the Strip for over six months. The GoI, however, has denied all applications submitted by the Palestinian Energy Authority for security permission to transport them into Gaza. The absence of spare parts has led to the inability of GEDCO to carry out even basic maintenance work on its network – including in such sensitive areas as water wells, sewage stations and hospitals. Lacking maintenance constitutes a high risk of injury and death accidents to the population and is likely to affect electricity supply in the future.⁵¹ It also contributes to heavy network losses, which are currently estimated at around 30%. Sewage leakages have already been a problem for some time and are polluting the waters in Northern Gaza, endangering the lives of the Bedouin population there.⁵² Overall, the Gaza energy crisis underscores the dire consequences of the total dependence of Palestine on Israel for electricity supply as well as the urgency to diversify electricity supplies toward own generation and purchases from Jordan and Egypt.

Moreover, the current system of electricity supply through the IEC does not properly suit Palestinian needs. As has been noted by the Aix Group, there are problems of quantity and price of electricity supply as well as voltage. In order for municipalities to increase the amount of electricity they purchase from the IEC, they need to pay it large fees and the IEC does not even respond to this increase in demand unless it has extra supply in its transmission lines. In addition, priority in service is given to the Israeli customer, leaving the end of feeder lines in Palestine with low voltage which often results in electricity cut-offs during grid maintenance operations.⁵³

Finally, all petroleum imports into Palestine are managed by a Palestinian monopoly (the Palestinian Petroleum Commission), which in turn buys fuel from a single Israeli supplier.⁵⁴ This two-sided monopoly increases the energy dependence of Palestine on Israel and prevents the PA and private Palestinian companies from exploring alternative sources of energy supply. Options for increasing energy autonomy will be discussed in the recommendations section at the end of this paper.

⁵¹ World Bank sector mission notes, November 2008.

⁵² Letter dated November 5 2008 from GEDCO to the World Bank.

⁵³ Arnon and Banya (2007, p. 170).

⁵⁴ “The Israeli company *Dor Alon* was the sole company chosen by the Palestinians to supply oil products for West Bank and Gaza from 1994 until the end of 2006. Starting from January 2007, the largest fuel marketing company in Israel – Paz Oil – was chosen by the PA to supply the product requirements of the West Bank.” *West Bank and Gaza Energy Sector Review*. Washington: World Bank (May 2007, p. 12).

5.2. De-development

Sara Roy characterised the economic trajectory of the Palestinian economy since its occupation by Israel in 1967 as “de-development.” She defines this process as one dominated by expropriation, integration and de-institutionalisation and substantiates it in developments occurring up to the year 1999.⁵⁵ This sub-section will attempt to elucidate whether this process of de-development has continued after the year 2000. To do so, it will track six economic transmission mechanisms which link the *de facto* economic regime described above with its actual economic consequences. These economic transmission mechanisms are: wages, land and electricity prices, transport costs, isolation from the outside world and fragmentation of the internal economic space.

Wages – The (relative) integration of the Palestinian economy into the Israeli economy which took place after 1967 bid up Palestinian wages (and overall prices) to levels well above those of countries at comparable stages of development. For instance, the average wage of a Palestinian production worker is about twice that of a Jordanian worker and almost three times an Egyptian’s.⁵⁶ However, due to the special circumstances of conflict and occupation (such as low levels of public and private investment and reduced scope for enterprise learning and technology transfers), Palestinian productivity levels did not go up by enough to compensate for wage increases. Dessus (2004) finds that, between 1968 and 2000, rising productivity in Palestine only marginally contributed to GDP growth, which was mainly fuelled by factor accumulation.⁵⁷ For the 2000-2004 period productivity increased, but not by enough to keep up with rising costs and international competition.⁵⁸ In fact, the average wage productivity in Palestinian industry is only 57% of Egypt’s and 85% of Israel’s. In specific – particularly labour-intensive – sectors, competitiveness gaps are even starker. For instance, Palestinian wage productivity in the food processing industry is only 66% of Egypt’s and 41% of Turkey’s while, in the wearing apparel sector, Jordan’s wage productivity is triple and Egypt’s and Turkey’s nearly double that of Palestine. As a result, in many areas, Palestinian workers are not competitive with the rest of the world.⁵⁹

⁵⁵ See, for instance Roy (1999).

⁵⁶ World Bank (2007b, p. III).

⁵⁷ Dessus (2004).

⁵⁸ World Bank (2007b, pp. 14-15).

⁵⁹ World Bank (2007b, p. 16).

Land and Electricity Prices – Over the past forty years, there has been a continuing process of confiscation of Palestinian land by the GoI. As a result, the availability of remaining land in Palestine is low and its price is very high. Land suitable for industrial development in Ramallah costs from \$100 to over \$200 per square meter, levels which are comparable to those of prime real-estate in major European cities.⁶⁰ Similarly, the average cost of serviced land in Palestine is roughly three times the cost of land in Egypt and five times the cost in Jordan.⁶¹ As a result, the World Bank's 2007 Investment Climate Assessment finds that Palestinian businessmen view the availability of serviced land as a major constraint to developing new businesses and expanding existing ones.⁶² The current restricted framework through which energy supply decisions are being made has also led to a supply shortage and soaring electricity prices. In the year 2000, the average price of electricity in Palestine was twice as high as in Lebanon, three times higher than in Israel and Jordan and five times the price in the USA.⁶³

Transport Costs – Transport costs are a further contributor to de-development. After uncertainty, transportation is cited by Palestinian businessmen as the most important constraint to the expansion of the private sector.⁶⁴ Israel requires that Palestinian trucks use the "back-to-back" system according to which all goods need to be unloaded from and re-loaded again onto trucks at checkpoints. Moreover, routes are now much longer due to the blocking of some roads to Palestinians and the multiplication of checkpoints. As a result, the World Bank estimates that a truck that was able to make three rotations per day before the Intifada now makes only two. All of these obstacles have significantly raised unit transportation costs. By restricting access to major West Bank cities such as Nablus, Ramallah, Jerusalem, Bethlehem or Jenin, closures have dramatically raised transportation costs within the West Bank. On the basis of interviews with drivers of two major Ramallah-based companies, the World Bank estimates that transport costs alone have gone up by more than 100% along major trading routes compared to pre-Intifada times. Similarly, a one week closure in Gaza leads to an estimated four-fold increase in transportation costs for a furniture producer as importers and exporters need to pay extra fees for shipments stuck at the terminal. These extra costs amount to 77% of the value

⁶⁰ World Bank (2007b, p. 47).

⁶¹ World Bank (2006, p. 69).

⁶² World Bank (2007b, p. 47).

⁶³ Arnon and Banya (2007, p. 169).

⁶⁴ World Bank (2007b, p. 38).

added in the Gaza Strip. Prolonged closures are particularly damaging. During prolonged closures, importers and exporters from Gaza experienced an almost tenfold increase in the cost of transport from the port of Ashdod in Israel to Gaza compared to the cost before the Intifada.⁶⁵

Another major factor increasing the cost of transport is unpredictability. The degree of uncertainty on the time needed to clear customs, for example, is very high. The 2007 World Bank Investment Climate Assessment survey reveals that, on average, it takes companies in the West Bank around 22 days to clear imports. However, the longest time averages nearly 43 days.⁶⁶ This variability and uncertainty in time lags greatly increases transportation costs. In the case of maritime transport, a standard deviation of 20% of transport time increases transportation costs by nearly 4%.⁶⁷

Isolation from the Outside World – Because of the multiplication of barriers to movement and access, the Palestinian economy is becoming increasingly closed and inward-looking. Trade between Palestine and the rest of the world, between Palestine and Israel, between the West Bank and Gaza, and within the West Bank have all declined. Between 1999 and 2006, Palestinian exports declined from 19 to 12% of GDP while imports declined from 84 to 79% of GDP.⁶⁸ Similarly, between 1999 and 2003, Palestinian exports to Israel declined from 359 to 256 million USD while Palestinian imports from Israel fell from 1853 to 1307 million USD.⁶⁹

Fragmentation of the Internal Economic Space – Even before the closure of Gaza in 2006, movement of people and goods between the West Bank and Gaza was severely hampered and the corridor between the two areas was not operational. The situation worsened at the beginning of the Intifada and the World Bank’s Investment Climate Assessment finds that, since 2000, the percentage of WBG enterprises selling into the other territory has fallen by half.⁷⁰

Moreover, because of the combined impact of impediments to trade and economic activity within the West Bank, the size of markets inside the West Bank itself also appears to be shrinking. One could say that there is a *de facto* “fragmentation of the

⁶⁵ World Bank (2006, pp. 29-30).

⁶⁶ World Bank (2007b, p. IV).

⁶⁷ World Bank (2006, p. 21).

⁶⁸ International Monetary Fund (2006, p. 8).

⁶⁹ World Bank (2006, p. 41).

⁷⁰ World Bank (2007b, p. IV).

socio-economic space in the West Bank into a northern, a central and a southern economic zone, bounded on three sides by the separation barrier and to the west by the Jordan Valley, a significant agricultural area that is increasingly difficult for Palestinians to access.⁷¹ As a result, the percentage of Palestinian firms making a significant share of their sales outside their home city declined from nearly 60% in 2000 to around 40% in 2005.⁷² Because of this internal fragmentation of the economic space, which is reflected in large price differentials across areas, there is no longer a unified market within the West Bank.⁷³ This dramatic reduction in market size severely reduces economic opportunity and affects the ability of Palestinian firms to take advantage of scale economies.

6. The Economic Consequences of Dependence

The economic transmission mechanisms described above – wage growth outstripping productivity growth, over-inflated land prices, high transportation costs and uncertainty in delivery times and an increasingly autarkic and internally fragmented economy – combine to produce a host of negative economic effects which will be presented below. These effects are: low investment, de-industrialisation and overall weakening of the productive structure and deficiencies in firm capacity.

Low Investment – Private, public and total investment have declined almost consistently between 1999 and 2006. Over this time period, total investment as a percentage of GDP was halved, going from 38 to 19%. Private investment fell from 31 to 15% and public investment from 7 to 4% of GDP.⁷⁴ Moreover, in 2006, only 50% of firms in the West Bank and 25% of those in Gaza were investing and only 35% of West Bank firms and 15% of Gaza firms were investing in conducting formal personnel training.⁷⁵ Similarly, only 18% of firms had a loan.⁷⁶ The World Bank's 2007 Investment

⁷¹ World Bank (2007b, p. 25).

⁷² World Bank (2007b, p. V).

⁷³ As a result, the differences between the highest and lowest retail prices of agricultural commodities, for instance, are high – for tomatoes, eggplant, squash, cucumbers and bell peppers it ranged between 400% and 215%. World Bank (2006, p. 31).

⁷⁴ International Monetary Fund (2006, p. 8).

⁷⁵ World Bank (2007b, p. 18).

Climate Assessment found that “the fact that very few businesses have loans reflects not the lack of available funds or a weak financial system, but rather the lack of investment opportunities for Palestinian enterprises.” It also pointed out that there is no need to invest because existing capacity utilisation is very low – only 50%.⁷⁷

De-industrialisation – Sara Roy (1999) pointed out the weakening of the Palestinian productive structure induced by the context and policies of the occupation and called the trend de-development. The trend of a declining share of industry in GDP which she identified for the 1995 to 2000 period seems to have peaked at the height of the “integration” between the Palestinian and the Israeli economies. In fact, between 1995 and 2000, the share of agriculture and manufacturing in GDP declined from 13 to 9 and from 18 to 13% respectively. The sectors that took up the slack from agriculture and manufacturing were services and, in particular, real estate and “other services.”

On the other hand, following the relative “de-coupling” between the two economies since the onset of the second Intifada in 2000, the sectoral distribution of the Palestinian economy seems to have stabilised. Between 2000 and 2005, the shares of agriculture and manufacturing in GDP increased slightly, going from 9 to 10 and from 13 to 14% respectively. As a result of this slight recovery as well as an increase in construction as a percent of GDP, the (over-inflated) share of services in GDP over the same period declined from 48 to 45%.⁷⁸ However, the closure of Gaza since 2006 has led to a dramatic decline in its industrial production. Since producers can access neither the inputs for production nor the crossings to send out what they produce, the number of industrial working establishments in the Strip has declined by 95%, going from 3900 in 2005 to 195 in December 2007.⁷⁹

Although with the relative “de-coupling” from the Israeli economy since 2000 the decline in industry (and agriculture) as a share of GDP has been halted, the accompanying trend toward a more autarkic economy has led to a simplification of the productive structure. In the manufacturing sector, for instance, most exports are low value added goods that require little processing and the overall composition of exports reflects a very low and unsophisticated manufacturing base. It also indicates the lack of participation in intra-industry or intra-product trade. For instance, the fall in the share of processed food

⁷⁶ World Bank (2007b, p. 39).

⁷⁷ World Bank (2007b, pp. 40 and III).

⁷⁸ World Bank (2006, p. 4, Table 2).

⁷⁹ World Bank (2007).

and textiles in exports and the rising share of stone, marble and quarrying from 2000 to 2005 suggest that exports are becoming more resource-based and embody decreasing degrees of processing.⁸⁰ The World Bank's latest Country Economic Memorandum for the West Bank and Gaza finds that:

The trend of progressive deindustrialization of WBG continued in 2003 to 2005 as the economy moved toward goods at lower levels of the technology ladder and imports of food products largely crowded out imports of investment goods. The level of processing embodied in exports as captured by the aggregate share of food products together with industrial raw materials recently declined significantly. Similarly, a shift in import demand toward lower processed goods and the fall in investment goods which have accompanied the overall decline in total imports suggest a further erosion of the industrial base.⁸¹

In agriculture, Roy (1999) pointed out a decline in the share of high value added products for export and a turn toward basic foodstuffs for domestic consumption (potatoes, onions, tomatoes). Since 2000, agricultural exports have not increased as declines in the production of some products compensated for increases in others.⁸² Overall, a recent World Bank study finds the agricultural sector to be particularly resilient to closures and other movement and access restrictions. This is consistent, however, with a versatile sector which can turn from exports to catering to the domestic market depending on movement and access restrictions. In addition, the study pre-dates the closure of Gaza, which must have led to a sharp decline in agricultural exports from the Strip.

Moreover, the increasing isolation of the Palestinian economy from the rest of the world (including Israel) has led to stagnation in firm size and enterprise learning. In fact, in 2006, the average firm size in Palestine was about 4 workers, the same as it was in 1927, and only 21 industrial establishments had more than 100 workers.⁸³ This small firm size combined with limited access to enterprise learning help explain the fact that only a small share of industrial firms have international quality standards,⁸⁴ which greatly limits their market and export potential.

⁸⁰ World Bank (2007b, p. 17).

⁸¹ World Bank (2006, p. III).

⁸² World Bank (September 2006, Volume II, pp. 27-47).

⁸³ World Bank (2007b, pp. 1 and 19).

⁸⁴ World Bank (2007b, p. III).

The above-described de-development process has had a greatly deleterious effect on the welfare of the Palestinian population. This impact can be seen in terms of income per capita and poverty levels as well as in employment and unemployment trends. Real income per capita in 2005 remained about 30% below its pre-Intifada level and it was expected to be about 27% below its 2000 level in 2011.⁸⁵ According to the 2007 Household Survey, poverty was at 30% in Gaza and 19% in the West Bank. The overall employment level, which had fallen by 23% between 1999 and 2002, only recovered its pre-Intifada level by 2005. Similarly, the unemployment rate rose from 12 to 35% between 1999 and 2002. Due to population growth, however, even by 2006, unemployment had not recovered its pre-Intifada level and it stood at 24% (35% in Gaza and 17% in the West Bank).⁸⁶ By 2008, unemployment had continued to rise and it stood at 40% in Gaza and 19% in the West Bank.⁸⁷

6.1. Institutional de-legitimisation

This section will argue that the current institutional framework for economic relations between Palestine and Israel fosters – but does not create – neo-patrimonial rent-seeking behaviour and slows down the development of the legitimacy and independence of Palestinian institutions, with adverse implications for a future Palestinian state.⁸⁸ It will also argue that it is within the power of the PA to improve governance and, to a certain extent, take measures to enhance economic autonomy even within the difficult context of the occupation and the unsupportive framework of the Paris Protocol. The first subsection will analyze the governance situation in the 1990s. In particular, it will set out the patterns of neo-patrimonial rent-seeking behaviour supported by the Paris Protocol, the emergence of those patterns even in contexts independent from the Paris Protocol and the

⁸⁵ *Palestinian Economic Prospects: Gaza Recovery and West Bank Revival*. Economic Monitoring Report to the Ad-Hoc Liaison Committee. World Bank, June 8 (2009, p. 11).

⁸⁶ International Monetary Fund (2006, p. 6); and *Palestinian Economic Prospects: Gaza Recovery and West Bank Revival*. Economic Monitoring Report to the Ad-Hoc Liaison Committee. World Bank, June 8, (2009).

⁸⁷ *Palestinian Economic Prospects: Gaza Recovery and West Bank Revival*. Economic Monitoring Report to the Ad-Hoc Liaison Committee. World Bank, June 8 (2009, p. 10).

⁸⁸ Our argument will be that the Paris agreements and the constellation of political economy forces existing within and between Israel and Palestine created incentives for neo-patrimonial rent-seeking behaviour. However, this result is not deterministic and can be altered even in the current circumstances. This is supported by the fact that, when the PA has decided to tackle corruption and improve governance in a number of areas – as it increasingly did since 2002 and even more so since 2007 –, it has been successful in doing so. It is also corroborated by the fact that many cases of neo-patrimonial behaviour – such as the rent-seeking or *wasta* involved in PA participation in many Palestinian private enterprises – did not in any way involve the Government of Israel or Israeli companies.

resulting perception of PA corruption in the eyes of the Palestinian public. It will finish by briefly examining the likely impact of the dependence of Palestinian institutions and the Palestinian economy on Israel on the popular credibility of the PA. The second sub-section will turn to describing the political economy that underlined the governance situation of the 1990s and how this system was increasingly resented by the Palestinian population and was shaken by the second Intifada starting in 2002 and the election of the Hamas government in 2006. The third and final sub-section will describe how the new government of Salam Fayyad is working to improve governance while still operating without the required autonomy in a fragile political economy environment which is very different from that prevailing in the 1990s.

6.2. PA Governance in the 1990s

The Paris Protocol supported rent-seeking behaviour through two main avenues. The first is the financial management system and, in particular, the tax collection system it devised. The second is the network of public and private monopolies it legitimised. Until the 2002 reforms, tax revenues from excises on petroleum, tobacco and alcohol, as well as profits from public enterprises were deposited directly into private accounts outside the purview of the Ministry of Finance. Moreover, the 1995 Investment Promotion Code provided the executive with wide and unspecified discretionary power to grant exceptional tax exemptions to large projects.⁸⁹ The dangers to good governance posed by such policies were pointed out early on by international donor agencies.⁹⁰ These arrangements, however, were approved and condoned by Israel (who deposited funds directly into private rather than PA accounts) and the diplomatic community.⁹¹ This has now been openly acknowledged, including by the World Bank: “At the beginning of the Oslo process [...] several risky compromises were accepted by the diplomatic community. The first of these was the creation of a Palestinian financial system featuring

⁸⁹ These policies were part of the Law of Encouragement of Investment passed in 1995 and modified in 1998. “Critics argued that the law was not effective because it ignored small-scale businesses, which represented the majority of Palestinian enterprises. It was claimed that the Law was biased toward large firms and thus promoted monopolies for politically influential groups in the Palestinian economy.” Nasr (2004, p. 176).

⁹⁰ See, for instance, Chua (1998).

⁹¹ The bet of the international community in the 1990s was that they needed to support President Arafat at any cost. The cost, however, ended up being the disenchantment of the Palestinian population and growing support for Hamas culminating in its 2006 electoral victory. The diplomatic community was also wary of holding the PA accountable since it was unwilling to hold Israel accountable – for its part in implementing the Oslo agreements as well as for continuing settlement expansion.

certain opaque elements that could operate beneath any "radar screen" of public accountability, and would offer President Arafat what was referred to by some diplomats as "walkabout money" with which to secure political loyalties."⁹² Whether this money was siphoned off or simply used for public PA or PLO purposes beyond public scrutiny, the fact remains that the system did not comply with any basic standards of transparency and accountability.

Regarding the role of public monopolies, much remains to be explored at the analytical level and tackled at the policy level. The facts are that the PA granted monopolistic concessions to private investors in large infrastructure projects, such as telecommunications and electricity, which were accused of being awarded in a non-transparent manner, were poorly regulated and often resulted in high profits for providers, high costs for customers and entry barriers to other potential Palestinian entrepreneurs. In the area of telecommunications, a single company, PALTEL, was granted a 20-year license to operate, maintain and manage the telecommunications sector in Palestine. PALTEL has been subject to heavy criticism, including of abuse of monopoly power and clientelism. World Bank studies substantiate these claims and have called for an opening up of the sector to competition. A 2008 report describes the sector as being characterised by "the presence of a private regulated monopoly, unauthorised competition (from Israel), and overall weak governance and regulation" and calls for the urgent liberalisation and improvement in regulation of the sector.⁹³

The PA also monopolised imports and distribution of cement and petroleum. The monopolies in the import of petroleum and cement were established in cooperation with Israeli firms. In the case of the cement sector, it seems that large business interests on both sides coalesced to form the Palestinian import monopoly and its relationship to the Israeli monopoly *Nesher* Company. Indeed, "the PNA cement monopoly has been criticised not only because it eliminated competition and raised costs for the vital construction sector, but also because it created a powerful coalition against the development of a Palestinian cement industry."⁹⁴ All of the above-described monopolies were institutionalised by the Paris Protocol.

As mentioned above, however, there were cases in which rent-seeking was unconnected to the Paris Protocol or to Israel. For example, the PA went into business partnerships with private firms in sectors which do not warrant government intervention,

⁹² Roberts (2002, p. 19).

⁹³ World Bank (2008a).

⁹⁴ Nasr (2004, p. 185).

such as hotels, casinos, cigarettes and flour milling. In these areas, moreover, there was no relationship to Israeli firms nor were the interventions reflected in the Paris Protocol. As it is now acknowledged, “each of these strategies involved discriminatory support for large firms.”⁹⁵ This is also the perception of Palestinian businessmen. A 2005 Survey conducted by the Center for Private Sector Development of the Palestinian Businessmen Association found that “Palestinian entrepreneurs still perceive a degree of corruption in the PA and insufficient transparency of its activities. The major issues of concern by businessmen encompass the PA’s direct involvement in commercial activities (for example, fuel, cement, cigarettes) and the lack of progress with promised gradual withdrawal.”⁹⁶ A World Bank survey also found that, in 11% of cases, respondents “claimed that a government agency or official had asked for part ownership of their firm as a condition to allow them to operate.”⁹⁷ Similarly, a 1997 Palestinian Legislative Council report denounced that a large number of firms either totally or partially owned by the PA did not have their revenues collected through the government budget nor were they audited by the Palestinian Public Monitoring and Audit Department.⁹⁸ As a result of all these opaque fiscal and regulatory practices, the PA was perceived by the Palestinian population as increasingly corrupt.⁹⁹ By 2004, polls found that 84% of Palestinians perceived there to be corruption and 94% believed that one could obtain a government position only through connections.¹⁰⁰

The PA was not only perceived as corrupt, but also as not autonomous and not credible. The fact that the Oslo process created the first Palestinian government in history has been hailed by many as a success in and of itself. For instance, Kimmerling and Migdal view it thus: “The Oslo process created the first ever Palestinian government [...] Sometimes that governance was surprisingly effective; most times, it was frustratingly inefficient, even corrupt. Still, it consisted of Palestinians ruling Palestinians.”¹⁰¹

Because this first government was a government without a state and a government that was utterly dependent – and designed to be dependent – on Israel, its credibility was

⁹⁵ Nasr (2004, p. 176).

⁹⁶ World Bank (2006, p. 65).

⁹⁷ Nasr (2004, p. 182).

⁹⁸ These firms included the Petroleum Public Commission, Al-Bahar Company, the Tobacco Commission, Palestinian Commercial Services Company, the Radio and Television Commission and the Palestinian National Company for Economic Development. Nasr (2004, p. 180).

⁹⁹ See the Jerusalem Media and Communications Center, the Development Studies Program at Birzeit University and the Palestinian Center for Policy and Survey Research for examples. Keating 20.

¹⁰⁰ Brynen (2002, p. 137).

¹⁰¹ Kimmerling and Migdal (2003, pp.346-347).

questioned from the outset.¹⁰² Surveys show that Palestinians consider independence as the highest national priority (34%), well ahead of national unity (26.5%) and economic prosperity (16.5%).¹⁰³ There is also a tendency by sectors of Palestinian intellectuals to view close economic integration with Israel as a form of neo-colonisation.¹⁰⁴ Therefore, the uneven "economic integration" and dependence which was institutionalised by the Oslo process as described in the previous sections could easily be seen to corroborate these fears. Moreover, international experience shows that the gap between the PA's *de jure* and *de facto* institutional frameworks is likely to further erode its credibility, weakening prospects for healthy institution-building well into the future.¹⁰⁵ Last but not least, the perceived dependence and "pliability" of the PA to Israel – *de jure* as institutionalised in the Oslo and Paris accords and *de facto* in its policies and those of the Israeli government – not only weakened the PA, but also strengthened the standing of Hamas, which increasingly presented itself as the only truly autonomous option from Israel.¹⁰⁶

¹⁰² For a description of the development of the PA as "client state" resulting from an "asymmetric containment strategy" fostered by Israel, see Khan (2003).

¹⁰³ Brynen (2002, p. 133).

¹⁰⁴ "[...] elements of the Palestinian leadership and social elite, like others in neighbouring Arab countries, feared such an approach (economic integration) and viewed it as a sort of economic colonisation, which would replace direct Israeli military rule in the region with indirect technological and economic control." Kimmerling and Migdal (2003, p. 387).

¹⁰⁵ Gaps between *de jure* and *de facto* institutional structures are common in developing countries, in particular in colonial and post-colonial environments – such as those of Africa and Latin America. In these continents, the first "modern" legal framework their populations ever knew was that of the colonial power. The second was that set up after independence by elites which often imported a *de jure* framework from the colonial power, but proceeded to operate through *de facto* policy processes which greatly differed from their formal legal frameworks. This disconnect between formal (*de jure*) and informal (*de facto*) institutions and policies gravely eroded the credibility and legitimacy of the state in Africa and Latin America. In contrast, state legitimacy and credibility is much higher in regions which have had the "historical luxury" of developing their institutions unencumbered by colonialism, such as most of Asia. In such countries, the correspondence between *de jure* and *de facto* institutions is much closer because formal institutions reflect the outcome of an endogenous process of political development.

¹⁰⁶ Recent polls, however, show that popular support for Hamas since it actually took power in Gaza has declined dramatically as the population experienced the worsening living conditions resulting from the Israeli blockade of the strip, Hamas repression and declining security due to Hamas-Fatah in-fighting. 83% of Gazans believe living conditions have deteriorated since Hamas took power. Near East Consulting's Poll on the Gaza Strip #4. November 2007. <www.neareastconsulting.com/surveys/gaza/files/GazaMonitor-nov07-fin.pdf>. The same polls also show a concomitant decline of support for the peace process.

6.3. The Political Economy of the 1990s and its crisis

This political economy scenario characterised by poor governance, dependence, and eroding credibility was the result of the coalescence of a series of forces prevailing in Palestine and Israel in the 1990s. One could argue that the result of this confluence of forces was over-determined in that each one factor alone was sufficient to explain the ultimate outcome and, hence, that it is hard to ascertain which one of them was the determining cause. In one analysis, the historical tradition of neo-patrimonialism in Palestine (since the time of the Ottoman Empire carried through by the British, the Jordanians and the Israelis) and of the PLO in exile could be seen as simply resulting in its transposition to the PA. In a second analysis, it could be argued that the confluence of a strong occupying state (Israel) with a weak occupied non-state naturally led to the wish of the former to create a client country in the latter (Palestine).¹⁰⁷ These objective conditions would explain the desire and ability of Israel to create weak and dependent economic and political elite in Palestine supported by the unnecessary and ill-regulated monopolies that are reflected in the Paris Protocol and by the Israeli forbearance and even support for the web of financial irregularities that emerged in the 1990s.

It can also be argued that what emerged was truly the result of the combination of all of these factors.¹⁰⁸ In this view, a few well-organised actors with good channels of communication between them – the PLO elites, the wealthy Palestinian Diaspora businessmen, the Government of Israel and Israeli big business – cooperated to create the above-described arrangements. These arrangements did not serve well the interests of the Palestinian – and arguably the Israeli – populations, but did create benefits for those participating – the Palestinian Diaspora and Israeli firms through their business profits, the PLO elite through concentration of power and economic benefits, the Israeli government by creating a dependent “client” non-state in Palestine.

As the 1990s proceeded, however, the Palestinian population became increasingly frustrated. The economy stagnated, there was no progress in the peace process and settlement expansion continued unabated. Moreover, restrictions to movement and access

¹⁰⁷ As Shimon Peres argued in *The New Middle East*, “A separate Palestinian state would be received with unease, either overtly or covertly, among Jordanians, and would face fierce opposition from Israelis.” (p. 175) Therefore, he proposes a confederation with Jordan with a demilitarised West Bank and Gaza “except for the Israeli security areas.” (p. 173) The fact that this was the political vision proposed by Peres in 1993 would support the view that the creation of economic dependence through Oslo was deliberate and part of a broader plan of creating a dependent Palestinian non-state. Whether this entity would be under Israeli or Jordanian tutelage was of secondary importance. Peres (1993).

¹⁰⁸ For a description of these various interpretations, see Brynen (1995a).

to Israel as well as between and within the West Bank and Gaza multiplied and were highly unpredictable making the daily life of the population as well as any business activity increasingly difficult. Many of the provisions of the Oslo accord were not implemented and the population started to doubt if they ever would be. It also became increasingly clear that the PA would no longer be able to ignore the new emerging centres of power in Palestinian society – the educated and organised poor in villages and, especially, in refugee camps and their grass-roots organisations, the new intellectual elites from the universities and their NGOs, and the emerging Islamic movement. Finally, any expectations for “good governance” that the Palestinian population may have entertained from its leaders were badly disappointed. It was in this context that the second intifada erupted in the year 2000. As described by Kimmerling and Migdal:

The Al-Aqsa intifada directed discontent not only at the Israeli occupation but also toward the inefficiency, corruption, and authoritarian rule of the PA and its inability to bring about the expected economic development, rise in the standard of living, and true liberation from Israeli occupation. The uprising also brought growing dissatisfaction with Arafat’s leadership into the open.¹⁰⁹

The Intifada was a turning point. In the future, neither the PA nor the diplomatic community would be able to ignore the Palestinian population the way it had been ignored during the years of the Oslo process. Moreover, a new class of Palestinian intellectuals and professionals as well as grass-roots activists which had emerged at Palestinian universities and become active during the first intifada also challenged PLO dominance in the political arena while the spectre of Hamas lurked in the background ready to bank on any and all real and perceived PA failures. At the same time and at the international level, the donor community had undergone a process through which “good governance” and, in particular, good financial management had been put to the forefront. With this confluence of new forces, the “gentlemen’s agreement” of the 1990s between PLO elites, the diplomatic community and the government of Israel was no longer viable. Most prominently, it would no longer be possible to sweep PA financial mismanagement under the rug for political expediency. Finally, many governments in the Arab world were coming under increasing pressure by Islamic movements which used as fuel the ongoing Israeli-Palestinian conflict. As a result, these governments stopped viewing the continuation of the conflict –which had been used for decades as a diversion of public

¹⁰⁹ Kimmerling and Migdal (2003, p. 393).

attention from their internal failures-- as being in their interest. On the contrary, they realised that an effective, secular and moderate Palestinian leadership that was able to bring about an end to the Israeli occupation would be a great contribution to maintaining their own internal stability.

This change in the constellation of political economy forces at the beginning of the new century led to the beginning of the implementation of reforms in the PA. Most prominently, some of the worst abuses in public finance management were eliminated. Between 2000 and 2004, the PA implemented a series of important public finance management reforms. These reforms included the establishment of a Central Treasury Account through which all revenues are collected and all payments are made (and the concomitant elimination of side accounts leading to the diversion of funds). The PA also started formulating an annual budget approved by the Palestinian Legislative Council and which forms the basis for expenditures throughout the year. It established tight controls on the expenditures of government ministries, transferred payroll responsibilities to the Ministry of Finance, made payments of public sector salaries exclusively through bank accounts, and improved the operation and oversight of Palestinian public investments. These reforms, according to the World Bank, had the result of “taking (the PA) from being a relative laggard in many respects (of public finance management) to setting an example for the MENA (Middle East and North Africa) region.”¹¹⁰

These reforms, however, were viewed by the public as “too little too late” and, after the PA held elections under pressure from the United States in 2005, the Palestinian population elected a Hamas government. After having forced elections on Palestinians (and Israelis) and refusing to accept their results, the United States – and the rest of the western international community – isolated the newly elected Government and stopped supporting it financially. In order to continue supporting the Palestinian population, they channelled their funds through newly created accounts outside the purview of the Ministry of Finance and directly under the President of the PA, Mahmoud Abbas, as well as to non-governmental organisations.

6.4. Governance and Economic Autonomy in the Salam Fayyad Government

The stand-off between the PA and the donor community came to an end in the West Bank with the establishment of a new government led by former Finance Minister Salam

¹¹⁰ World Bank (2007b, p. VI).

Fayyad. The combination of Mahmoud Abbas as President and Salam Fayyad as Prime Minister – one a recognised reformer and the other a well-respected technocrat – signalled the intention of the PA to turn a new page in leadership and policies. The Palestinian Reform and Development Plan (PRDP) they presented in December 2007 reflects this new consensus within the PA leadership. The document clearly states in its preamble that its goal is “stabilization and rebuilding of trust”¹¹¹ by enforcing security (within Palestine and in Israel), improving governance and reducing corruption, increasing prosperity and regaining legitimacy.

The latest reports of the IMF and the World Bank report that the Salaam Fayyad government is making progress in institution-building, improved public finance management and fiscal consolidation.¹¹² They praise the PA for its fiscal management through its control on the public wage bill and the reduction in utility subsidies as well as its improvements in cash management and control on expenditure commitments.¹¹³ The Fund notes that the 2009 deficit was in line with the budget targets and that further adjustment was planned in the 2010 budget. The IMF also noted that private sector confidence had increased in the West Bank due to the Palestinian Authority (PA)’s track record in institution-building as well as its reforms in the security, public finance, and governance areas.

Both institutions called on the donor community to support the government’s adjustment effort, in particular given the enormous needs of the reconstruction effort in Gaza.

The World Bank also praised the government’s efforts to increase development expenditures and to link policy-making, planning and budgeting, steps which are critical to sound governance and accountability. The Government has also taken measures to deliver on the thorny and long-delayed liberalisation of the telecommunications market. To this effect, the agreement to grant licenses to a new company – *Wattanyye* – to operate alongside PALTEL finally came into effect after over a year of delays in the approval and release of the licenses by the Israeli government. These reforms, entailing the reversal of many of the malpractices supported by the Paris Agreement, show that a PA with the necessary political is able to improve governance even in the current unsupportive circumstances. Opinion polls seem to appreciate the progress made by the PA and show a

¹¹¹ *Palestinian Reform and Development Plan*. Ramallah: PA, December 2007. Opening Statement.

¹¹² IMF (2010) and World Bank (2009).

¹¹³ International Monetary Fund, (2008).

positive and improving appraisal of the Fayyad government regarding both economic management and security.¹¹⁴

The implementation of the PRDP can address one of the key shortcomings of previous governments by improving governance. In addition to good governance, however, two key economic outcomes will likely be needed to enhance the credibility of the current PA government and build the basis for increased economic autonomy. These two outcomes are an improvement in economic performance and, hence, in the living standards of the Palestinian population, and a clear focus on building strategic economic autonomy. An improvement in economic performance, as the experience of the past two decades and basic economic logic show, is highly unlikely to pan out unless there is a significant easing of current restrictions to access and movement of people and goods.¹¹⁵ Movement is the lifeblood of any economy and, in the current circumstances, the Palestinian economy is likely to continue to turn inward into increasingly stagnating and self-contained local economies within checkpoints. The PA is making great efforts to improve security. However, for an easing of restrictions to take place, a decision in this regard is needed by the Government of Israel and, for the moment, no such decision has been forthcoming.¹¹⁶

Our paper also suggests that, in addition to implementing the priorities of the PRDP – with all of which we concur – the PA should make it a priority to develop strategic economic autonomy from Israel. Without institutional and policy autonomy, the prospects for the development of the future institutions of an independent Palestinian state will be severely impaired and it will be difficult for the PA to deliver the socio-economic outcomes the Palestinian population expects. This paper's section on policy recommendations will point out some areas where these choices are particularly important for the PA, especially in the trade, tariff and tax collection, and energy sectors.

¹¹⁴ Results of this poll show a steady increase in the positive evaluation of the Fayyad government. The majority (58%) of respondents evaluate the performance of the Fayyad government in improving the economy positively (a 4-point increase since August 2008). Similarly, 60% of respondents positively evaluate the performance of the Fayyad government in improving the security situation. AWRAD, *Results of an Opinion Poll. National Dialogue, Government Performance, Tunnels in Gaza, Palestinian Elections, American Elections*. October 2008.

¹¹⁵ This is a point which has repeatedly been made by all development agencies as well as by the PA itself. For a description of existing obstacles, see World Bank (2007a).

¹¹⁶ An easing of restrictions to movement and access within the West Bank would probably need the removal of settlements – as most checkpoints are there to protect settlers – and the GoI has shown no political will to move in that direction. On the contrary, settlement expansion continues apace and with it the multiplication of restrictions to access and movement for Palestinians.

It will also present summary recommendations for the donor community, the Arab world and the Government of Israel.

7. Conclusions

The *de jure* economic regime and policies governing Palestine-Israel relations is one of *sui generis* economic integration featuring a customs union with labour flows. This is an economic regime appropriate for a liberal peace-time framework among sovereign and well-established states willingly seeking the benefits of economic integration. The context of Palestine-Israel relations, however, is completely different. It is a mercantilist context of war and occupation between two fundamentally unequal partners. One of them (Israel) is a well-established state with a developed economy and a strong military and it is occupying the other (Palestine), which is a weak nation with no formal state, fledgling institutions and no army.

The result of imposing a liberal peace-time framework on a mercantilist reality of war and occupation has been a lopsided *de jure* regime. This regime consists of a customs union whose policies are determined unilaterally by Israel and extended to Palestine and labour flows envisaged as a general principle with the ability of each party to limit them at will. The *de facto* regime is even more problematic and appears wholly unbound by the legal restrictions envisaged in the *de jure* framework. This framework is characterised by pervasive and highly unpredictable restrictions to movement and access of people and goods, continued confiscation of natural resources (especially land and water) and a regime of military and administrative decisions affecting all aspects of economic relations. This regime is most accurately characterised by its uncertainty and its unilateral determination by Israel through its own economic, political and security considerations.

The economic consequences of the combination of the above-described *de jure* and *de facto* economic regimes on the Palestinian economy are dependence, de-development and institutional de-legitimation. The dependence of the Palestinian economy on the Israeli economy can be found at many levels including production levels and productivity growth, trade, labour flows, fiscal revenues and electricity supply. They also extend to other aspects not examined in this paper such as currency, banking system, private sector business ties, the health sector and the environment. This dependence greatly reduces the degrees of freedom of the Palestinian Authority and keeps the Palestinian economy as

an impoverished “appendix” of the Israeli economy. This dependence has also meant that the Palestinian economy is completely at the mercy of the Israeli economy and its fluctuations, the cycles of the conflict, and the policy decisions of the GoI. This economic leverage has consistently been used by the GoI as a political tool in its conflict with Palestine.

It has also led to de-development through a number of economic transmission mechanisms such as wage growth outstripping productivity growth, over-inflated land prices, high transport costs and uncertainty in delivery times and an increasingly closed and internally fragmented economy. The economic effects of these developments have been reflected in low and declining investment levels, de-industrialisation, an overall weakening of the productive structure and deficiencies in firm capacity. The overall impact on the welfare of the Palestinian population has been dramatic. Real incomes per capita in 2006 were 30% below their pre-intifada levels, and poverty and unemployment stood at 46 and 24% respectively.

Finally, the gap between the *de jure* and the *de facto* economic regimes, the lack of sovereignty and the dependence of PA institutions on external actors and exogenous factors, the support by the Paris Protocols and the GoI of poor governance in economic arrangements in the PA, and overall weak development results have contributed to the emergence of a deficit in the legitimacy of the fledgling institutions of the Palestinian Authority. Reversing these trends and making progress toward strengthening the economic autonomy and the effectiveness and credibility of Palestinian institutions will require a substantial change in the strategic direction of the economic regimes implemented so far. In particular, it will likely require a systematic but progressive and pragmatic re-engineering of economic relations away from Israel and towards the rest of the world.¹¹⁷ For this strategy to pan out, it needs to be led by the PA and supported by the donor community and the Government of Israel.

Only with a strategy of systematically increasing economic and institutional independence will Palestine be able to reduce points of friction with Israel, strengthen its institutions and economy and be able to gain the credibility and legitimacy it needs in

¹¹⁷ This chapter is written from the vantage point of Palestine. It is likely, however, that a strategy of progressive separation from the Palestinian economy is also advisable for Israel – chiefly for security reasons. A policy of increasing separation also seems to be what Israeli policy-makers are actively pursuing and stating as their goal. Hence, the Palestinian economy may not have much choice but adjust to this ongoing *de facto* “de-coupling.” As long as the occupation of the West Bank and Gaza continues, however, Israel is legally responsible for the welfare of its population and hence cannot fully “de-couple” from its occupied territories.

front of its population. Ultimately, the peace process will also benefit from a less imbalanced relationship between the two parties, greater autonomy among them, fewer points of friction in their relationship and, hence, fewer opportunities for collective punishment which only worsen the chances for reconciliation. It is only through mutually-agreed steps undertaken autonomously by two independent states in a context of peace that real cooperation can ultimately emerge in the medium to long run. This scenario, however, is unfortunately still a long way off and acting as if it were here today will only put off its advent increasingly further into the future.

8. Recommendations

Although the ultimate solution to the Palestinian economic problem is the end of occupation, we still recommend the following as needed policies to mitigate the effect of the *de facto* mercantilist condition. In order for the recommendations to have an impact, if implemented, Israeli governments should take all measures necessary to allow for the reduction of obstacles to movement and access by Palestinians within and between the West Bank and Gaza as well as facilitate imports into and exports out of Palestine. The implementation of the 2005 Agreement on Movement and Access would be a good starting point. It should also avoid all measures of collective punishment as it is currently implementing in Gaza. These measures are not only contrary to basic ethics and international law, but they also worsen Israel’s own security prospects, its standing in the international community and the chances of the peace process as a whole. On the contrary, Israel should support the work of the PA and avoid all actions which undermine its legitimacy in front of the Palestinian population.

For the PA – we recommend that, in every institution-building and policy choice made by the PA, the question of whether it furthers or hinders economic and institutional autonomy from Israel should be posed. We also encourage the PA to proceed with the implementation of its PRDP and its established priorities, including the improvement of governance and security, as its ability to deliver on its objectives will critically affect its legitimacy in the eyes of the Palestinian population. Our recommendations are focused on the area of building economic autonomy. This issue is particularly relevant in the following areas:

Consider Establishment of a Free Trade Area. As has been pointed out by several studies beforehand, the possibility of turning the current customs union with Israel into a free trade area should be considered.¹¹⁸ This would enhance the economic policy autonomy of the PA by returning to it the capacity to make trade policy and set external tariffs. We believe that, as has also been pointed out by these studies, the trade regime chosen should be an appropriate one for a small open economy. It should also explore closer association with neighbouring countries and, in particular, Jordan and Egypt, as well as the maintenance of the FTA with the EU and the US.

Establish Economic Borders and Collect own Tariff and Trade Taxes. We recommend that the PA start collecting its own tariff and tax revenues on imports. This would end the current dependence of the PA on receiving “clearance revenues” from Israel. Under a new arrangement, the PA would collect its own tariff revenues and VAT and excise taxes on imports. This collection could be carried out by the Customs Department of the Ministry of Finance of the PA or, if it were to be considered more politically or technically expedient, by a contracted international firm. The establishment of “economic borders” through points of collection between Israel and Palestine should in no way be viewed as impinging on the future borders of the Palestinian State.¹¹⁹

Increase Energy Autonomy from Israel. The PA’s letter of energy sector policy of 1997 expresses concern over the current over-dependence on Israel for electricity supply and establishes the need to take into account “strategic national interests” in determining sector policy. The importance of greater energy autonomy is highlighted by the current energy crisis in Gaza as well as by the energy shortage in Israel.¹²⁰ Some critical decisions are currently pending in the energy sector which should be guided by the principle of building energy autonomy (especially from Israel):

- **Own energy supply should urgently be enhanced.** To this effect, the Gaza Power Plant’s (GPP) conversion from gasoil to gas should be undertaken soonest. This conversion, as has been pointed out by the World Bank’s 2007

¹¹⁸ See, for instance, World Bank (2003) and Arnon and Bamy (2007, pp. 188-212).

¹¹⁹ The establishment of economic borders and commencement of own collections has also been recommended by the Aix Group and by a number of World Bank reports.

¹²⁰ “Israel [...] is facing a shortage of production that will last at least up to the target year of 2020. Therefore, one can expect that Israel will be reluctant to increase exports to Palestine.” Arnon and Bamy (2007, p. 174).

energy sector review, would allow for a significant expansion in electricity production as well as a dramatic reduction in electricity costs (to roughly 20% of their current cost).¹²¹

- **The Gaza Marine Field gas project should be developed in accordance with the principles of enhancing energy security.** In particular, the option of exporting all the gas to Ashkelon in Israel for transformation into electricity and buying back a portion into Palestine does not seem wise given the current energy crisis in Gaza and potential future repeats of an economic blockade by Israel. On the contrary, policies which would enhance energy security and diminish dependence on Israel should be considered, including: a) exploitation of Gaza Marine Field gas for use by the GPP in Gaza and potential export to Egypt and Israel; b) transit considerations – if possible and in order to improve physical security, a dedicated system of delivery should be avoided as it may be more vulnerable to selective shutdown; on the contrary, the possibility of mixing Gaza Marine gas with gas from the Yam Thetis field, or with gas exported from Egypt in order to diminish the risk of selective shutdown should be explored; moreover, if gas from Gaza Marine Field were landed directly in Gaza, rather than transiting through Israel, this would increase supply security to Gaza; c) market power – diversity of buyers should be considered and monopsony situations, in particular from Israel, should be avoided.
- **Enhancing energy supply from Egypt and Jordan.** The possibility of importing gas from Egypt (via El Arish) to increase electricity production at GPP until the Gaza Marine Field gas becomes available in 2011 should be explored as should the expansion of electricity supply from Jordan to the West Bank (by extending the current supply arrangements from Jordan to Jericho through JEDCO to other parts of the West Bank) and, hence, diminishing reliance on the Israel Electricity Company (IEC).

Build independent infrastructure. The PA should forcefully pursue and seek international support for the urgent need of building of its own port and airport/s. If necessary, it could ask for support from third parties to operate security systems at such locations so that the security requirements of both the PA and Israel could be fulfilled. At the same time, it should make clear to donors that projects for joint infrastructure with

¹²¹ See World Bank (2007). *West Bank and Gaza Energy Sector Report*. May 2007: Box 2.

Israel, such as the recent proposal to build a joint airport in Netanya are not feasible or desirable in the short to medium-run given the current occupation and conflict situation. The likelihood of their being implemented is very small and, even if they were, the access to such infrastructure by Palestinians would continue to depend wholly on Israel, aggravating Palestinian dependence and extending it to the area of critical infrastructure.

For donors – the donor community should encourage Palestinian economic autonomy, support PRDP implementation, hold the PA accountable, and pressure Israel to reduce obstacles to movement and access in Palestine lest all its efforts and those of the PA be in vain. In particular, the donor community should weigh each area of support to the PA with criteria of economic and institutional autonomy from Israel in mind and aim to encourage Palestinians to build on own resources, develop economic ties with neighbours (especially Jordan and Egypt) and increase relations with the rest of the world rather than aggravating dependence on Israel. Donor recommendations of joint infrastructure and joint industrial zones, as mentioned above, are not feasible in the short-to-medium term and only aggravate Palestinian dependence on Israel. On the contrary, the donor community should support joint ventures between Palestinian firms and companies from their own countries. In particular, donors should support any activities that promise diversification in Palestinian economic relations and prospects for learning-by-doing and increasing market access for Palestinian entrepreneurs. Regarding infrastructure, donors should support the building of Palestine's own port and airports and contribute in whichever way they can to ensure their financing and security arrangements.

For the Arab world – the Arab League should urgently implement its unanimous decision to allow tariff-free access to Palestinian products into its markets, explore opportunities for joint business ventures with Palestinian firms. Moreover, oil-rich countries should consider the possibility of providing the Palestinian population with subsidised oil which could substitute for the current Israeli petroleum monopoly provision to Palestine. Egypt and Jordan should consider all areas in which they can find win-win situations for economic cooperation with Palestine. For instance, the increased supply of electricity exports to the West Bank (by Jordan) and Gaza (by Egypt) should seriously be examined. In particular, the Egyptian government could helpfully reconsider the proposal by private Egyptian businessmen to build a gas-powered electricity plant in Sinai to increase electricity exports to Gaza.

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Reappraising the World Bank CGE Model on Palestine: Macroeconomic and Financial Issues

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Abstract: Based on a close scrutiny of national accounting and financial sector statistics, this paper suggests a critical re-examination of the causality structure underlying the World Bank CGE model for Palestine, and argues that a post-Keynesian stance would be more suitable for the Palestinian economic context. In particular, it suggests the need to: (i) explicitly account for the financial sector; (ii) replace the counterfactual assumptions on the government's fiscal conduct; (iii) interpret the balance of payment as the law of motion for net foreign assets, rather than as an exogenous constraint; and (iv) account for precautionary savings and effective demand mechanisms.

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1. Introduction

Together with a series of econometric studies by UNCTAD, the World Bank analyses based on CGE modelling are among the few works of policy simulation for the post-1994 Palestinian economy.¹ As such, the World Bank CGE model remains a key reference for quantifying potential gains and losses from alternative policy scenarios in Palestine, be it in its static or dynamic version (see Astrup and Dessus 2001 and 2005 respectively). However, after nearly a decade since the development of the model, the need for a critical re-appraisal of that work has emerged with clarity for at least three sets of reasons. Firstly, some concerns have arisen with regard to the theoretical underpinnings of the approach utilised by Astrup and Dessus. Secondly, it would be useful to update analysis in the light of the new economic and political context prevailing in both Palestine and Israel, particularly taking into account the on-going economic divergence between the West Bank and Gaza Strip.² Thirdly, a renewed effort on simulation exercises is all the more relevant in the actual historical phase, when discussions about an “economic peace” between Palestine and Israel reverberate in the political debate.

It is worth specifying at the outset that most of the theoretical limitations mentioned above actually apply not just to the model developed by Astrup and Dessus, but more fundamentally to the widely-used neoclassical CGE framework, epitomised by the LINKAGE model of the World Bank (van der Mensbrugghe 2005), of which the work on Palestine is ultimately an application. A detailed critique of the neoclassical approach to CGE modelling is, however, beyond the scope of this paper, and in this respect the reader is referred to other contributions (see Taylor and von Armin 2006 and 2007).

The specific aim of this article is to show how the exceptional features of the Palestinian economy make the theoretical underpinnings of the standard neoclassical CGE models even more delicate and potentially misleading. In particular, even sketchy

¹ In a nutshell, UNCTAD (2006 and 2009) apply Seemingly Unrelated Regression analysis to a multisectoral demand-led model à la Klein, using the information extrapolated from time series data to subsequently simulate changes in closure, macroeconomic, trade and labour policies. Clearly, such an econometric approach to simulation differs widely from a CGE-based scenario analysis, in which the researcher calibrates a system of equations – defined a priori – based on the economy under discussion, and uses the results for simulation purposes. Interestingly, apart from wide differences in the results obtained, both approaches agree on one fundamental point: the current form of economic integration with Israel entails a sizeable burden for the welfare of the Palestinian people.

² Among the crucial events shaking the Palestinian economic structure in recent years one should certainly mention the renewed tensions following Hamas’ victory in the 2006 elections, the embargo subsequently imposed on Gaza by the Israeli army, and finally the Operation Cast Lead.

analyses of the macroeconomic outlook and of the evolution of the financial system are sufficient to cast doubts on the "fit" of the World Bank conceptual framework to the specificities of the Palestinian context. In addition, the present article argues that a post-keynesian approach to the macroeconomic constraints imposed on the CGE model would be more appropriate to rationalize available evidence, especially with reference to the "currency issue" and the underlying approach to the balance of payments.

In line with the above reasoning, the paper is organised into 6 sections. After this Introduction, section 2 summarizes the basic features of the conceptual framework underlying the World Bank CGE model and focuses on the structure of causality assumed by the authors, as well as on their approach to the balance of payment adjustments. Sections 3 and 4 are devoted to a brief analysis of the Palestinian macroeconomic outlook, including the long-standing "currency issue", and a review of the fundamental characteristics of the financial sector. The core of the paper, section 5, highlights the crucial weaknesses of the neoclassical approach used by Astrup and Dessus, and suggests a post-keynesian alternative which appears more relevant in light of the economic situation prevailing in the West Bank and Gaza. Finally, section 6 summarizes the arguments of this paper and concludes.

2. The causality structure in the World Bank CGE model for Palestine

To better clarify our argument let us start by briefly recalling the main features of the World Bank CGE model for Palestine. In doing so, we pay attention to the underlying theoretical approach, meaning the causal structure of the system of equations and the closure rules applied by the authors, but we leave aside the technical aspects related to the mathematical formalisation. It is worth stressing that all the considerations developed here refer indistinctively to the static and/or dynamic version of the World Bank model, since they address the common set of theoretical assumptions underlying the equilibrium allocation in *each* single period. On the contrary, what conceptually distinguishes the dynamic model from its static variant is relevant *along* the sequential

dynamic path but does not alter the static allocation process, as implicitly acknowledged by the same authors.³

Starting with some general observations, Astrup and Dessus admittedly confine their analysis to the real sector of the Palestinian economy, thus by-passing the obstacles posed by the limited availability of data concerning financial variables. From a neoclassical supply-driven perspective, this choice entails only minor costs in terms of explanatory power and bears no major consequence on the theoretical soundness of the simulation exercise. Except for the possible presence of informational failures, capital markets optimally allocate all savings (no matter what their origin) across prospective investors, who in turn fully spend them. Hence, in the neoclassical world, finance has no effect whatsoever on the level of activity – assumed at full employment – nor on the composition of output, which instantaneously adjusts to the changes in relative prices in order to reach a new optimum. Besides, the size of the financial sector can be determined as a residual from the consumer's utility maximisation problem.⁴

Coming to the modelling of international trade, the authors utilize the Armington-CET approach to formalize the response of intra-industry trade flows to relative price movements, under the assumption that domestic and foreign varieties of each good are imperfectly substitutable (Armington 1969). In plain words, the model works as follows. On the demand side, agents' utility maximisation involves a two-step problem: firstly, they decide the overall demand level for each good in terms of a fictitious CES aggregator, the "Armington bundle"; secondly, they subdivide this amount into demand for the domestic and foreign varieties of each product, taking relative prices into consideration. Similarly for the production side, firms maximize their profits ensuring the full-employment of productive inputs, and then utilize a CET function to earmark domestic output for national or for foreign markets, taking into account the corresponding price levels in the different destinations. Here again, the composition of domestic output

³ In the appendix to their 2005 article, Astrup and Dessus emphasize that, apart from the recursive nature, the distinguishing features of their dynamic model lie in postulating that: (i) there is "a positive relationship between trade openness and productive investment"; (ii) labor supply in Palestine "depends positively on the degree of closures" (because of workers queuing for jobs in the Israeli segmented labor market); and (iii) "an increase in the share of tradable activities is accompanied by an increase in the total factor productivity level". It is manifest that these 3 assumptions affect the recursive dynamic path from one period to the other, but do not alter the static allocation process in each single period.

⁴ For instance, in the intertemporal set-up à la Ramsey the level of consumption represents the control variable through which the system reaches the saddle-path stable arm of optimal capital accumulation, while savings follow as a residual quantity.

and the nature of intra-industry trade smoothly adjust to the changes in relative prices, leaving the overall level of activity unchanged.

Consistently with the above reasoning, Astrup and Dessus apply four macroeconomic constraints to their model, correspondingly fixing the exogenous or pre-determined variables within their system of equations:⁵

- i. Palestinians agents are price-takers unable to affect world prices;
- ii. Government deficit and public expenditure are fixed to reflect government choices, with one of the tax rates (or a transfer from households to the central government) adjusting endogenously to reach the predetermined net government position;
- iii. Capital transfers are exogenous, causing the trade balance to be fixed at the level implied by the balance of payments identity (current account balance plus capital account balance equal to zero);
- iv. investment is savings-driven.

Of these four assumptions, the first one is nothing but the widely-used small country assumption, which asserts that the price vector for tradable goods is exogenously fixed in the international markets, and Palestinian agents take it as given. Since Palestine is a reasonably open economy (the trade openness ratio averaged 0.85 in the 1994-2007 period)⁶ and is far smaller than its principal trade partners, this hypothesis seems quite straightforward and appropriate to the context at issue.

In contrast, the remaining three constraints deserve a closer scrutiny, since they constitute the set of macro-closures that define the causal structure of the economic (and analytical) system, with respective regard to fiscal policy, to balance of payments adjustments and to capital accumulation. To begin with, the second closure appears debatable and even somewhat counterfactual in its formalisation of fiscal conduct. In contrast with the approach postulated by Astrup and Dessus, tax rates and nominal expenditures are typically determined in practice at the beginning of the fiscal year, while

⁵ See in this respect the technical appendix of Astrup and Dessus (2001).

⁶ The trade openness ratio (or trade to GDP ratio) is computed on the base of annual data provided by the PCBS, concerning GDP by expenditure at current prices.

government budget balances emerge endogenously once tax and other revenues, which in turn depend on the activity levels, have been accounted for.

With regard to the role of the Palestinian financial sector, equally delicate theoretical considerations concern the last two closures. Assumption (iii) implies interpreting the balance of payment identity as an exogenously fixed constraint on the economy's foreign exchange earnings. Thus, this analysis, by construction, cannot account for the effect of endogenously determined variations in net foreign assets. The last closure leaves the availability of saving as the only determinant of capital accumulation, in a context of full employment of production inputs. Apart from general considerations on the importance of effective demand – the prominence of involuntary unemployment in Palestine is at odds with the full employment assumption – a closure rule of this nature appears somewhat fragile in a conflict-torn context. Indeed, it implicitly denies any role for precautionary savings behaviours, i.e. for allocative decisions in the financial market that do not directly increase productive capacity, but simply transfer wealth into safer and typically liquid assets.⁷

Before we conclude this section, it is worth pointing out a rather tricky implication of the above causality structure. Since tradable prices are exogenous, and the composition of output among tradable and non-tradable goods responds to changes in the myriad of Armington and domestic prices moving against one another to attain full employment, one may expect the nominal exchange rate to explicitly bring external accounts into equilibrium. This sort of adjustment, however, is ruled out by the reduced form of the balance of payments equation, because in the World Bank model the nominal exchange rate enters as the *numéraire*. Which, at this stage, is the endogenous variable that prevents the overdetermination of the real exchange rate?⁸ Interestingly, the answer to this question lies ultimately in the second macroeconomic constraint. The “price” under discussion, which simultaneously ensures the clearing of the domestic market and the equilibrium of the balance of payments, is precisely the endogenous tax rate we referred to when discussing closure rule number (ii) (see Missaglia and Valensisi 2010).

⁷ The absence of precautionary saving behaviours may be somewhat tempered in the dynamic version of the World Bank model, where the authors introduce the presence of “unproductive capital”, unable to generate GDP growth or increase productive capacities. It should be noted, though, that interpreting “unproductive capital” as “precautionary assets” implies the paradoxical result that precautionary savings obey a deterministic trend (which depends negatively on trade openness).

⁸ Notice how closely this question relates to the reasoning by Taylor and von Armin (2007, p. 10) “... if the international trade balance is fixed exogenously there must be a vehicle for price-induced real income transfers between the regions. If there is no explicit endogenous exchange rate to effect the transfers, some domestic input price(s) must be free to vary... to permit an equilibrium to exist.”

3. The macroeconomics of Palestine: structural dynamics and the "currency issue"

Macroeconomic considerations are extremely important for a CGE modeller, as they provide valuable information as to the most "fitting" conceptual framework to address a specific simulation exercise. As such, they, rather than aprioristic judgements, should inform the choice between alternative theoretical approaches that could be applied to a CGE model. This is precisely why our re-appraisal of the World Bank CGE model devotes two whole sections to macroeconomic and financial issues.

Analysing the Palestine's current macroeconomic outlook is hardly possible without referring to the Paris Protocol, which since 1994 has constituted the legal and institutional backbone that defines the rules of the game applicable to the domestic economy, as well as to its relationships with Israel.⁹ The asymmetric power relationship crystallised in the Paris Protocol were evident from the beginning, and are epitomised by the provisions concerning the Palestinian trade regime and currency. With regard to the former, a quasi customs union was envisaged between the parties in 1994, with Israeli duties serving as a (unilaterally fixed) "minimum basis for the Palestinian Authority".¹⁰ As for the latter, the Protocol recognised that the New Israeli Shekel (NIS) would be "one of the circulating currencies in the Areas, and legally serve as means of payment for all purposes including official transactions". This official sanctioning of the NIS as a means of exchange in the

⁹ It goes without saying that, quite apart from the Paris Protocol, the economic performances of the West Bank and Gaza have been dramatically affected by the contingent situation on the ground. Interestingly, however, some authors have argued that the Protocol itself suffered from severe structural weaknesses, which explain – at least partly – why the economic development envisaged in 1994 for Palestine failed to materialize. Along this line of reasoning Arnon and Weimblatt (2001) identify four critical flaws that have impaired the Protocol since the inception:

the uneven balance of power between Israel and Palestine was locked into the agreement, which did not design any mechanism to solve the imbalances, nor to deal with transition process;

being an inherently incomplete contract, the Protocol necessarily required a subsequent re-negotiation on several delicate issues, but no such re-negotiation was ever foreseen or attempted;

on the issue of economic borders, the agreement reflected an inefficient compromise between the "first best" option of having no economic boundaries between the two parties, and the "second best" alternative of adopting some economic frontiers along existing "security borders", while creating various well-structured crossing points;

the economic issues at stake in the agreement were actually subordinated to political purposes and considerations.

Naqib (2002) similarly argues that the various Accords failed to tackle the economic core of the problem, namely the issue of Palestinian sovereignty and the "colonial-like relationship" with the Israeli economy.

¹⁰ This quotation, like the two following ones, is taken from the Paris Protocol on Economic Relations stipulated between Israel and the P.L.O (respectively Article III, 5 a; Article IV, 10a and Article IV, 10 b), as cited in Arnon *et al.* (1997).

Territory contrasts with the generic deferral of the possible introduction of a “mutually agreed Palestinian currency”. Not surprisingly, until now this possibility has remained dead on the ground, and the resulting lack of a Palestinian national money has given rise to the so-called “currency issue”.

In the light of these considerations, it can be argued that, notwithstanding the ‘Oslo I Accord’, the economic relationship between Israel and Palestine have continued to configure a sort of “imposed and asymmetric integration” – paraphrasing Arnon *et al.* (1997). Interestingly, Naqib (2002) described a similar continuity in the Palestinian development trajectory, as did Dessus (2002, p. 6), who argued that “the implementation of the Paris Protocol did not seem to have entailed any structural break with respect to the pre-Oslo period, as far as GDP growth is concerned”. Economic growth in the West Bank and Gaza has remained extremely volatile, highly vulnerable to swings in the Israeli economy, and prone to dire shocks related to security measures such as closures, tree-uprooting, arable land-grabbing, restriction in access to water and the like. As a result, Palestinian growth has been altogether rather weak over the last 15 years, and its main driver has been the evolution of the political situation. Real GDP, according to PMA data (PMA 2009), grew at over 5% per year in the interim period between 1995 and 2000, then fell abruptly by nearly 22% in the years of the Second Intifada (2001-2002); it subsequently rebounded again at a yearly rate exceeding 11% from 2003 to 2005, and declined once more by almost 8% between 2006 and 2007, following Hamas’ electoral victory and the ensuing tensions.

The impact of this dismal record on the standards of living in Palestine is quite dramatic.¹¹ In per capita terms, GDP in 2007 was barely 60% of its 1999 value, a drop that has exacerbated the persistent problems of unemployment and widespread poverty. Fuelled by economic stagnation and a demographic surge in the form of large cohorts of new entrants to the labour market, the unemployment rate reached 29% in 2007. In 2006, income poverty incidence affected 57% of the population and 44% of the same population lived in extreme poverty. While the data mentioned here are averages for the Occupied Territory, the humanitarian situation in Gaza is far more dramatic than in the West Bank, and all economic indicators suggest that trends have diverged strongly between the two regions since 2006.

¹¹ This paragraph relies on UNCTAD (2008); on the divergence between Gaza and the West Bank refer also to IMF (2009).

In terms of structural dynamics in Palestinian Territory, the situation has been characterised by a gradually de-industrialising productive fabric, and mirrored by an unbalanced composition of effective demand, which in turn reveals the long-standing dependency on external sources of income.¹² GDP decomposition by sector of activity (*Figure 1*) shows a clear declining trend for the contributions of agriculture and manufacturing, counterbalanced by a rapid surge in the shares pertaining to the public sector and, to a lesser extent, to services.¹³ These findings are strongly consistent with previous analysis emphasising the slow growth of TFP in Palestine (Dessus 2002), and provide alarming evidence of entrenched de-industrialisation. In the literature, this vicious structural dynamic has been attributed to a number of factors, ranging from low capital accumulation to limited innovation, from Dutch Disease induced by aid and remittance windfalls to an inefficient (but gradually improving) business environment; last but not least are the huge transaction costs imposed by Israeli security measures.

The unresolved confrontation with Israel has equally affected the demand structure, as emerges clearly from *Figure 2*.¹⁴ With reference to the 1994-2007 period, at least three aspects deserve close attention in this respect. Firstly, household consumption demand alone approximately equated to total Palestinian GDP, with the situation worsening after the onset of the Second Intifada. Given national accounting identities, this implies that external sources of funding have been necessary to cover not just the entire gross capital formation, but also that part of final consumption which pertains to the public sector.

Secondly, in the period considered, gross capital formation amounted approximately to one third of Palestinian GDP, thus implying what appears to be a fairly high investment rate compared to that of other neighbouring countries. On average, however, almost two thirds of such expenditure have translated into property construction, which is indeed classified as fixed capital accumulation in national accounting systems, but is not necessarily related to the expansion of the country's productive capacity. Besides, as

¹² As adamantly emphasised by Naqib (2002), these structural trends represent the continuation of a polarising trajectory that started in the mid 70s, when Israel pursued a more or less deliberate strategy to take economic advantage of its relatively underdeveloped "occupied periphery".

¹³ The sectoral decomposition of value added depicted in Figure 1 relies on GDP series at constant 1997 prices, in order to depurate the effect of changes in relative prices over time. Notice also that the kind of structural change taking place in the Occupied Territory had immediate implications on the fiscal side, since the surge of the PNA as a crucial source of employment and GDP creation was accompanied by an unsustainable boom in current expenditures on wages and salaries (see World Bank 2007a).

¹⁴ Demand decomposition analysis was carried out on the basis of PCBS GDP series by expenditure, valued at current prices. With regard to the standard demand decomposition techniques, however, one caveat applies here: given the lack of systematic time series data for the PNA's fiscal operations, our analysis was unable to disaggregate the effect of government spending.

noticed by Ferguson (2006), a large proportion of investment demand has actually been donor-led, rather than driven by entrepreneurial or government decisions.

Thirdly, in the 1994-2007 period the import-to-GDP ratio averaged 0.71 whereas the corresponding export-to-GDP ratio was much lower at 0.14; the ensuing trade deficit represented a leakage of effective demand that systematically exceeded 50% of GDP. In view of the asymmetric economic integration discussed above, it is not surprising that the structural deficit in the Palestinian trade balance goes hand in hand with a pronounced dependency on the Israeli market, both as a source of imported goods and as an outlet for exports.¹⁵

Coming to the “currency issue”, it should be emphasised that the absence of a national currency implies a sizeable loss of seignorage revenue, and seriously constrains the functions of the Palestinian Monetary Authority – PMA (which was also established in the framework of the Paris Protocol). Clearly, its inability to print money limits the PMA’s capacity to act as lender of last resort, to manage the inter-banking discount window system, and – equally important – to set any autonomous exchange rate or to conduct any monetary policy. Of the two fundamental prices for the financial sector, the exchange rate is determined exogenously, and the interest rate is basically left to the endogenous behaviour of commercial banks; PMA intervention is limited to indirect action, in the form of revisions in reserve and capital requirements.

Additionally, the “currency issue” has led to the overlapping use of at least three currencies in Palestine: US\$, Jordanian Dinar (JD), and NIS. Interestingly, the purposes for which money is used are even more important than geographical considerations, in explaining the pattern of currency utilisation. Referring to the three traditional functions of money, the NIS is used predominantly as a *means of exchange*, in order to minimize transaction costs, which include trade restrictions imposed for “security reasons” (remember that a large proportion of Palestinian international trade occurs with Israeli intermediaries). In contrast, JD and US\$ are the preferred currencies for use as a *store of value*. Finally, in terms of money’s function as a *unit of account*, the situation in Palestine is so complicated that even the government budget is computed both in NIS and in US\$, which obviously imposes difficulties to the management of currency mismatch and

¹⁵ According to Botta (2009), from 1996 to 2006, imports from Israel amounted on average to nearly 74% of Palestinian total imports, while the share of export flows towards Israel amounted to 92% of total exports. On the other hand, Palestine did not represent a major source of imports or destination of exports for the Israeli economy in the same period: imports from Palestine amounted on average to the 0.92% of total Israeli imports, whilst exports directed towards Palestine equated to a mere 5.72% of total Israeli exports.

exchange rate risks. Notice that, in a Keynesian perspective, this differentiated pattern of currency preference is particularly crucial in a context like Palestine's, where transaction demand for NIS is predominant but precautionary savings in other currencies are also likely to be substantial, on account of extreme uncertainties prevailing at economic, social and political levels.

To our knowledge, no systematic data exist on the extent of the aforementioned currency overlap in the monetary base, although the above tendencies have already been mentioned in the literature (FEMISE 2006). Additionally to such mention, our current analysis is confirmed by data concerning credit and deposit facilities within the banking system. As shown in Table 1 and Table 2, Palestinians tend to favour NIS-denominated instruments for short-term purposes related to the management of liquidity and working capital (overdrafts and current accounts). In contrast, for long-term investment decisions they resort almost exclusively to assets and liabilities denominated in US\$ or JD, as emerges from the pattern of currency denomination of time deposits and loans. Except for the lower preference for JD and greater use of US\$ in Gaza as compared to the West Bank, geographic disaggregation adds very little to the patterns of currency use. Rather, the comparison between the two regions reveals how, since 2006, the Gaza Strip has become a marginal market for banking institutions, in terms both of saving mobilisation and of credit extension (see Table 4).

Apart from increasing costs of transaction and exchange rate risks, the overlapping use of three currencies, none of which is national, leads to striking peculiarities. In so far as most households simultaneously use several currencies on the basis of their differing economic purposes, real transactions typically translate into a whole series of endogenous adjustments in the currency composition of each agent's net wealth. Put differently, the overlapping use of various currencies creates tighter and more complex interactions between the real side of the economy and its financial counterpart, and – perhaps more importantly – between the former and the net foreign asset position. One example of such interaction is the modification of asset allocation stemming from the prolonged appreciation of NIS vis à vis US\$ and JD; an appreciation which, on the one hand, eroded the Palestinian competitiveness in foreign markets (other than Israel) and on the other reduced the value of US\$- and JD-denominated financial resources in real terms.

Palestinian multifaceted integration with the Israeli economy also bears deep and serious consequences in terms of balance of payments structure. As noted earlier, the trade balance has systematically recorded huge deficits, particularly during phases of economic boom. This in turn has resulted in wide current account deficits,

notwithstanding the massive inflow of resources in the form of income payments and current transfers. Analysing these current account imbalances, Astrup and Dessus (2005) emphasize how the large inflows of workers' remittances to Palestine may have generated appreciations in the real exchange rate, thus favouring the non-tradable sector at the expense of domestic competitiveness in tradables.¹⁶ Although the authors do not mention it explicitly, in theory a similar Dutch Disease argument may also be extended more generally to other sources of foreign exchange, most importantly international aid.¹⁷ Without denying the magnitude of both remittances and international aid, we must observe, however, that empirical evidence does not provide strong support for Dutch Disease reasoning. Because of the "currency issue", the alleged appreciation of the real exchange rate in Palestine may only have occurred via inflation differentials, since nominal exchange rates were likely to fluctuate reasonably independently of the evolution of Palestine's current account. However, scrutiny of inflation trends in Palestine and in its main trade partner, Israel, does not seem to validate this view.¹⁸ Admittedly, further evidence on relative price movements in the tradable and non-tradable sectors would be needed to properly test the Dutch disease claim. In any case, the evidence seems to suggest that other structural considerations (including the increased transaction costs due to closures) may be more relevant than relative price movements as an explanation for the low competitiveness of Palestinian tradables.

Equally interesting from the point of view of CGE modellers is the fact that besides remittances and ODA, other financial inflows have played an essential role in backing the net-imports of goods and services. If over the 1995-2007 period approximately one third of the current deficit was covered by means of capital account surpluses, the bulk of resources actually transited through the financial account, i.e. through channels that are surely distinct from those of remittances and/or ODA (see *Figure 3*). Admittedly, the years 2002 and 2007 represent marked exceptions to this general pattern, both because

¹⁶ Workers' remittances have traditionally been a very important source of funding for the Palestinian economy, totalling, according to UNCTAD GlobStat figures, a yearly average of more than half a billion US\$ between 1995 and 2005. The magnitude of such financial inflows reflects the large number of low-skilled Palestinians working in Israel as well as of the relatively well-trained ones working in other Arab countries (mainly in the Gulf). Since 2001, however, workers' remittances have fallen sharply, due primarily to the decline in Palestinian workers employed in Israel.

¹⁷ To have an idea of the sheer size of ODA flows to Palestine, note that according to WDI 2008 figures such flows amounted on average to 273 US\$ per capita in the 1994-2006 period.

¹⁸ The comparison between the GDP deflator in Palestine and Israel casts serious doubts on the existence of a Dutch disease in the former economy: between 1995 and 2006, inflation reached approximately 5% per year in both countries, but, if anything, it was slightly higher in Israel than in the West Bank and Gaza (see WDI 2008).

the Palestinian economy was suffering from particularly severe conditions and, simultaneously, because aid flows reached historical peaks.¹⁹

It should be clear that these considerations are not intended to deny the prominence of remittances or international aid in Palestine’s external balance. Rather, they caution against overemphasis of the role of such flows at the expense of overlooking other determinants of capital flows, which are more strongly related to the “endogenous” working of the financial sector. In order to fully grasp this point, it is instructive to analyse the financial account at a deeper level of disaggregation, one at which it is possible to discriminate between *net foreign direct investment*, *net portfolio investment* and the residual class denominated *net other investment*. As shown quite clearly in **Figure 4**, the former two elements were very volatile and actually represented net outflows of capital for most of the period considered. The only years in which the combined balance of FDI and portfolio investments was positive for Palestine were 2004 and 2005, the so-called “rebound” from the Second Intifada. What is more striking, though, is the magnitude of capital inflows systematically flowing into Palestine in the form of net other investments, i.e. through instruments such as “trade credits, loans, currency and deposits (both transferable and other), and other assets and liabilities (for example, miscellaneous accounts receivable and payable)”.²⁰ In this respect, Table 3 suggests that about one third of external fundings in the balance of payments came from the liquidation of foreign assets belonging to residents and, to a much lesser degree, from the increase in their liabilities towards the rest of the world. Given the lack of data concerning the net foreign asset position of Palestine’s economy, it is impossible to completely validate our argument. Nonetheless, the available evidence seems sufficient to argue that portfolio choices by Palestinian agents should be included among the main drivers of capital inflows, and the main sources of funds with which to balance the external deficit.

¹⁹ The year 2002 appears as a clear outlier due to the consequences of the Second Intifada: while Palestine suffered a generalised economic crisis with ensuing shrinkage in the trade deficit, it also received an unprecedented amount in ODA (over 1.5 billion US\$). Moreover, since aid flows were mainly for emergency purposes (showing in the balance of payment as current transfers rather than as capital ones) the resulting current deficit plummeted to less than 0.5 billion US\$. Similarly, during 2007 aid flows reached their highest peak at 1.8 billion US\$, causing the current deficit to contract sharply thanks to over 2 billion US\$ of current transfers. Simultaneously, Palestinian GDP was basically stagnating, with West Bank witnessing a very modest growth in GDP but Gaza being strangled by the Israeli siege.

²⁰ The quotation is taken from the IMF Balance of Payment Manual (IMF 1993, p. 95 and 413).

4. The financial sector in Palestine

Analysis of the Palestinian financial sector is a particularly difficult task, owing not only to the complex specificities of the context, but also to the sometimes insurmountable constraints posed by the lack of systematic and reliable data. In spite of this, even a sketchy examination of the available evidence allows us to draw some insights into the role finance plays within the productive system. As we shall see later on, such considerations are extremely useful for shedding light on the inherent limitations of the World Bank CGE framework, and may indeed suggest alternative causality structures that are more attuned to the Palestinian situation.

Palestine's tormented history has deeply affected the financial system, as it has all other spheres of the economy, and still continues to bear deep consequences for its evolution. The year 1967, in particular, constituted a long-lasting caesura for the incumbent development of financial intermediation. After the occupation, only Israeli banks were allowed to operate in the Palestinian Territory, while other existing commercial banks were closed and their accounts frozen. This event left most financial intermediation in the hands of informal actors, such as money-lenders and the like, thus seriously limiting the penetration of formal credit and financial services. The picture gradually began to change during the Eighties, when first the Bank of Palestine and later the Cairo-Amman Bank were permitted to re-open their branches. It was not until 1994, however, that Palestine witnessed a genuine evolution of the financial system, with the entry of several new banking and insurance institutions, and with the establishment, in 1997, of the Palestinian Stock Exchange (PSE).²¹

Not surprisingly given these antecedents, the development of financial intermediation in Palestine continues to be relatively limited, in spite of some clear signs of progress. As of December 2008, the formal financial sector is composed of 21 licensed banking institutions (amounting to a total of 178 branches)²², 10 licensed insurance companies, 250 registered money-changers, 11 non-banking Micro-Finance Institutions (MFIs), the PSE and related broker companies. Side by side with these formal institutions, a myriad of informal actors operate in the Palestinian market, mainly within *hawalah* networks. These informal intermediators have historically played an important role in mobilising remittances from the Palestinian Diaspora, and in providing credit

²¹ Until 1994, only one Palestinian insurance company, established in 1975, was operating.

²² Among banking institutions, 11 are foreign (8 Jordanian, 2 Egyptian, plus a branch of HSBC), 3 are Islamic Banks, and the rest are domestic commercial and investment banks.

services, especially for micro and small enterprises. However, it is hardly possible to include these actors in our analysis, given the lack of data on the size and characteristics of their business.

In terms of resource mobilisation, the banking sector dominates the Palestinian financial system with a consolidated asset value in excess of US\$ 7.4 bln. as of December 2008; this compares with total insurance company assets of US\$ 0.2 bln., and with a PSE market capitalisation of US\$ 2.5 bln.²³ Flip side logic dictates that the overriding importance of banks is mirrored by the relatively weak performance of non-banking intermediators. Despite some encouraging developments, the insurance business remains mainly concentrated on market segments with modest growth prospects, such as motor vehicle insurance (which is obligatory in the West Bank and Gaza) and health-related products. MFIs, in contrast, have a very wide potential market and show resilience to macroeconomic fluctuations, but they remain flimsy in terms of deposit mobilisation, and depend excessively on grants from international donors. Finally, the PSE is characterised by extreme volatility and still represents a thin market for domestic shares, with 5 of the 35 listed companies accounting for the vast majority of the value of traded shares. Moreover, the PSE provides neither bond issues, nor an OTC market. Despite the systemic limitations, businessmen, including the Diaspora community,²⁴ have invested considerable resources in the Palestinian financial market; that said, the market continues to suffer greatly from the frailty of institutional investors. Insurance companies still maintain a cautious attitude towards domestic securities, investment funds are completely absent, and the single Pension Fund operating in Palestine only covers civil servants, public employees and security personnel.

Well-established indicators of financial depth confirm the rather mixed performance of the Palestinian financial system, and specifically worrying weaknesses as regards credit extension. According to WDI 2008, domestic credit to the private sector in 2006 stood as low as 8% of GDP in Palestine, compared to 97% in Jordan, 77% in Lebanon and 55% in Egypt.²⁵ (Notice, though, that this rather dismal figure has nearly doubled

²³ The data on consolidated assets of the banking sector are drawn from PMA website (June 2009), while figures on insurance companies assets and PSE capitalisation are taken from World Bank (2008a).

²⁴ In April 2008 foreign investors, mainly Palestinian themselves, owned 45% of the shares listed in the PSE, according to World Bank (2008a).

²⁵ In contrast with the rest of the paper, where we used PCBS and PMA data as much as possible, here we have used WDI figures to ensure closer comparability across countries. For the sake of comparison, Sabri (2008) contends that, averaging among all Arab States, the ratio between credit to privates and GNP (*cont.*)

since 1998, in spite of the economic strains Palestine has undergone in the meantime.) The relative shallowness of the financial sector is further confirmed by the modest level of monetisation of the economy (M2-to-GDP ratio) and, perhaps more importantly, by the relatively low liquid liabilities-to-GDP ratio: as of end 2006, the M3 represented 21% of GDP in Palestine, 97% in Egypt, 139% in Jordan and 234% in Lebanon (WDI 2008).²⁶ In terms of saving mobilisation, in contrast, the Palestinian financial system has performed much better, even in comparison with other countries in the region. After a prolonged period of growth, total bank deposits in 2007 exceeded GDP (Table 5), confirming the tendency of the deposits-to-GDP ratio to exceed that of other Arab countries except Lebanon and Jordan (where it respectively reached 220% and 123% in 2005, as argued in Sabri 2008).²⁷

Given this general premise on the structural features of the Palestinian financial system, let us concentrate on the performance of the banking sector. In the context of this paper, the focus on banking institutions is dictated by two sets of reasons: firstly, banks are the principal financial actor in Palestine, and they intermediate the overwhelming majority of funds; secondly, the banking sector allows a deeper and more instructive analysis thanks to their lengthier time series, wider data coverage and greater reliability. Generally speaking, the banking system has managed to preserve a very sound financial structure in the face of an extremely volatile economic situation. Following the requirements of the PMA, banks have gradually increased their allowances for non-performing loans and their capital-to-asset ratio, to cope with the recent deterioration in loan portfolio quality (see Table 5). Moreover, the sector has gained strong public confidence, which manifested itself in rising deposit amounts throughout most of the last decade, regardless of the absence of explicit deposit guarantee schemes. Rather than deriving from financial management, the main vulnerabilities of the Palestinian banking system are related to their structural features and to the unresolved political situation. On the one hand, the use of multiple foreign currencies exposes banks operating in Palestine to substantial exchange rate risks, especially in view of the mismatch between the currency composition of credits and deposits (see Table 1 and Table 2). Secondly, the

amounted to 39% at the end of 2005. Notice, however, that neither Sabri's nor the WDI figures are perfectly comparable with those derived from PMA data in Table 5, because of different classification standards.

²⁶ Over the 2000-2006 period, the average M3-to-GDP ratio stood at 22% in Palestine, compared to 125% in Jordan, 97% in Egypt and 214% in Lebanon (WDI 2008). It should be noted, however, that the lack of a national currency in Palestine may bias these international comparisons, especially in so far as they are based on money aggregates.

²⁷ According to the same source, in 2005 the average deposit to GDP ratio among Arab States reached 68%.

Palestinian banking sector depends heavily, from an operational point of view, on the Israeli one, especially for its operations in NIS.²⁸

Apart from structural vulnerabilities, the main flaw of the Palestinian banking system, from the macroeconomic point of view, is that the expansion in terms of saving mobilisation has translated only to a limited extent into a greater supply of credit. Since the year 2000, credit extended has remained, on average, as low as 27% of banks' total assets – around one third of customers' deposits – while the absolute value of outstanding credit has actually decreased by nearly 200 million US\$ since 2006. Furthermore, interest rate spreads remain relatively large, guaranteeing profitable margins to the lenders, but at the same time discouraging potential borrowers. Rather than lending funds domestically, banks in West Bank and Gaza have predominantly engaged in net foreign asset accumulation, which accounted for nearly half of total banks' assets in the 2000-2009 period (see Table 5). Interestingly, the evidence shows that the main channel through which foreign assets are acquired is neither portfolio investment nor direct loans to non-resident clients, but rather resource transfers to banks located abroad. This statement holds particularly true for Jordanian banks, which dominate the Palestinian market with 65% of total deposits, but extend a mere 36% of loans (World Bank 2008a), and prefer to deposit the bulk of their funds in their domestically located subsidiaries.

Private borrowers, who on average receive more than 70% of total credit, have obviously borne the brunt of credit undersupply. Moreover, during the period here considered, nearly half of the credit extended consisted of short-term instruments, such as bank overdrafts and bills discounted.²⁹ These facilities are typically generated by liquidity needs for financing working capital, but they are not conducive to long-term investment and development of productive capacity. Similar considerations are confirmed by the distribution of credit among economic activities (Table 6): between 2000 and 2007, aggregated agriculture and industry received a meagre 10% of total credits, while construction accounted for another 11%. In contrast, trade and other services, which typically require lower fixed capital, and enjoy faster turnover and shorter pay-back periods, accounted for more than 40% of total credits, with the remaining facilities going to miscellaneous economic activities and consumer credit.

²⁸ The weak operational autonomy of Palestinian banking institutions was dramatically evident throughout 2008, when Israel imposed tight restrictions on the entry of cash into the Gaza Strip, which impeded local banks' ability to accommodate customers' cash demands. Liquidity shortages soon became so severe that not even the PA was able to make salary payments in Gaza. See World Bank (2008a) and IMF (2009).

²⁹ It is encouraging to observe that the weight of loans in total credit facilities has actually been increasing over the years; however, it continues to hover around 60% of total facilities extended.

Chronic under-provision of long-term loans and access to credit are somewhat controversial topics in Palestine. On the one hand, a growing strand of literature blames long-term credit undersupply on market imperfections. Factors like pervasive political and economic instability, high incidence of poverty and unemployment, or inefficient regulatory and institutional frameworks for taking and enforcing collateral,³⁰ call for extremely cautious lending policies. Hence, the argument goes, it is absolutely plausible that large segments of the population be credit-rationed, as they are unable to provide the collateral required by the banks, which is estimated to be as high as 158% of the value of the loan (World Bank 2008a). On the other hand, however, recent surveys on entrepreneurs of the formal sector reveal that credit constraints are not perceived as a major hindrance to business. Rather, managers tend to refrain from undertaking long-term investment projects due to high risk and low economic growth, and consequently they express a low demand for credit. To quote the World Bank (2007b: 23) Investment Climate Assessment, “[t]he fact that very few businesses have loans reflects not the lack of available funds or a weak financial system, but rather the lack of investment opportunities for Palestinian enterprises”.

To reconcile these findings and square the analysis of the financial market with the broader picture of Palestine’s economy, it is useful to go back to the macroeconomic considerations developed earlier. Long-lasting instability and economic strains have undoubtedly narrowed down profitable investment opportunities for all potential borrowers, both bankable and non-bankable. This element in turn seems a very plausible explanation of why the liquidity managed by the financial system translates more often into safe foreign assets than into very risky domestic credit. True enough, credit rationing can be expected to affect the less wealthy at least during favourable conjunctures, i.e. when liquidity constraints may become effectively binding and hinder their (otherwise justifiable) investment plans. On the whole, however, chronic macroeconomic imbalances, growth stagnation and extreme instability seem to be much more relevant than credit market imperfections in explaining the languishing dynamics of credit to the private sector, the widespread prevalence of precautionary saving behaviours, and, ultimately, the slow accumulation of productive capital.

³⁰ Concerning the institutional weaknesses hampering the provision of collaterals by potential borrowers, it is worth mentioning the low coverage of land registration and the lack of moveable collateral registration (in this regard, see Hamed 2004 and World Bank 2008a). Among the obstacles to collateral enforcement, the most notable are the length of the related legal procedures (World Bank 2008b) and the widespread resistance against the eviction of owners from collateralised real-estate properties.

5. Some alternative proposals

The present section constitutes the real core of this paper, where we show how the theoretical limitations underlying the neoclassical approach to CGE modelling become even riskier in the case of Palestine, and ultimately appear inadequate to explain the evolution of its macroeconomic and financial outlook. Furthermore, we suggest a set of post-keynesian macro-closures, as a viable alternative to the neoclassical stance of Astrup and Dessus, in order to better account for the economic situation described previously.

One first general comment concerns the decision to limit the analysis to the real side of the Palestinian economy. Though this choice is common practice in CGE modelling, the evidence presented in sections 3 and 4 suggests that this procedure may be inappropriate for the specificities of Palestine. Indeed, neglect of the financial sphere here comes at a far higher cost in terms of theoretical soundness, because the long-standing "currency issue" creates more complex interactions between the real transactions and their financial counterparts, and – perhaps more importantly – between the former and the net foreign asset position. Notably, the overlapping use of several currencies in Palestine imposes extreme caution in the interpretation of the concept of exchange rate, which Astrup and Dessus utilize as any ordinary *numéraire*. Various authors (see Naqib 1999 and FEMISE 2006) have suggested that Jordanian monetary disturbances are transmitted to the Palestinian economy mainly through the capital accounts, whereas NIS fluctuations affect primarily the current account. In so far as this argument is true, the very nature of each exchange rate movement crucially affects the evolution of the Palestinian balance of payments, and possibly the level of economic activity. The financial account and the structure of net foreign asset position then become relevant in explaining how the external balance responds to the various exchange rate shocks. On top of this, as suggested by Naqib (2002), the ability of commercial banks to transform debt maturities is likely to be hampered by multiple currency mismatches in their portfolio. This observation suggests an additional channel through which exchange rate fluctuations and financial sector performance may affect the real economy and the level of activity.

Given this premise, let us focus on the macroeconomic constraints applied by Astrup and Dessus to their CGE model, and on their implications in terms of underlying causality. On the basis of the features of the Palestinian economy, the small country assumption appears absolutely appropriate. In view of this, we suggest it be maintained in the post-keynesian CGE framework, with the assumption that international prices for both import and export are exogenously fixed in international markets.

In contrast, the second neoclassical closure rule, which concerns government conduct of fiscal policies, is much more problematic. Assuming that a tax rate adjusts endogenously to achieve a fixed government net position strikes us as an extremely conservative approach to fiscal policy, and sits at odds with normal economic practice. On this basis, two sets of factors suggest a radically different approach to Palestine's circumstances. Firstly, a domestic market for government bonds does not exist, which implies that deficit financing has resorted primarily to budget support from the international donor community.³¹ Secondly, under the terms of the Paris Protocol, a large proportion of government revenues is not directly collected by the PNA, but actually transferred to it from the Israeli authorities, subject to a whole set of exogenous political considerations. This is the case both for VAT on imported goods and for customs duties, two of the major sources of revenues for the Palestinian authorities.³² In view of these context-specific elements, we suggest that PNA revenues be considered as endogenous, and that the budget deficit be correspondingly constrained to a level determined by the exogenous vagaries of international donors. This essentially amounts to the postulation that the PNA maximizes its expenditure subject to each period's disbursement in terms of budget support. This closure rule may initially sound somewhat bizarre, but we suggest it is more closely attuned to Palestine's circumstances. To picture this, think of the period following Hamas' electoral victory in 2006: at that time, the PNA could not afford to pay public employees, because Israel did not transfer the stipulated tax revenues, and international ODA flows had simultaneously halted for political reasons. As a result, public service provision declined abruptly, and the overall level of activity fell sharply.

Our criticism of Astrup and Dessus' approach also involves their last two closure rules, which bear the deepest implications for the characterisation of the financial sector, and are indeed essential in defining macroeconomic causality. The formalisation of the balance of payments identity, intended as a mere constraint on the current account to balance the exogenously fixed inflow of capital, appears somewhat misleading in the case of Palestine. Available evidence on the evolution of the financial account contrastingly

³¹ The PNA has also financed part of its deficits by borrowing from commercial banks, by transferring exceptional profits from the Palestinian Investment Fund and by taking recourse to payment arrears; however these sources of funding have historically played a minor role vis à vis budget support. See World Bank (2007a).

³² See in this respect the chapter on "Fiscal Policy and Performance" in FEMISE (2006). Moreover, note that the PNA bears a sizeable loss of tariff revenues due to the management of indirect import. Under current practice, the tariff revenue calculated on these goods – initially attributable to Israel and only subsequently re-exported by Israeli intermediaries to the West Bank or Gaza – is entirely retained by Israeli authorities, but paid by Palestinian consumers.

suggests that the allocation of financial wealth by Palestinian agents plays an important role in determining the nature and size of capital inflows. Such interplay between portfolio choices and real variables – i.e. between the capital/financial account and the current deficit – is however overlooked by construction in the World Bank approach to the balance of payments, which implicitly interprets the whole dynamic in the net foreign asset position as deriving from exogenous elements.

A possible objection to our reasoning may stem from the enormous amount of development aid that has flowed to Palestine since the Oslo agreement. Were ODA to explain most capital inflows, then Astrup and Dessus would be correct in holding this latter component as exogenous. The point is significantly relevant given the sheer size of ODA flows directed towards Palestine (see *Figure 3*). Nevertheless, the economic history of Palestine is such that the nature of capital flows goes well beyond development assistance. Aid has certainly played a critical role in Palestine’s external balance, but section 3 shows that its importance should not be overemphasised at the expense of other financial flows that stem from endogenous portfolio choices. In view of this, a post-keynesian interpretation of the balance of payments appears more appropriate as a description of the Palestinian case than does the neoclassical closure rule applied by Astrup and Dessus. Accordingly, we suggest consideration of the balance of payment identity not as an exogenously fixed constraint on foreign exchange, but rather as the rule of accumulation of net foreign assets, in which the exchange (and interest) rates are exogenously determined.

A separate but related issue concerns the last “macroeconomic constraint” imposed on the World Bank CGE model: the neoclassical closure according to which capital accumulation is determined by savings availability, and the investment function is simply dropped. Given the characteristics of the Palestinian financial system, it seems implausible to ascribe the underutilisation of production inputs and the slow expansion of productive capacity to the limited availability of savings. Nor can the sluggishness of capital accumulation be exclusively explained by the imperfections of the credit market, which may be binding for small entrepreneurs, but only in so far as they would be otherwise willing to undertake long-term investments. Our statements are not meant to deny that prolonged periods of economic crisis, physical destruction of key infrastructures, and limited degree of financial intermediation, all tend to reduce the availability of capital in Palestine. Nor is our position intended to challenge the idea that prospective profitability – and hence the incentive for productive investment, innovation and entrepreneurship – is sharply reduced by the relatively weak outlook of the business

environment. We readily recognize that the Palestinian macroeconomic situation represents a dramatic combination of limited savings availability and low domestic willingness to undertake productive investment.

Notwithstanding supply-side concerns, though, our reading of the evidence reviewed in section 4 suggests that the lack of savings may not be the most stringent of the two aforementioned constraints. Rather, the binding factor hampering economic expansion consists in the languishing performs of productive investment, which appears to be related with the unbalanced structure of effective demand and with the gloomy prospects for entrepreneurs “animal spirits”. As a consequence of the situation on the ground, existing savings are preferentially used for real estate and precautionary purposes (including consumption buffers in emergency situations), so that translation into accumulation of productive capacity is extremely limited. A simple stylised fact epitomizes this long-standing situation: over the 1994-2007 period, gross fixed capital formation excluding buildings averaged a mere 0.13% of GDP!

Consistently with this view, Keynesian lines of reasoning – pivoting around the role of effective demand and autonomous investment functions, rather than savings availability – appear to be more promising as rationalisation of the accumulation process in Palestine, and as a way of squaring macroeconomic considerations with financial sector performance. A Keynesian causality structure would also be more attuned to the trends in the financial account of the balance of payments. The extreme uncertainties associated with long-term investment in Palestine credibly explains why savings leak in the form of negative net positions for FDI and portfolio assets, while portfolio choices based on precautionary savings deposited abroad dictate the evolution of the residual items of the financial account.

6. Conclusions

The choice of the underlying theoretical approach bears fundamental consequences for the outcomes of CGE simulation exercises; that is why it would be advisable to link the choice of a given conceptual apparatus very closely to the specific macroeconomic situation on the ground (if not even carrying out “robustness checks” under alternative macro-closures). Our re-appraisal of the World Bank CGE model for Palestine indicates that the framework applied by Astrup and Dessus does not show a “good fit” with the specificities of the Palestinian context. Above all, it overlooks by its very structure, the “currency issue”, the prominence of the financial sector and the related complications concerning the financial account of the balance of payments. Moreover, the supply-driven logic in-built in the World Bank CGE implicitly deprives precautionary savings of any relevance; a choice that raises important questions in a conflict-torn economy.

Given these intrinsic limitations of the neoclassical framework, we suggest the need to incorporate the financial sector into the analysis, and argued that a post-keynesian approach to three of the four closures applied by Astrup and Dessus may be more attuned to the evolution of the macroeconomic and financial outlook in Palestine. More specifically, our suggestions include: (i) a radically different modelling of fiscal policy, in which the government spends all its revenues consistently with Palestine’s historical experience; (ii) a post-keynesian interpretation of the balance of payments as the rule of motion of net foreign assets, rather than as a mere exogenous constraint on foreign exchange; (iii) a demand-driven causality structure, which explicitly acknowledges the central role of productive investment in the determination of levels of activity.

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Tables

Table 1: Composition of Credit Facilities by Type and Currency (% share of total credit facilities).

	Currency	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 1st Quarter	2000-2009 Period average
Loans	J.D.	10.1%	8.7%	8.6%	9.1%	8.8%	9.1%	8.5%	8.4%	5.7%	5.5%	8.3%
	NIS	0.9%	1.2%	1.8%	1.6%	2.1%	2.6%	1.3%	1.8%	2.4%	2.5%	1.8%
	US \$	26.8%	34.1%	32.7%	33.2%	32.2%	52.5%	52.6%	51.6%	52.8%	55.3%	42.4%
	Others	0.5%	0.4%	0.4%	0.3%	0.3%	0.1%	0.2%	0.3%	0.3%	0.2%	0.3%
	Subtotal	38.3%	44.4%	43.6%	44.3%	43.4%	64.4%	62.6%	62.2%	61.3%	63.5%	52.8%
Over Draft	J.D.	5.5%	5.3%	5.7%	4.2%	3.3%	3.2%	2.4%	2.8%	2.0%	1.8%	3.6%
	NIS	21.2%	17.2%	15.6%	20.9%	25.7%	14.1%	16.1%	18.3%	24.6%	23.4%	19.7%
	US \$	29.9%	30.1%	32.9%	28.5%	26.1%	17.0%	17.7%	15.3%	10.7%	10.0%	21.8%
	Others	0.2%	0.1%	0.3%	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%	0.5%	0.4%
	Subtotal	56.8%	52.7%	54.4%	54.2%	55.7%	34.8%	36.8%	36.9%	37.8%	35.7%	45.6%
Leasing	J.D.	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
	NIS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	US \$	0.0%	0.0%	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
	Others	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Subtotal	0.0%	0.0%	0.7%	0.6%	0.5%	0.6%	0.5%	0.6%	0.6%	0.6%	0.5%
Bankers Acceptances and Bills Discounted	J.D.	0.8%	0.5%	0.3%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%
	NIS	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	US \$	3.7%	2.2%	1.0%	0.6%	0.3%	0.1%	0.0%	0.3%	0.3%	0.2%	0.9%
	Others	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
	Subtotal	4.9%	2.9%	1.3%	0.9%	0.4%	0.2%	0.0%	0.3%	0.4%	0.2%	1.1%

Source: author's calculation on the base of PMA 2009

Table 2: Composition of Deposits by Type and Currency (% share of total deposits).

	Currency	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 1st Quarter	2000-2009 Period average
Current Accounts	J.D.	4.7%	4.7%	5.2%	6.2%	7.0%	7.4%	7.0%	6.2%	5.9%	6.7%	6.1%
	NIS	7.7%	7.7%	6.6%	7.6%	8.5%	11.4%	8.5%	11.4%	13.3%	13.1%	9.6%
	US \$	12.4%	10.8%	13.0%	17.2%	18.4%	16.0%	15.7%	14.4%	13.0%	14.1%	14.5%
	Others	0.3%	0.8%	1.1%	1.2%	1.9%	2.3%	2.2%	3.0%	3.5%	3.4%	2.0%
	Subtotal	25.1%	24.0%	25.9%	32.1%	35.7%	37.0%	33.4%	35.0%	35.7%	37.2%	32.1%
Saving Accounts	J.D.	7.7%	8.1%	8.1%	8.3%	9.3%	9.0%	10.8%	10.5%	9.9%	9.8%	9.2%
	NIS	1.3%	1.6%	1.8%	2.1%	2.3%	3.0%	3.2%	3.6%	4.8%	5.3%	2.9%
	US \$	4.2%	4.9%	5.7%	6.6%	7.4%	7.2%	7.9%	8.0%	7.9%	7.4%	6.7%
	Others	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.2%	0.3%	0.4%	0.3%	0.2%
	Subtotal	13.3%	14.7%	15.7%	17.0%	19.2%	19.4%	22.1%	22.3%	23.0%	22.9%	18.9%
Time Deposits	J.D.	8.2%	9.1%	9.0%	8.8%	7.8%	8.5%	7.8%	7.9%	11.3%	11.6%	9.0%
	NIS	6.3%	6.4%	4.9%	4.4%	3.6%	3.2%	2.6%	2.9%	4.0%	4.2%	4.3%
	US \$	45.6%	44.7%	43.1%	36.4%	31.5%	29.2%	31.3%	29.2%	23.6%	21.7%	33.6%
	Others	1.6%	1.1%	1.4%	1.2%	2.1%	2.7%	2.8%	2.6%	2.5%	2.4%	2.0%
	Subtotal	61.7%	61.3%	58.4%	50.8%	45.1%	43.6%	44.6%	42.7%	41.3%	39.9%	48.9%

Source: author's calculation on the base of PMA 2009

Table 3: Palestinian Balance of Payment – millions US\$ at the end of period (all data were downloaded on 8/6/2009).

	1995*	1996*	1997*	1998*	1999*	2000*	2001*	2002*	2003*	2004*	2005*	2006**	2007**
Trade Balance													
Total Services (net)	-1,908.90	-2,363.50	-2,443.20	-2,411.07	-2,617.82	-2,407.42	-1,609.09	-1,470.82	-1,896.37	-2,299.87	-2,637.95	-2,513.12	-2,600.37
Balance on Goods & Services	-116.90	-147.10	-225.30	-113.55	-45.64	-104.09	-524.46	-458.77	-302.38	-307.74	-222.12	-268.54	-406.24
Balance on Goods & Services	-2,025.80	-2,510.60	-2,668.50	-2,524.61	-2,663.46	-2,511.50	-2,193.45	-1,929.59	-2,198.75	-2,607.61	-2,860.07	-2,581.66	-3,006.61
Total net income	607.10	578.00	651.26	901.45	937.14	824.20	485.33	381.06	455.62	426.01	573.25	424.13	558.56
Balance on Gds, Serv. & Inc.	-1,418.70	-1,932.60	-2,017.24	-1,623.16	-1,726.32	-1,687.30	-1,708.22	-1,548.53	-1,743.13	-2,181.60	-2,286.82	-2,157.54	-2,448.06
Total Net Current Transfers	435.00	508.20	469.70	410.14	398.62	640.32	966.94	1,090.75	764.50	764.58	1,179.75	1,283.09	2,100.16
Current Account, n.i.e.	-983.70	-1,424.40	-1,547.54	-1,213.02	-1,327.69	-1,046.99	-741.28	-457.78	-978.63	-1,417.03	-1,107.07	-874.45	-347.90
Capital Account, n.i.e.	262.40	264.10	278.40	264.36	281.54	198.14	225.52	300.54	304.66	670.34	422.23	272.37	394.99
Direct Investment Abroad	-129.00	-141.90	-156.10	-160.11	-169.41	-213.19	-377.34	-359.69	-48.50	50.84	-8.78	-130.18	-45.43
Dir. Invest. in Rep. Econ., n.i.e.	122.60	177.20	163.00	218.15	188.63	62.01	19.18	9.44	17.97	48.90	46.54	18.59	28.30
Net Direct Investment	-6.40	35.30	6.90	58.04	19.22	-151.18	-358.16	-350.25	-30.53	99.74	37.77	-120.59	-17.13
Portfolio Investment Assets	-83.30	-67.60	-104.90	-106.64	-120.18	-113.24	-150.33	-160.87	-37.87	54.08	-11.30	-8.35	-126.54
Portfolio Investment Liab., n.i.e.	0.00	3.00	13.70	27.35	15.20	12.20	13.90	8.24	13.16	7.84	13.70	0.00	0.00
Net Portfolio Investment	-83.30	-64.60	-91.20	-79.28	-104.98	-101.04	-136.43	-152.63	-24.71	61.92	2.40	-8.35	-126.54
Other Investment Assets	611.60	1.40	932.00	560.28	620.97	1,084.09	865.35	551.56	1,020.50	495.25	804.31	796.51	63.63
Other Investment Liab., n.i.e.	35.10	95.30	88.80	104.81	201.94	58.25	-3.89	-38.12	-77.64	70.71	112.15	-1.55	-19.14
Net Other Investment	646.70	235.30	1,020.80	665.08	822.91	1,142.34	861.46	513.44	942.86	565.96	616.46	794.96	44.50
Financial Account, n.i.e.	557.00	206.00	936.50	643.84	737.15	890.12	366.87	10.57	887.62	727.62	656.63	666.01	-99.17
Net Errors and Omissions	164.30	1,175.70	490.65	251.96	273.88	49.71	132.58	161.17	-113.19	46.44	2.56	-41.62	143.37
Overall Balance	0.00	221.40	158.00	-52.87	-35.12	90.97	-16.31	14.50	100.45	27.37	-25.65	22.32	91.28
Reserves and Related Items	0.00	-221.40	-158.00	52.87	35.12	-90.97	16.31	-14.50	-100.45	-27.37	25.65	-22.32	-91.28
Total ODA Net Disbursement[§]	498.35	548.43	603.14	607.46	516.18	637.30	869.40	1,616.35	971.56	1,115.24	1,116.13	1,450.10	1,875.80
Workers' remittances (net)^{§§}	563.10	524.40	601.36	913.83	943.98	819.20	380.96	317.59	428.96	423.60	515.86	n.a.	n.a.

* Data from IFS

§ Data from OECD-DAC

** Data from PMA

§§ Data from UNCTAD GlobStat

Table 4: The “weight” of the West Bank in the Palestinian banking sector.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 1st Quarter	2000-2009 Period average
Share of West Bank Deposits in Total Deposits	71.5%	76.0%	78.1%	77.6%	75.3%	73.6%	78.2%	82.8%	84.8%	84.7%	78.2%
Share of West Bank Credit Facilities in Total Credit Facilities	60.0%	59.6%	73.5%	69.2%	63.6%	66.8%	72.5%	81.4%	90.6%	90.9%	72.8%

Source: author's calculation on the base of PMA 2009.

Table 5: Selected financial Indicators on the Banking Sector.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 1st Q.	2000-2009 Period average
Total Credit extended (mln. US\$)	1,347.00	1,220.22	957.53	1,072.30	1,429.08	1,794.13	1,910.72	1,758.49	1,720.52	1,735.81	1,494.58
Total Deposits (mln. US\$)	3,506.89	3,398.81	3,430.10	3,624.43	3,957.77	4,190.21	4,202.56	5,099.85	5,824.32	5,747.09	4,298.20
Growth Rate of the Credit Portfolio	n.a.	-9.4%	-21.5%	12.0%	33.3%	25.5%	6.5%	-8.0%	-2.2%	3.6% *	4.4%
Growth Rate of the Total Deposits	n.a.	-3.1%	0.9%	5.7%	9.2%	5.9%	0.3%	21.4%	14.2%	-6.6% *	4.3%
Credit to Privates as Share of Total Credit	69.1%	70.2%	85.4%	76.8%	71.0%	67.0%	74.7%	75.6%	69.0%	66.5%	72.52%
Credit to Privates as share of GDP	22.2%	22.0%	23.8%	21.4%	24.2%	25.9%	30.7%	28.4%	n.a.	n.a.	24.8%
Credit to Privates as share of Total Deposits	26.5%	25.2%	23.8%	22.7%	25.6%	28.7%	34.0%	26.1%	20.4%	20.1%	25.31%
Deposit to GDP ratio	83.6%	87.2%	99.9%	94.4%	94.3%	90.4%	90.4%	109.2%	n.a.	n.a.	93.7%
Total Credit to Total Assets Ratio	29.3%	27.6%	22.4%	22.7%	27.9%	32.0%	33.3%	25.2%	23.2%	23.7%	26.74%
Balances with Banks Abroad to Total Assets Ratio	46.9%	49.1%	54.4%	47.9%	45.6%	41.7%	41.9%	46.1%	44.3%	44.5%	46.24%
Net Foreign Assets to Total Assets Ratio	43.7%	46.6%	53.6%	51.2%	48.6%	44.1%	43.7%	51.2%	51.5%	47.9%	48.22%
Cash to Total Assets Ratio	3.0%	3.8%	3.8%	4.8%	4.4%	4.4%	3.0%	4.9%	4.7%	4.6%	4.13%
Capital to Total Assets Ratio	5.4%	4.7%	4.5%	4.7%	6.0%	10.2%	10.3%	10.1%	11.6%	12.0%	7.96%
Bad Debt Allowance to Total Credit Ratio **	4.5%	6.9%	10.9%	13.4%	11.3%	7.6%	8.0%	10.9%	n.a.	n.a.	9.19%
Interest rate spread - US\$ (Yearly Average)	n.a.	6.9%	5.2%	6.8%	5.8%	5.1%	4.8%	5.0%	6.7%	n.a.	5.78%
Interest rate spread - JD (Yearly Average)	n.a.	6.2%	6.7%	6.2%	6.9%	7.1%	6.4%	5.7%	7.1%	n.a.	6.52%
Interest rate spread -NIS (Yearly Average)	n.a.	13.6%	9.9%	9.4%	8.2%	11.5%	10.8%	10.2%	11.0%	n.a.	10.57%

* Growth rates are annualized.

** This series has been obtained from various issues of the Quarterly Economic and Social Monitor (nr. 3, 8, 12).

Source: author's calculation on the base of PMA 2009.

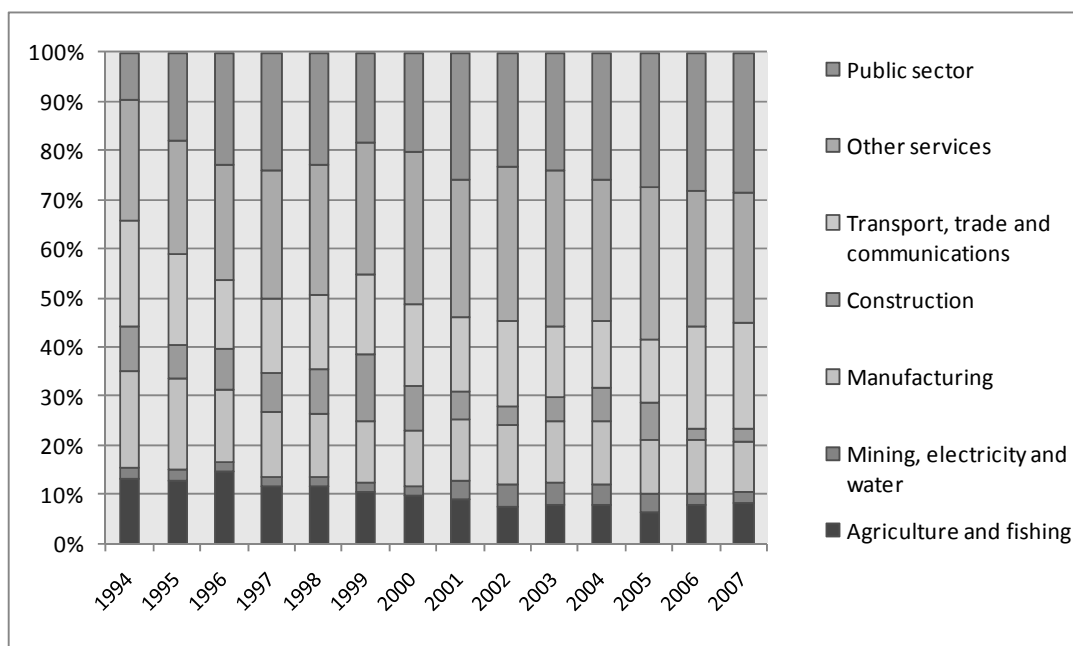
Table 6: Distribution of Credit Facilities by economic activity.

	2000	2001	2002	2003	2004	2005	2006	2007	2000-2007 Period average
Agriculture	1.6%	1.2%	1.7%	1.5%	1.3%	0.8%	0.8%	1.1%	1.2%
Industry and Mining	8.2%	9.2%	10.6%	8.6%	6.9%	5.9%	6.2%	6.8%	7.8%
Construction	9.2%	10.5%	12.2%	12.5%	10.7%	10.6%	11.0%	12.8%	11.2%
General Trade	26.6%	25.2%	27.5%	24.7%	21.0%	20.4%	19.2%	21.0%	23.2%
Transportation, Tourism and other Services	19.2%	18.5%	24.9%	23.0%	18.5%	17.0%	17.9%	23.7%	20.4%
Miscellaneous	35.3%	35.3%	23.2%	29.7%	41.7%	45.3%	45.0%	34.6%	36.3%

Source: author's calculation on the base of PMA 2009.

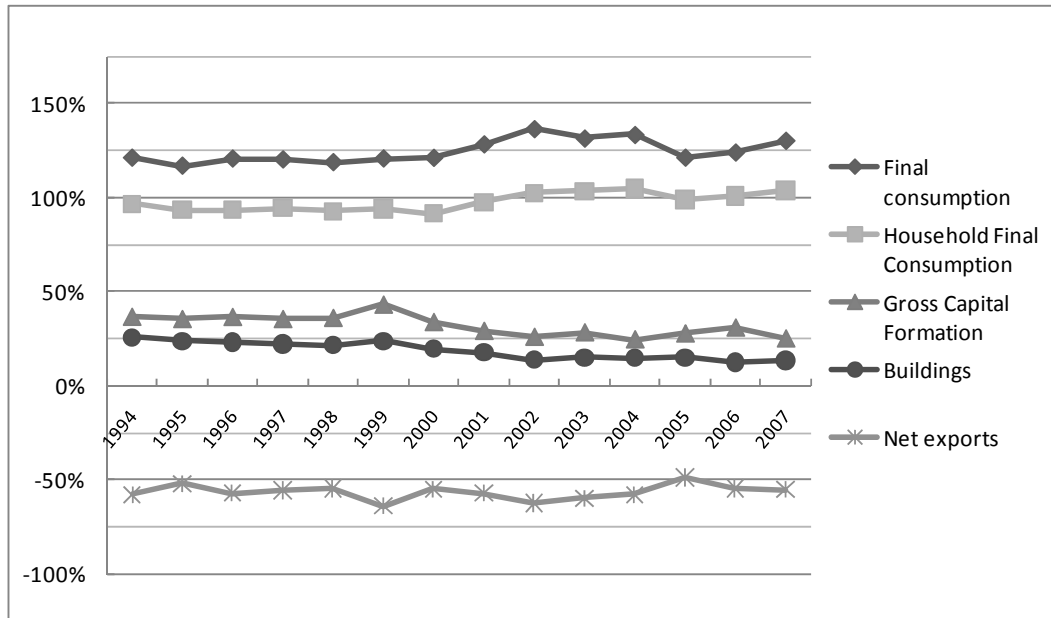
Figures

Figure 1: GDP sectoral composition at constant 1997 prices (West Bank and Gaza Strip).



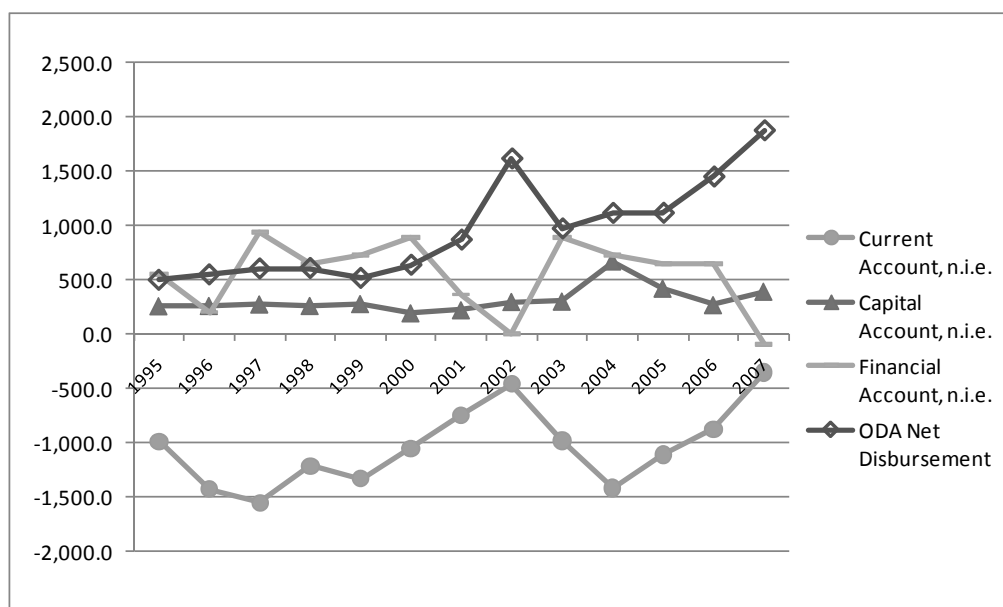
Source: author's calculation on the base of PCBS 2009.

Figure 2: Demand decomposition – GDP shares at current prices (West Bank and Gaza Strip).

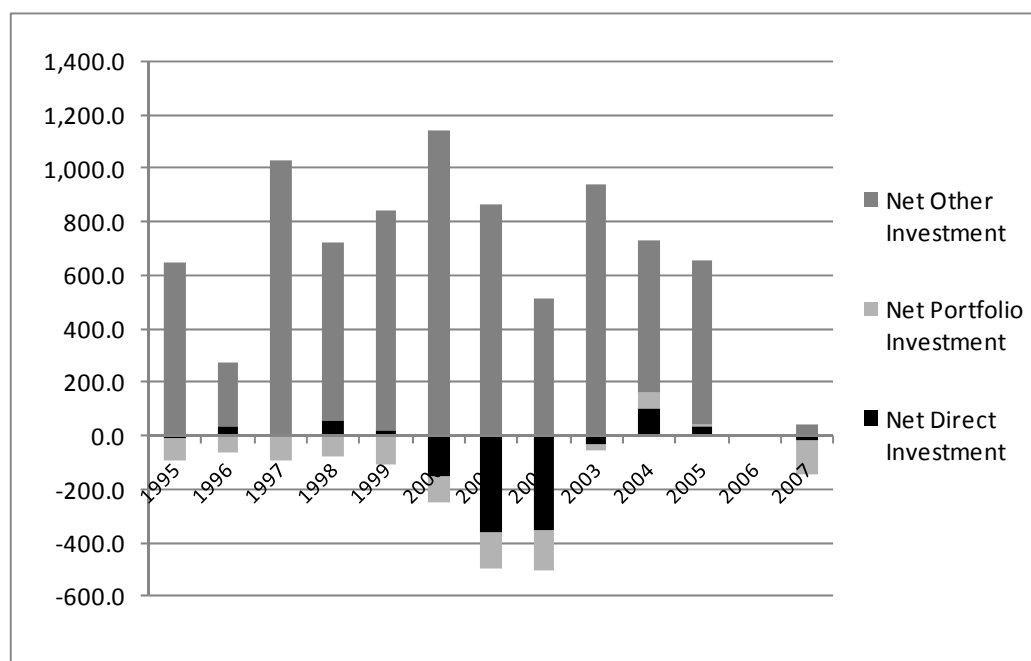


Source: author's calculation on the base of PCBS 2009.

Figure 3: Balance of Payment: main aggregates (millions US\$).



Data source: as in Table 3.

Figure 4: Disaggregation of the Financial Account (millions US\$).

Data source: as in Table 3.

Section 2: Structuralist Approach

A Trade-Focused, Post-Keynesian CGE Model for Palestine

Marco Missaglia[♦] and Giovanni Valensisi[✱]

Abstract: The purpose of this paper is twofold. First, we show that the results of the CGE model prepared by the World Bank to inform the policy debate on the different options for the future Palestinian trade regime rely crucially on unrealistic assumptions concerning government revenues. Secondly, in Part Two we propose an alternative, post-Keynesian model which (a) is likely to capture some of the essential features of the Palestinian economy and (b) does not need unrealistic closures to escape the trap of logical inconsistency. In particular, compared to the World Bank model, we propose to treat differently the (1) labour market, (2) trade flows, (3) macro causality and (4) closure of the model.

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Trade models are of tremendous political importance. By pretending to see into the future and putting numbers on the ‘welfare gains’, accruing from trade liberalization, such models have provided irresistible ammunition to negotiators, particularly those advocating rapid opening.

Taylor and von Armin (2006)

1. Introduction

With regard to the alternative options for the future Palestinian trade regime, the World Bank Computable General Equilibrium (CGE) model developed by Astrup and Dessus (2000) is to our knowledge the key reference that attempts to build theoretically-founded scenarios. The purpose of Astrup and Dessus is ultimately to assess the welfare gains associated with the creation of a Free Trade Area (FTA) with Israel, against the alternative of implementing a non-discriminatory regime in which West Bank and Gaza renounce to their preferential access to the Israeli market.

The model developed for this purpose amounts essentially to a specific application of the standard neoclassical CGE (Computable General Equilibrium) framework, which in turn constitutes the most widely-used tool for trade policy analysis. Two are the most renowned versions of what we are calling here “standard neoclassical CGE model”: that developed within the LINKAGE project by the World Bank itself (van der Mensbrugghe 2005), and the GTAP (Global Trade Analysis Project) model developed at Purdue University, Centre for Global Trade Analysis.¹

In principle, CGE models should be used to build plausible scenarios arising from diverse policy packages and/or shocks, thus contributing to evaluate their likely economic impact. For this reason, CGE models become particularly useful when economic theory per se cannot predict directly and quantify ex-ante the effects of given policies. In this respect, as convincingly shown by Taylor and von Arnim (2006; 2007), the support lent by standard neoclassical CGE models to the “Washington consensus” set of policies – fiscal discipline, trade liberalisation and moderate wages among others – is to a great extent in-built, and derives ultimately by the closures and causality assumptions adopted

¹ While the two versions differ only for minor issues, it should be noted for reference purposes that our comments here are based on the LINKAGE framework.

by the modeller. What is more “suspect”, though, is that “World Bank publications recognize that doubts about specific closures may exist and are explicit about the macro causal schemes of their own models. They just do not deign to present alternatives” (see Taylor and von Arnim 2007, p. 17). In this perspective, putting numbers and computing welfare gains becomes a purely rhetorical exercise, whereas the very nature of the economic impact of certain policies is implicitly determined by construction.

2. Part One

Analysing more closely the World Bank CGE model for Palestine (in its static version), it includes 31 production sectors and 4 trading partners for the Palestinian economy, Israel, the countries that have signed a Free Trade Agreement with Israel, the Members of the Arab League, and the rest of the world. Such a detailed description translates into an astonishing total of 2,029 equations. Even if the same authors manage to group the different equations into 40 vectorial blocks, it remains complicated, not to say impossible, to understand the logic of the results within such a huge framework.² As a preliminary step of analysis, we therefore rewrite the original model into a simpler 16-equation system, so as to make the analysis sharper and a bit more transparent. We will then illustrate the over-determination problem arising in standard neoclassical CGE models and the delicate logical issues associated with the closure adopted by Astrup and Dessus (which mimics the typical closure utilised in LINKAGE and GTAP).

2.1. A two-region prototype CGE model for Palestine

We are persuaded that the driving logic of the model by Astrup and Dessus (2001) may be summarised more sharply through a prototype with only two trading partners, Israel and the Rest of the World (RoW), one single production sector and no intermediate inputs. Indeed, the aggregation into a single composite good is legitimate in so far as all original sectors operate in a perfectly competitive setting, factors of production are perfectly mobile and they are exchanged under conditions of perfect competition.³ These

² Of course, this problem is not specific of the WB CGE model for Palestine, but of the majority of CGE models, considered by many as a sort black box.

³ In this respect, see for instance Banerjee and Duflo (2005).

are precisely the conditions assumed by all neoclassical CGE models, including by Astrup and Dessus, so that our simplification is perfectly justifiable.⁴ Likewise, the omission of intermediate inputs affects perhaps the richness of the model, but does not modify at all its intrinsic logic nor its ultimate results.

At this stage it should thus be clear, that the above simplifications are innocuous in terms of causality structure, but – as we will show in this paragraph, they allow a deeper understanding of the model by dramatically reducing the number of equations. According to the above, an aggregate production function summarizes the whole block of equations 1, 2, 3, 4, 5, 8 in Astrup and Dessus (2001). Domestic production can thus be described by a production function with the usual properties

$$T = T(L, K) \tag{1}$$

where T indicates the composite output, while L and K are labour and capital.

Besides, following the neoclassical theory of distribution, Shephard's lemma can be used to derive the demand for labour and capital, obtained by equating the value of the marginal product of each factor to the nominal wage (w) and profit rate (π) respectively. Indicating with P_T the output price, this implies

$$P_T \frac{\delta T}{\delta L} = w \tag{2}$$

$$P_T \frac{\delta T}{\delta K} = \pi \tag{3}$$

which correspond to equations number 6 and 7 in Astrup and Dessus (2001).

⁴ Notice that the above statement is valid regardless of the underlying preference structure. Assuming a Linear Expenditure System LES, simply implies that the “composition” of the aggregate good changes with the income, rather than remaining constant at all GDP levels, as would happen with homothetic preferences. In any case, in a static or recursive exercise as the CGE analysed here this fact does not affect at all our conclusions.

In this static model, in which Say’s law is implicitly assumed to hold, one can simplify the analysis even further, by avoiding the distinction between consumption and investment expenditure.⁵ In light of this, demand expenditure follows simply from the budget constraint and amounts to the total value of GDP, since households accrue both wage and profit income⁶ and will be allocated between domestic and imported good according to the “Armington assumption” discussed below. Similarly, for the case of government demand, total public expenditure is determined through an exogenous policy decision (as in the World Bank model), and allocated according to the “Armington assumption” as explained later.

Resembling closely equations 17 to 21 in Astrup and Dessus (2001), government budget balance can be defined in our prototype model by the following equation

$$t_v p(T_D - T_G) + t_m e(M_D - M_G) + eB - G = S_G \quad (4)$$

which determines government nominal savings S_G as the difference between revenues and expenditures (G). The former in our case include: (i) indirect taxes on domestic good, t_v being the tax rate and $p(T_D - T_G)$ private expenditure on domestic production; (ii) import duties levied at rate t_m (possibly including both tariffs and VAT on imports) on privately consumed import (e indicating the exchange rate); and (iii) transfers from abroad (eB in domestic currency). As for the expenditure side, government purchase both domestic and imported good (with expenditure shares being determined according to the Armington assumption discussed below), therefore

$$G = pT_G + eM_G \quad (5)$$

⁵ Indeed Astrup and Dessus themselves (see p. 28) argue that households’ savings “can be thought of as demand for a future bundle of consumer goods, and its price is the price of investment”.

⁶ The above statement can be expressed algebraically as

$$wL + K\pi = TP_T = pT_p(1 + t_v) + e(M_D - M_G)(1 + t_m)$$

in which the two terms on the right hand side represent households’ expenditure on domestic and foreign goods, including the cost for VAT (and tariffs). This equation actually corresponds to the block of households’ demand equations (number 9 to 12) in Astrup and Dessus (2001), however in our prototype model it can be dropped since it is linearly dependent on the remaining relationships.

Coming to the block of “trade equations”, a premise is due to explain our approach. Instead of sticking to the World Bank approach and using Armington/CET composite aggregates, which require nested production and demand functions, we prefer to reduce the number of equations avoiding the fictitious aggregation à la Armington/CET, while maintaining the same reasoning.⁷ As will be shown below, our strategy does not alter the logic of the model, but simply traces back the effect of imperfect substitutability (transformability) of goods by origin (destination) directly to the domestic and imported (exported) good, rather than leaving it nested in the top-level composite Armington (CET) aggregate. The first “trade equation” defines domestic sales of nationally produced goods, called T_D , as

$$T_D = T_P + T_G \quad (6)$$

which basically corresponds to equation 22 in Astrup and Dessus (2001), but for the fact that here we do not refer to demand for the Armington aggregate but only to the demand for domestically produced good.

As explained above, rather than making explicit use of the second level Armington aggregator, here we directly model import demand as a CES counterpart of the demand for domestic good. That is, the nested CES relationship linking demand for imported and domestic goods is here “collapsed” into

$$\frac{T_D}{M_D} = \left[\frac{1 - \gamma}{\gamma} \right]^{\sigma_A} \left[\frac{r(1 + t_m)}{(1 + t_v)} \right]^{\sigma_A}, \quad \sigma_A > 0 \quad (7)$$

where t_m and t_v were defined above. According to the “small country assumption” (quite reasonable in the case of Palestine) the world price of imports is taken as given and for the sake of simplicity set to unity. It follows that the price of imports is equal to the

⁷ The Armington assumption, which was first developed in 1969 (Armington 1969), is almost invariably included in the CGE models developed by the most important international economic institutions (WB, IMF, OECD, WTO, etc.). The reason of its great and lasting success is that it rationalizes a world of inter-industry trade. In a Ricardian world where domestic production and imports could be perfectly substituted to each other, each trading partner “would end up being specialised in the commodities they produce the most cheaply. Such extreme behaviour is not observed in reality” (Taylor and von Armin 2006, p. 13). Later in the paper we will discuss some of the drawbacks of the Armington assumption.

nominal exchange rate, e , multiplied by $(1+t_m)$, while the user price of domestic good is p multiplied by $(1+t_v)$. The share parameter of the implicit CES aggregative function is γ , whereas σ_A represents the elasticity of substitution between domestic and imported goods. Notice that a similar relationship could be obtained from the framework of Astrup and Dessus (2000) by dividing equation 23 by 24; further treating the Armington assumption in this simpler way allows one to avoid the determination of the dual price of the Armington bundle (equation 25 in the World Bank CGE model for Palestine).⁸

In line with the above explanation, government allocation of expenditure across domestic and imported goods follows precisely the same reasoning utilised for the households.⁹ Accordingly,

$$M_G = \frac{T_G}{\left[\frac{1-\gamma}{\gamma} \right]^{\sigma_A} \left[\frac{r(1+t_m)}{(1+t_v)} \right]^{\sigma_A}} \quad (8)$$

Symmetrically for the case of the export supply, rather than maintaining the explicit recourse to the CET, we “collapse” the whole argument into equation (9), which describes the decision of domestic producers on whether to sell their product at home or abroad, having implicitly assumed that the RoW is ready to buy whatever quantity supplied by Palestinian producers. Accordingly, the choice of the domestic producers responds to relative prices and the easiness with which domestic sales can be turned into exports (the elasticity of transformation, σ_T):

$$\frac{T_D}{T_{EX}} = \left[\frac{1-\mu}{\mu} \right]^{\sigma_T} r^{\sigma_T}, \quad \sigma_T < 0 \quad (9)$$

The share parameter of the CET aggregative function is indicated by μ , while in line with the “small country assumption” the dollar world price of exports is given and set to unity;

⁸ Notice also that considering only two trading partners in our simplified framework, we do no longer need to disaggregate import by region of origin; this spares us from considering equations 26, 27 and 28 as done instead by Astrup and Dessus.

⁹ Again, this assumption could be easily removed by introducing an agent-specific elasticity of substitution. However, this would not change the logic of the WB CGE model at all.

finally, for the sake of simplicity, export subsidies or taxes are assumed away. Once again, a similar relationship results from the framework of Astrup and Dessus by dividing equation 29 by 30. Such approach implies also that the producer price of domestic output, P_T , is the CET dual of the producer price earned in the domestic market, p , and that earned abroad, e (the nominal exchange rate). That is

$$P_T = \left[\mu^{\sigma_T} e^{1-\sigma_T} + (1 - \mu)^{\sigma_T} p^{1-\sigma_T} \right]^{\frac{1}{1-\sigma_T}} \quad (10)$$

precisely as in equation 31 of Astrup and Dessus (2001).¹⁰ To complete the block of “trade equations”, one finally needs to determine the exchange rate, similarly to what Astrup and Dessus do in their equation 34. In our prototype with a single composite good, the real exchange rate is nothing but

$$r = \frac{e}{p} \quad (11)$$

whereas in their more elaborated framework it is endogenously derived from the “plenty of Armington and domestic prices moving against one another to guarantee balanced trade” (Taylor and von Armin 2007).

As concerns the market clearing, in our prototype as in the original World Bank CGE model, factors are assumed to be fully employed (a crucial difference with respect to the structuralist approach), implying that uniform wage and rental rates prevail across sectors.¹¹ Accordingly,

$$L = L^S \quad (12)$$

$$K = K^S \quad (13)$$

¹⁰ Notice also that considering only two trading partners in our simplified framework, we do no longer need to disaggregate export by destination; this spares us from considering the counterparts of equations 32 and 33 in Astrup and Dessus.

¹¹ Indeed the two equations below correspond precisely to equations 35 and 36 in Astrup and Dessus (2001).

Equation (12) tells us that real wage fluctuations are enough to guarantee everyone has a job (although there is no distinction between Palestinian employed in the occupied territories and Palestinians employed in the settlements or in Israel).¹² Equation (13) instead implies that installed capital is fully utilised.

For what attains the macro-closures – which are really the key to understanding any CGE model and the underlying nexus of causation postulated by the model-builder – as could be expected they resemble quite closely the original ones adopted by the World Bank. First, real government savings, in terms of the domestic good, are exogenously fixed by policy decision, and by definition they are equal to

$$RGS\bar{A}V = \frac{S_G}{P} \quad (14)$$

precisely as in equation 37 of Astrup and Dessus (2001).

Secondly, the equilibrium condition in the domestic good market is assumed to hold

$$T = T_P + T_G + T_{EX} \quad (15)$$

similarly to what happened in the saving-investment equality (equation 38) in Astrup and Dessus.

Finally, as in equation 39 of Astrup and Dessus, the equilibrium of the balance of payment may be expressed as

$$M_D - T_{EX} = B \quad (16)$$

The balance of payments in foreign currency (remember that foreign prices of both imports and exports are set equal to one) is determined by the availability of foreign savings, B , a variable a small economy such as Palestine cannot affect.¹³

¹² Despite the fact that the paper by Astrup and Dessus was written in August 2000, before the outbreak of the second Intifada and the starting of the closure policy decided by the Israeli government.

¹³ A term like B usually incorporate net private capital inflows, net official development assistance and foreign reserves net change. Now, putting aside the fact that in the Palestinian case there is not a proper central bank and the very category of “foreign reserves” is ambiguous, in a prototype like this and in a framework like Palestine merging these various elements in a unique flow (B) received by the government (*cont.*)

Before discussing the key issue of the closure of the model, let us say something on its time dimension. According to the authors, “even if static, this model is therefore intended to capture long term allocative effects of different trade policies, since adjustment costs of reallocating productive factors are ignored. However, it does not incorporate the dynamic effects of trade policies, and notably their impact on GDP growth, since resources (capital, labour, and productivity) are fixed in this model. Interpretations of results are therefore to be taken with caution, since they only indicate what would be the impact of a given policy on the allocation of resources, and not on their level” (Astrup and Dessus 2000, p. 9).

With these caveats in mind, let us count equations and variables. In the prototype World Bank CGE model there are six predetermined variables: the levels of factors supply, L^S and K^S , deriving respectively on demography and past accumulation (with input utilisation postulated at full employment!); B , a policy and economic decision of agents (people and governments) in the RoW; G , a policy decision by the government; $RGSAV$: however strange, the authors take this variable as decided by the government; finally, a *numéraire* must be chosen in accordance with the Walras’s law. As in Astrup and Dessus 2000, let us take the nominal exchange rate to play this role, while recalling that any other nominal price could be chosen as *numéraire* without affecting the results. To avoid over-determination in our fourteen-equation model, one needs fourteen endogenous variables: $T, L, K, T_p, T_{EX}, T_D, M_D, r, p, P_T, w, M_G, S_G$ do typically play this role, however one endogenous is still missing. Despite this assumption comes at odds with fiscal policy praxis, Astrup and Dessus consider one of the two tax rates, either t_m or t_v , as endogenous, thus eliminating over-determination¹⁴. For the time being, let’s take t_v as endogenous, while maintaining t_m as an instrument of trade policy.

(the PNA) serves to simplify calculations without losing any generality. It may be noted that equation (16) may be given a purely real interpretation. In such a case B is a real magnitude (capital inflows expressed in units of foreign good) and, as such, may be taken as given. If instead, what is exogenously determined is the real value of foreign capital inflows $RFSAV$, then an additional equation should be included, stating that $rB = RFSAV$.

¹⁴ Quoting Astrup and Dessus (2001) p. 27, “Public receipts thus adjust endogenously to achieve the predetermined government net position. Four alternative compensating mechanisms are considered in this version of the model: a lump-sum transfer from households to the government, DT , an endogenous shift of the average VAT rate on domestic goods, an endogenous shift of the average VAT rate on imported goods, an endogenous shift of the average tariff rate”. Notice actually that this quite unrealistic closure rule is not only applied to the CGE model for Palestine; the LINKAGE model, in a sense the most official WB CGE applied to a number of developing countries, shares this feature as well (see van der Mensbrugghe 2005). The likely justification behind this choice is the well-known proposition in standard trade theory according to which a fiscal transfer (possibly a lump-sum one) from winners to losers allows everyone to gain from trade liberalisation.

2.2. Over-determination and the World Bank closure

From the previous paragraph it should be clear that in the typical Neoclassical framework of CGE the real exchange rate emerges implicitly from that vector of Armington prices, satisfying the balance of payment equilibrium subject to the exogenous capital inflow. With domestic prices determined as cost-dual under full-employment of production inputs and foreign prices assumed exogenously according to the small-country assumption, the working of the Armington/CET assumption is meant to introduce the necessary flexibility between domestic and import prices in an otherwise over-determined system (recall the nominal exchange rate is taken as *numéraire*). It is precisely the combined effect of all these price adjustments (the import and export prices for each good) that permits to reach the exogenously fixed trade balance.

As observed at page 10 of von Armin and Taylor (2007), however, "The Armington solution to the over-determination problem is only partial... if the international trade balance is fixed exogenously there must be a vehicle for price-induced real income transfers between the regions. If there is no explicit endogenous exchange rate to affect the transfers, some domestic input price(s) must be free to vary to permit an equilibrium to exist". Actually, one can even go one step further. Such over-determination problem is solved in the typical World Bank CGE model by mean of the counter-intuitive closure rule that postulates an endogenously adjusting tax rate, the endogenous adjustment of government revenues so as to meet the given budget balance ends up modifying the Armington prices hence affecting the balance of payment equation¹⁵.

In other words, not only the odd treatment of government revenues postulated in World Bank CGE models introduces biases of unknown directions in the welfare calculation (see at this regard von Armin and Taylor 2007); such counterfactual "fiscal effect" is actually indispensable to preserve the logical consistency of the whole system of equations. To see this point, let us examine the adjustment process in the balance of

¹⁵ Notice that the above statement remains valid not only in our prototype but also in the more articulated model by Astrup and Dessus, regardless of which of the "four alternative compensating mechanisms" discussed in footnote 14 is actually adopted. Considering the endogenous adjustment of the VAT rate on domestic goods (or alternatively of the VAT rate on imported goods, or again the shift of the tariff rate), by construction these movements affect the relative price(s) between domestic and foreign goods, thus altering the allocation of expenditure and/or sales do as to satisfy the trade balance. Similarly, if one considers the fourth alternative closure mentioned by Astrup and Dessus – that is the endogenous lump-sum transfer from households to the government – the implied transfer of resources indirectly modifies the composition of imports since the government demand pattern is different from the households' one; in such a case, it is such composition effect that permits to achieve the exogenous trade balance, implicitly modifying the real exchange rate.

payment equation by analysing in differential terms the subset of trade-related equations, i.e. equations (1), (7), (9) and (16). While this procedure differs from a full-fledged comparative statics – which would actually be rather tedious since the 16 equations of our prototype model are perfectly simultaneous – some algebraic manipulations on the above subset of equations are actually sufficient to explain our argument.

Remember that in the World Bank model resources are fully employed, capital inflows and the tariff rate are exogenous. Keeping these assumptions in mind let's write the differential system assuming, contrary to the World Bank, that the indirect tax rate on domestic goods, t_v , is exogenous. The four equations at issue become, in differential terms

$$\Delta T = 0 \quad (17)$$

$$\Delta T_D - \frac{T_D}{M_D} \Delta M_D = \sigma_A T_D \frac{\Delta r}{r} \quad (18)$$

$$\Delta T_D - \frac{T_D}{T_{EX}} \Delta T_{EX} = \sigma_T T_D \frac{\Delta r}{r} \quad (19)$$

$$\Delta M_D = \Delta T_{EX} \quad (20)$$

Obviously, since σ_T and σ_A have opposite signs, the LHS of (18) and (19) must have opposite signs too. Therefore, the following couple of inequalities must apply:

$$\Delta T_D < \frac{T_D}{T_D} \Delta T_D \quad (21)$$

$$\Delta T_D < \frac{T_D}{T_{EX}} \Delta T_{EX} \quad (22)$$

Using (20), inequality (21) may be written as

$$\Delta T_D > \frac{T_D}{M_D} \Delta T_{EX} \quad (23)$$

However, equations (17), (15) and (6) jointly imply that $\Delta T_D = -\Delta T_{EX}$. It follows that (22) and (23) may be expressed as

$$-\Delta T_{EX} > \frac{T_D}{M_D} \Delta T_{EX} \quad (24)$$

$$-\Delta T_{EX} > \frac{T_D}{M_{EX}} \Delta T_{EX} \quad (25)$$

Clearly, since both T_D/M_D and T_D/T_{EX} are positive, only two possibilities are given. Either ΔT_{EX} is positive, in which case (24) is impossible, or ΔT_{EX} is negative, in which case (25) is impossible. It must be concluded that, under the reasonable assumption that t_v is policy-determined, the World Bank hypothesis of full employment, CES (Armington) determination of the ratio between domestic purchases and imports, CET determination of the ratio between domestic sales and exports and exogenous real capital inflows are mutually inconsistent.

There are several reasons why one could think the World Bank CGE model on Palestine is somewhat unfit to address the issue of the future trade policy regime. Most of them are “substantial” (and we will discuss them in the following part of the article): it postulates the validity of the Say’s law and therefore aggregate demand is not given any traction, the labour market is assumed to clear without any friction (in particular, the influence exerted by the closeness of the Israeli labour market is not taken into consideration), etc. However important, these substantial reasons are to some extent debatable. This is why it is crucial to show, as we did, that the World Bank model incorporates a much less debatable weakness: the coexistence of the World Bank hypothesis of full employment, CES (Armington) determination of the ratio between domestic purchases and imports, CET determination of the ratio between domestic sales

and exports and exogenous real capital inflows cannot be defended on a purely logical ground unless an admittedly very unrealistic extra-assumption of endogenous determination of the domestic indirect tax rate is introduced.

3. Part Two

3.1. An alternative, three-region prototype CGE model for Palestine

Let us now move to the presentation of a plausible alternative to the World Bank CGE model. What we are going to present is, again, a prototype and for the sake of brevity we will call it the “MV model”. The equations of the model are listed in Appendix A. Here, rather than bothering the reader with the details, we want to illustrate those theoretical elements which make the MV model significantly different from the World Bank proposal. In doing this exercise, we will remain within the boundaries of a one-sector model. The reason is not so much the lack of appropriate data (building a macro SAM is tremendously easier than building a fully detailed, multi-sector SAM); it is rather to be found in the fact that different views on the effects of trade policies are more deeply rooted in different views concerning macro causality rather than micro stories related to the allocation of resources among the sectors of the economy.

The first feature to be emphasised is the possibly demand-driven nature of the MV model. In the World Bank model, as it is the case with any other standard neoclassical CGE model, GDP is only determined on the supply side of the economy, there is no room for any potential deficiency of aggregate demand. It must be stressed that this does not depend on the assumption of full employment – some theory of unemployment could be added to the World Bank model without affecting its supply-driven nature.¹⁶ The deep reason why aggregate demand does not have any traction in a standard neoclassical macro model is twofold. First, uncertainty (which differs from risk because the relevant probability distributions are unknown) is not taken into account, and therefore there is no reason for people to hoard money (the Keynesian theory of liquidity preference). Second, in the neoclassical world commercial banks cannot create purchasing power through their

¹⁶ Mainstream theories of unemployment – minimum wage, insider-outsider models, efficiency wages, Harris-Todaro dualistic models, etc. – explain the inability of the economy to reach full employment with some imperfection in the labour market, whereas what happens in the product market does not have anything to do with unemployment. On this issue see Missaglia (2010).

lending decisions, they just intermediate purchasing power from savers to investors.¹⁷ It follows that, again, aggregate demand cannot play any propulsive role. Now, as we stressed in Valensisi and Missaglia (2010), precautionary savings (hoarded money) play a crucial role in the Palestinian economy, where uncertainty dominates. Under-utilised capacity and massive unemployment also suggest that in Palestine GDP may be demand-driven: "As a consequence of the situation on the ground, existing savings are rather utilised for real estate building and precautionary purposes (including consumption buffers in emergency situation)" (Valensisi and Missaglia 2010, p. 16). Savings do not determine investments. One of the equation from which the demand-driven nature of the model may be easily understood is the investment function (A28), where investment demand is assumed to respond positively to the profit rate (which is especially true for an economy where credit markets are far from being perfect) and the degree of capacity utilisation (a standard accelerator effect). If, say, the parameter g_0 goes up (good mood in Keynesian "animal spirits"), then output will go up and the higher real income will generate those extra-savings needed to maintain the macro balance between savings and investment. However, in order to make the model as general as possible, one must try to incorporate the possibility that, once full utilisation of productive capacity has been reached, output cannot respond anymore to demand injections. This is exactly what we did through equation (A31): when real output V reaches its peak, V^* , the mark-up rate τ becomes endogenous. As a consequence – see equations (A1) and (A3) – demand injections translate into higher prices. In other words, the model endogenously switches (may switch) from a fix- to a flex-price regime.¹⁸ This point deserves some further explanation? What does "full utilisation of productive capacity" mean in the Palestinian economy? It may be reasonably argued that, say, Gaza's exporters of cherry tomatoes and strawberry cannot respond to an increase in demand for their products because they are completely reliant on imported fertilizers (UNDP 2010) and these flows have been stopped since the 2007 blockade. Or, again, in the Gaza Strip "the fishing industry is currently beset by shrinking access to fishing grounds... loss of equipment during

¹⁷ Schumpeter (1934, pp. 73-74) is illuminating: "[...] It is always a question, not of transforming purchasing power which already exists in someone's possession, but of the creation of new purchasing power out of nothing... The banker, therefore, is not so much primarily a middleman in the commodity 'purchasing power' as a *producer* of this commodity... He makes possible the carrying out of new combinations, authorizes people, in the name of society as it were, to form them".

¹⁸ Even in a flex-price regime, however, macro causality runs from investment to savings. Indeed, suppose again the parameter g_0 goes up. The increase in the mark-up rate will redistribute income from those who save less (workers) to those who save more and this "forced-saving" mechanism will restore (under plausible stability conditions) macro equilibrium.

Operation Cast Lead”: this implies that this industry too cannot respond to demand stimuli. We should not conclude from the above that the demand-driven nature of the MV model is to be rejected – disregarding the crucial role of precautionary savings in Palestine would be a serious mistake. Rather, there are other channels through which these conflict-determined supply bottlenecks are to be incorporated in the MV model. For instance, more/less limited access to imported intermediates may be modelled as an increase/decrease of P_f^* in equation (A2); more/less limited access to fishing grounds, as well as the host of similar cases in which the available capital stock is, so to speak, forced to be less productive than it could, may be modelled through variations in the parameter $ICOR$ (incremental capital-output ratio; the higher the $ICOR$, the lower the productivity of capital) and therefore in the value of V^* (see equation (A32)). In general – and this is an analytical point we want to make as clear as possible – the fact that conflict-related events create different kinds of supply bottlenecks does not change *per se* the demand-driven nature of an economy where precautionary savings play such an important role. Rather, it changes the threshold above which a fix-price regime switches to a flex-price regime.

Another relevant feature of the MV model is the way trade flows are modelled. On the import side, a distinction has been introduced between intermediate imports and imports of final goods. Imports of intermediates inputs (equation (A6)) are assumed to be a fixed fraction of GDP.¹⁹ As to the imports of final goods – (A7) to (A9) are the relevant equations – the basic idea is that imports from Israel and the rest of the world may be substituted to each other, at least to some extent (captured by the elasticity of substitution in equations (A7) and (A8)), whilst total imports are modelled through an *ad hoc* function ((A9)) where the parameter θ represents the elasticity of final imports to real income. The reason why we opted for this *ad hoc* import function is related to the main drawback of the other available option, the usual Armington assumption we already discussed. Indeed, in the Armington framework the import elasticity to GDP is necessarily equal to one, admittedly a too straight jacket. A similar argument may be applied to the way we treated exports – equation (A11). Again, rather than adopting the standard CET framework, we

¹⁹ Post-Keynesian scholars see technology very differently from the neoclassical ones. Without going into the details, the basic point is that according to the post-Keynesians, inputs (both primary and intermediates) cannot be substituted to each other in a static and timeless framework (as it is the case in a neoclassical model). Substitution requires time, costs, technological change and adaptation, etc. It follows that in a static model technical coefficients must be fixed: technology is a given procedure and it takes time to change such a procedure in response to whatever incentive. This can be also seen in the fixed labour coefficient appearing in equation (A4).

employed an export function which make Palestinian sales to Israel and the rest of the world dependent on the relevant real exchange rate and foreigners' demand for Palestinian products. To put it in other words: instead of assuming that the foreigners accept to buy what the Palestinians decide to sell (the CET framework), we assumed that the Palestinian accept to sell what the foreigners want to buy. It is a matter of being realistic.

What about the labour market in the MV model? Unemployment in Palestine is not due to imperfections in the labour market, but to aggregate demand deficiency. Productive capacity is underutilised (see Arnon *et al.* 1997; Botta 2010) and the problem for those who remain unemployed is not the lack of labour market flexibility, but the lack of enough goods to produce. Still, one must recognize that the Palestinian labour market is rather peculiar. Palestinian workers are given the possibility to supply their labour force either in the Palestinian Territories or, to some extent which is ultimately determined by the vagaries of the political situation, in Israel and the settlements. This possibility gives rise to a sort of arbitrage condition – equation (A5) in the MV model. (A5) equates the expected wage from getting a job in the Territories with the expected wage of being employed in Israel or the settlements. The latter is weighted through the application of a risk premium (the parameter " rp "). It is to be stressed that this arbitrage condition is not a theory of unemployment (a "wage curve", see footnote 16) – unemployment depends on demand deficiency. Rather, (A5) is a theory of wage determination. Straightforward comparative statics show that the implications of such a theory are very reasonable in the Palestinian context: Palestinian wages increase with Israeli wage (w_{ISR}) and with a relaxation of Israeli closure policy (higher $PEISR$), whilst they decrease when total labour supply (L^S) goes up. Finally, the effect of higher output (V) on Palestinian wages is a priori ambiguous. This is not surprising, because higher output means that the probability of getting a job both in the Territories and in Israel/settlements increases.

So far, the three big innovations of the MV model are to be found in the way macro causality, trade flows and the labour market are treated. Yet, the most important innovation lies in the way the model is closed. In the MV model there are 37 equations and 49 variables, so that 12 variables are to be fixed to solve the model. In Appendix A the reader may find the list of the 12 exogenous variables. Some choices are obvious, a couple of them are not and deserve to be commented, all the more so in that they are important in determining the results of the trade-related simulations we are going to illustrate and strongly differ from the corresponding World Bank choices. A first relevant departure concerns government conduct of fiscal policies. Assuming that a tax rate

adjusts endogenously to achieve a fixed government net position appears an extremely conservative approach to fiscal policy, and comes at odds with the normal economic practice. Said this, in the case of Palestine two sets of factors suggest a radically different approach. Firstly, a domestic market for government bonds does not exist, implying that deficit financing has resorted primarily to budget support from the international donor community.²⁰ Secondly, under the terms of the Paris Protocol an extraordinary large proportion of government revenues is not directly collected by the PNA, but actually transferred to it from the Israeli authorities, subject to a whole set of exogenous political considerations. This is the case for both VAT and custom duties, the two major sources of revenues for the Palestinian authorities.²¹ In light of these context-specific elements, we suggest taking PNA revenues as endogenous, while correspondingly constraining the budget deficit to a level determined by the exogenous vagaries of international donors. This essentially amounts to postulate that the PNA maximizes its expenditure subject to each period's disbursement in terms of budget support. A similar closure rule may sound somewhat bizarre at first sight, but appears much more attuned with the Palestinian situation. To see this, think of the period following Hamas electoral victory in 2006: at that time, the PNA could not afford paying public employees, because Israel did not transfer the stipulated tax revenues and international ODA flows had simultaneously halted for political reasons. As a result, public services provision declined abruptly and the overall level of activity fell sharply. These are the reasons why we finally decided to treat PNA fiscal deficit as exogenous and real PNA expenditures as endogenous. In the closure of the MV model – here is the second closure-related big difference with the World Bank model – nominal transfers from the rest of the world to Palestinian households are taken to be endogenous. A possible objection to our reasoning may stem from the enormous amount of development aid, which has flowed to Palestine since the Oslo agreement. Were ODA to explain most capital inflows, then the World Bank would be correct in holding this latter component as exogenous. The point is certainly relevant given the sheer size of ODA flows directed towards Palestine, nevertheless the economic

²⁰ The PNA has financed part of its deficits also by borrowing from commercial banks, transferring exceptional profits from the Palestinian Investment Fund and having recourse to payment arrears; however these sources of funding have historically played a minor role *vis à vis* budget support. See World Bank (2007a).

²¹ See in this respect the chapter on “Fiscal Policy and Performance” in FEMISE (2006). Besides, recall also that the PNA bears a sizeable loss of tariff revenues due to the management of indirect import. Under the current practice, the tariff revenue calculated on these goods – destined first to Israel and only subsequently re-exported by Israeli intermediaries into the West Bank or Gaza – is entirely retained by Israeli authorities, but paid by Palestinian consumers.

history of Palestine is such that the nature of capital flows goes well beyond development assistance. Aid has certainly played a critical role in the Palestinian external balance, however Valensisi and Missaglia (2010) have shown that its importance should not be overemphasised at the expenses of neglecting other financial flows stemming from endogenous portfolio choices. Available evidence on the evolution of the financial account of the balance of payments suggests that the allocation of financial wealth by Palestinian agents plays an important role in determining the nature and size of capital inflows. To put it as clearly as possible: each time those Palestinian with a bank deposit in, say, Jordan change its consistency, recorded capital inflows are correspondingly affected, and this choice cannot be considered to be exogenous.

Are the innovations introduced in the MV model likely to affect the outcomes associated with some of the alternative options for the future Palestinian trade regime?

3.2. Some trade-related simulations

Before illustrating the simulation exercises we want to propose, let us make some general remarks on how trade policies work in the MV model. Let's consider, for the sake of the argument, a process of full trade liberalisation in which tariffs on imports of any good from any country are reduced as much as possible.²² There are three “impact” effects at work: 1) reduced fiscal revenue for the PNA. The higher the proportion of taxes the Israeli government does not pay back to the PNA, the lower this effect (for the very simple reason that there is not much to lose); 2) lower prices for intermediate imports; 3) lower prices for imports of final goods. The interactions of these impact effects are rather complicated – and this is after all the reason why some kind of CGE model makes sense in order to evaluate trade policies. To begin with, the effect on real wages is not obvious. Nominal prices are likely to decrease since intermediate imports are cheaper; as to nominal wages, the sign of their variation depends on what happens to GDP – the relevant equation is (A5). And what happens to GDP? Here, again, the effect is

²² Tariffs cannot be simply removed. Indeed, one has to consider the issue of stability of the model. For instance, insofar as the model is demand driven and fix-price, the relevant stability condition is $dg^s/du > dg^j/du$. Now, even if calculating these two derivatives is virtually impossible (the MV model is a system of fully simultaneous equations), it is easy to understand that $dg^s/du = f(t_{mi}, t_{mf}, \dots)$: the lower the tariffs, the lower the value of that derivative. In words, the higher the tariffs, the higher the increase in government savings (and, *ceteris paribus*, overall savings) induced by GDP growth. When tariffs on imports from any region and any good are completely removed the value of dg^s/du is so low that the stability condition is violated.

potentially ambiguous. Indeed, insofar as output is demand driven, all the components of aggregate demand are to be taken into consideration: 1) Public expenditures. Trade liberalisation lowers the fiscal revenue and, unless the PNA is able to compensate by increasing some other tax and/or the donors are willing to finance a larger public deficit (in Palestine there is not a market for government bonds), government expenditures are to be reduced; 2) Private consumption. If profit-recipients' propensity to consume is lower than that of wage-earners and trade liberalisation redistributes income from the former to the latter (which is basically the outcome of lower prices), then private consumption is likely to go up; 3) Investment. Once again, a priori the effect is ambiguous. In the MV model, investment demand is positively related to the degree of capacity utilisation (an accelerator effect) and to the profit rate (a profitability/credit-constraint effect). As explained above, the ultimate effect on these two variables is ambiguous, and therefore the impact on the investment rate is also uncertain ex-ante; 4) Net exports. If domestic prices lower due to liberalisation, the real exchange rate will depreciate (reasonably, the nominal exchange rate in Palestine is to be taken as exogenous) and, *ceteris paribus*, exports will increase. As to imports, the overall effect depends on the specific liberalisation scenario which is implemented, on what happens to GDP and on how easy is to substitute between imports from different sources. Again, the effect is ambiguous.

This is the economics at work, and it is clear that one cannot predict ex-ante the likely effect of different liberalisation scenarios. A CGE model, in this case, is not just a way of putting numbers, orders of magnitude on a pre-specified outcome; rather, it is a way of understanding the sign of the outcome itself. Table 1 reports the results of our simulation exercises. We considered three different trade scenarios. In Scenario 1, tariffs are reduced by 80% from both Israel (in the current regime there are no tariffs on imports of final goods from Israel, but some tariff is applied on imports of intermediate goods, which may be due to complex rules of origin) and third countries. In Scenario 2 tariffs and taxes on imports from third countries only are removed. As Astrup and Dessus put it, this is a way of measuring the costs of granting preferences to Israeli imports within the current *de facto* customs' union regime. In Scenario 3, tariffs and taxes on imports from Israel only are removed. For each of the three scenarios, we applied two different closures: one in which government savings are fixed (this is "our" closure), another one, essentially introduced for the sake of comparison, in which real government expenditures are kept constant at the benchmark level. These two different closures correspond to two different visions on what the PNA, the Palestinians and the donors are likely to do in the aftermath of a trade liberalisation process. Keeping the level of public expenditures fixed

means either that donors accept to finance a fiscal deficit which, depending on the scenario, is to be multiplied by 2.6 to 4 compared to the benchmark level, or that the PNA is willing/able to increase some other tax to compensate such a huge deterioration in its budget. In any case, and this is quite clear from the numbers of Table 1, trade balance would also deteriorate and the compensatory capital inflows should essentially come from those Palestinians with a bank deposit abroad. So, according to the MV model, the expansionary effects of trade liberalisation could only materialize if one or more of these very much unlikely conditions regarding the PNA, the Palestinian savers' and the community of donors hold. We do not think this makes a lot of sense.

A more reasonable closure keeps government savings fixed. Under this assumption, Table 1 shows that all the liberalisation scenarios we considered are contractionary. The economics which is behind this result was explained above. Very briefly: despite investment demand remains basically unchanged and private consumption increase due to a pro-wage-earners income redistribution, the collapse of public spending determines the GDP contraction – do not forget that public spending is an extremely relevant component of Palestinian GDP, almost 18% in our benchmark.

Our policy conclusion is that trade liberalisation is not a priority for Palestine and, look again at the numbers of Table 1, that the current customs' union regime with Israel is after all better than other possible arrangements. A possible objection to our argument is that it does not incorporate those efficiency gains which are traditionally attached to trade liberalisations by mainstream economists. This is true, these dynamic effects are not incorporated in the MV model, and this is a possible extension for future research. Still, even within our static framework, it can be already claimed that the efficiency gains are not to be over-emphasised, at least for a couple of reasons. First, in several mainstream CGE models efficiency parameters are assumed to be a positive function of the degree of openness of the economy, the latter being measured as the ratio between the sum of real imports and exports at the numerator and real GDP at the denominator. Well, as shown in Table 1, the increase in the degree of openness following the diverse scenarios of trade liberalisation is negligible, around 1-2%. Second, insofar as the economy operates below full capacity, "increasing efficiency", i.e. the level of attainable output, does not make a lot of sense. Re-activating aggregate demand is more important, and in this sense trade liberalisation is not the key.

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Appendix A: The MV model

Indexes

$f = R, I$ (Rest of the World, Israel);
 $h = WB, GS$ (West Bank, Gaza Strip)

Equations of the MV model

$$(A1) \quad Q = (1 + \tau) \left[wb + \sum_f e_f P_f^* (1 + tmi_f) a_{0f} \right]$$

$$(A2) \quad fi_f Q = e_f P_f^* a_{0f}$$

$$(A3) \quad P = \left[1 + \left(1 - \sum_f fi_f vata_d \right) \right] Q$$

$$(A4) \quad L = bV$$

$$(A5) \quad \frac{wL}{LS} = \frac{rp \cdot wisr \cdot PEISR}{(LS - L)}$$

$$(A6) \quad M_{0f} = a_{0f} V$$

$$(A7) \quad \frac{M_R}{M_I} = \left[\frac{PM_I (1 - \delta)}{PM_R \delta} \right]^\lambda$$

$$(A8) \quad IM = ef \left[\delta M_I^{\frac{\lambda-1}{\lambda}} + (1-\delta) M_R^{\frac{\lambda-1}{\lambda}} \right]^{\frac{\lambda}{\lambda-1}}$$

$$(A9) \quad IM = mf_0 V^\theta$$

$$(A10) \quad PM_f = e_f P_f^{*f} (1 + tmf_f) (1 + vatm_f)$$

$$(A11) \quad EXP_f = EXP_{0f} \left(\frac{e_f \check{P}_f}{P} \right)^{\sigma_f}$$

$$(A12) \quad u = \frac{V}{K}$$

$$(A13) \quad r = \frac{\tau}{1+\tau} \frac{Q}{P} u$$

$$(A14) \quad shl = \frac{wb}{wb + \sum_f e_f P_f^* (1 + tmi_f) a_{0f}}$$

$$(A15) \quad WFI_h = siw_h WFIS$$

$$(A16) \quad gsw_h = sw_h \left[shw_h \frac{shl}{(1+\tau)} \frac{Qu}{P} + \frac{TRGH_h + e_R TRRH_h + WFi_h}{PK} \right]$$

$$(A17) \quad gsr_h = sr_h \left[(1 - dtr_h) shnw_h \frac{\tau}{1+\tau} \frac{Qu}{P} \right]$$

$$(A18) \quad dtar = \frac{\tau}{1+\tau} \frac{Qu}{P} \sum_h dtr_h shnw_h$$

$$(A19) \quad iitr = vatd \left[1 - \sum_f \hat{f}_f \frac{Qu}{P} \right]$$

$$(A20) \quad eitr = \sum_f tmi_f \hat{f}_f \frac{Qu}{P} + \frac{1}{PK} \sum_f e_f P_f^{*f} M_f \left[vatm_f (1 + tmf_f) + tmf_f \right]$$

$$(A21) \quad tpw = \frac{trpw.WFIS}{PK}$$

$$(A22) \quad trgr = \frac{e_R TRRG}{PK}$$

$$(A23) \quad tpgrev = dtar + iitr + eitr + trgr + tpw$$

$$(A24) \quad tegrev = dtar + iitr + ref(eitr + tpw) + trgr$$

$$(A25) \quad gsg = tegrev - \gamma - \sum_h \frac{TRGH}{PK}$$

$$(A26) \quad gsf = \sum_f \hat{f}_f \frac{Qu}{P} + \frac{1}{PK} \sum_f e_f P_f^{*f} M_f - \sum_f e_f \tilde{P}_f EXP_f + \\ + (1 - ref)eitr - ref \cdot tpw - \frac{e_R}{PK} (\sum_h TRRH_h + TRRG) - \frac{e_L}{PK} WFIS$$

$$(A27) \quad g_s = \sum_h gsw_h + gsg + gsf$$

$$(A28) \quad \gamma = G / K$$

$$(A29) \quad g_i = g_0 + \alpha r + \beta u$$

$$(A30) \quad g_i - g_s = 0$$

$$(A31) \quad gsf = \sum_f e_f t_f$$

$$(A32) \quad (V - V^*)(\tau - \tau_0) = 0$$

$$(A33) \quad V^* = \min\left(\frac{LS}{b}, \frac{K}{ICOR}\right)$$

Endogenous variables

Q : Producer price of composite domestic output

W : Nominal wage rate

f_{if} : Share of net intermediate imports from country F on producer price

P : User price of composite domestic output

L : Total employment

V : Real GDP

M_{0f} : Real intermediate imports from country F

M_f : Imports of final goods country by country

IM : Aggregate imports of final goods

PM_f : Domestic currency price of imports from country F (gross of tariffs)

EXP_f : Exports to capital ratio country by country

u : Degree of capacity utilisation or τ : mark-up rate

r : Macroeconomic profit rate

shl : Labour share on total variable cost

- gsw_h : Saving rate of workers belonging to household H
- $TRRH_{WB}$: Nominal transfers from R to households in the West Bank (foreign currency)
- gsr_h : Saving rate of rentiers belonging to household H
- $dtar$: Normalised direct tax revenue
- $iitr$: Normalised internal indirect tax revenue
- $eittr$: Normalised external indirect tax revenue
- tpw : Normalised taxes on Palestinian labour in Israel/settlements
- $trgr$: Normalised transfers from R to govt
- $tpgrex$: Normalised total potential govt revenue
- $tegrex$: Normalised total effective govt revenue
- gsf : Foreign saving rate
- gs : Aggregate saving rate
- γ : Real govt expenditure to capital ratio
- G : Real govt expenditure
- gi : Investment rate
- WFI_h : Wage bill from Israel and the settlements going to household H expressed in Israeli currency

Exogenous variables

- e_f : Nominal exchange rate with country F
- K : Capital stock
- $TRGH_h$: Nominal transfers from the govt to households H
- $TRRH_{GS}$: Nominal transfers from R to households in the Gaza Strip (foreign currency)
- $TRRG$: Nominal transfers from R to govt (foreign currency)

gsg : Govt saving rate

t_f : normalised foreign savings in foreign currency country by country

$WFIS$: Wage bill from Israel and the settlements expressed in Palestinian currency

Parameters

$shnw_h$: Share of markup income going to household H

τ_0 : Mark-up rate

b : labour-output ratio

P_f^* : Country F currency's price of intermediate imports

P_f^{*f} : Country F currency's price of final imports

$Trpw$: Average tax rate on Palestinian labour in Israel/settlements

tmi_f : Tariff rate on intermediate imports from country F

tmf_f : Tariff rate on final imports from country F

a_{of} : imported (from country F) intermediate-output ratio

$vatd$: Value added tax rate on domestic production

$vatm_f$: Value added tax rate on imported production

δ : Share parameter in CES import aggregator

ef : Efficiency parameter in CES import aggregator

λ : Elasticity of substitution between imports from countries R and F

mf_0 : Shift parameter in the total import function

θ : Income elasticity of total imports

\bar{P}_f : Country F currency price of final exports

σ_f : Exports elasticity to the real exchange rate

sw_h : Workers propensity to save in household H

sr_h : Rentiers propensity to save in household H

dtr_h : Direct tax rate on household H

g_0 : Animal spirit parameter in the investment function

α : Profit rate parameter of the investment function

β : Capacity utilisation parameter of the investment function

shw_h : Share of wage bill going to household H

ref : Share of tax revenue refunded from Israeli govt to PNA

V^* : Potential output

rp : risk premium

LS : labour supply

$wisr$: wage rate earned by Palestinian workers in Israel and the settlements
expressed in Palestinian currency

$PEISR$: quantity of Palestinian workers in Israel and the settlements

siw_h : share of Israeli wages going to household H

Appendix B: The Macro Social Accounting Matrix

The following Social Accounting Matrix (SAM) the MV model is based on was prepared by Clara Capelli. It is not an official SAM, in that it has not been built by the official statistical institute, the PCBS (Palestinian Central Bureau of Statistics). Still, it has been elaborated in collaboration with PCBS, using data from different sources referred to years from 2006 to 2008.

	ACTIVITIES	FACTORS OF PRODUCTION			HOUSEHOLDS		CAPITAL ACCUMULATION	GOVERNMENT	FOREIGN SECTOR			
		CONSUMPTION	INVESTMENT	BUILDING INVESTMENT	WAGE INCOMES	NON-WAGE INCOME			WEST BANK	GAZA STRIP	ISRAEL	RoW
ACTIVITIES		5953.56	366.02	623.7							6943.28	
	CONSUMPTION						3501.9	1346.9	1237.6	638.10	81.297	6805.797
	INVESTMENT									25.46	3.243	564.103
	BUILDING INVESTMENT								623.7			623.7
FACTORS OF PRODUCTION	EMPLOYED LABOUR	1230.33								315.1		1545.43
	NON-WAGE INCOME	3441.97										3441.97
	WEST BANK				1183.094	2551.923			422.301		395.864	4553.182
HOUSEHOLDS	GAZA STRIP				362.336	890.047			259.427		303.407	1815.217
							708.425	336.175	61	53.5		1159.1
CAPITAL ACCUMULATION	VAT		55									
	TAX_INCOME						342.857	132.142				
	CLEARANCE TAXES_TAX	134.313	57.926	16.965								2222.328
	CLEARANCE TAXES_VAT	212.204	91.518	26.803								
	CLEARANCE TAXES_Y									140.6		
GOVERNMENT	AID										1012	
	ISRAEL	1456.966	494.451	118.788					242			2968.571
	RoW	467.497	153.342	35.527								
FOREIGN SECTOR		6943.28	6805.797	564.103	623.7	1545.43	4553.182	1815.217	1159.1	2222.328	2968.571	

Table 1: the MV flex/fix price model. Trade simulations (% changes).

	Scenario 1			Scenario 2			Scenario 3	
	Fixed G	Fixed Gov Sav (MV)	A&D	Fixed G	Fixed Gov Sav (MV)	A&D	Fixed G	Fixed Gov Sav
Real GDP	17.36	-1.67		9.56	-0.61		19.905	-1.024
User Price	15.72	-8.96		4.98	-4.23		25.8	-6.71
Prod. Price	15.68	-8.93		4.96	-4.22		25.73	-6.69
Real fin imp from Isr	10.77	-3.85	1.5	4.1	-3.71	22.00	17.9	1.12
Real fin imp from RoW	22.79	6.58	77.00	18.98	10.06	128.3	9.86	-5.76
Real Exp. to Israel	-5.67	3.83	5.2	-1.92	1.75	3.2	-8.77	2.82
Real Exp. to the RoW	-1.45	0.94	0.6	-0.48	0.43	5.3	-2.27	0.70
Invest. Rate	2.60	-0.25	7.8	1.43	-0.09	3.1	2.98	-0.15
Real Wages	44.43	6.66	2.90	19.11	3.27	3.1	51.39	5.26
Profit Rate	17.31	-1.65	2.10	9.55	-0.60	2.5	19.83	-1.00
Real cons in the WB	33.34	1.26	5.00	17.84	0.02	2.0	34.66	0.13
Real cons in the GS	18.96	7.90		9.061	3.72		19.45	6.01
Degree of openness	- 10.193	2.69		-5.91	1.15		-12.93	2.034
Real Govt Expen	Fixed	-14.31		Fixed	-9.26		Fixed	-14.84
Real Govt Transf to house	-13.59	9.84		-4.74	4.42		-20.51	7.20
Real Govt savings	- 297.28	Fixed		- 160.19	Fixed		-326.52	Fixed

Scenario 1: Reduced tariffs from Israel and all third countries.

Scenario 2: Elimination of tariffs and taxes on imports from all third countries.

Scenario 3: Elimination of tariffs and taxes on imports from Israel.

Palestine: A Theoretical Model of an Investment-Constrained Economy

Alberto Botta and Gianni Vaggi**

Abstract: The sixty-year-old Israeli-Palestinian conflict has deeply influenced the evolution of the Palestinian economy. In the last two decades persistent political instability and the Israeli closure policy have been sources of protracted economic stagnation and poor capital formation. This paper describes the consequences on the Palestinian economy of two particular conditions: high transaction costs and market fragmentation. We use a simple one-sector model which describes Palestine as a demand-driven economy and Palestinian capital accumulation as linked to desired investments by Palestinian firms. Within this framework, we show that high transaction costs discourage capital formation by curtailing expected profitability. Market fragmentation further reduces domestic investments by reducing the size of the market and depressing entrepreneurs' animal spirits. We show that in the short-run, where expectations are given, the above two facts induce low levels of capacity utilization and of capital accumulation. The situation is even more worrying in the long-run, when entrepreneurs can adapt their expectations. Depressed animal spirits and low levels of capacity use feed back into each other and give rise to a low-growth trap; escape from this trap would prove extremely difficult. We also highlight the possible positive impact of the removal of high transaction costs and of market fragmentation, and the ensuing benefits on long-term equilibrium values of both capital accumulation and capacity utilization. The conclusions try to set this analytical results within the historical situation of the Palestinian economy, and to envisage the roles of economics and politics in order to establish a sustained process of development.

JEL Classification: O53, O11, E12.

Keywords: Palestine, low-growth trap, post-Keynesian models.

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That the division of labour is limited by the extent of the market,
(Adam Smith, *Wealth of Nations*, Book I, chapter III)

1. Introduction

From the Six-Day War to the beginning of the nineties, Palestine was exposed to direct Israeli military, economic and administrative control. Movement restrictions have continued to affect Palestinian economic activities since 2001. Needless to say, this environment has deeply influenced the Palestinian economy.

If terms of trade issues, Palestine appears to be a province of Israel, although Israeli restrictions constrain goods movements and market integration. Palestine does not enjoy complete economic sovereignty. Since the Paris Protocol of 1994, there has been a spurious custom union. Foreign trade policy is out of the Palestinian government's control and is unilaterally determined by Israel. The Palestinian Monetary Authority, although in charge of regulating domestic financial institutions, cannot run an independent monetary policy due to the lack of a Palestinian currency, a lack that amounts to a *de facto* monetary union. The tax system is largely non-existent; most indirect tax revenues are collected by Israel and subsequently transferred to the Palestinian National Authority.

From the Oslo Treaty on, Palestine has recorded disappointing economic results (Fischer *et al.* 2001; UNCTAD 2009) and in the last decade Palestinian per-capita income has decreased (World Bank 2006a; UNCTAD 2008). Potential output has been persistently higher than effective output, and the lack of effective demand for Palestinian goods has induced mass unemployment and protracted economic stagnation (World Bank 2004). With regard to the long run and to the expansion of productive capacity, the salient feature is poor capital formation. The reason for this feature does not seem to be a lack of savings; productive investments are low because of the absence of profitable investment opportunities and entrepreneurs' reluctance to invest in the Palestinian economy (World Bank 2007a). The depressed domestic investment climate is by far the most substantial problem Palestine has to tackle in order to unleash its growth potential.

There is general agreement among economists that most of these problems depend on tight direct and indirect impediments to Palestinian business activities (Naqib 2002; Akkaya *et al.* 2008; UNCTAD 2008). Israeli security controls and check-point

procedures have hugely increased transaction costs. Moreover, closures and movement restrictions have fragmented the domestic Palestinian economy and forced Palestinian firms into small local enclaves. Both facts have wide economic repercussions. First, high transaction costs reduce the competitiveness of existing activities. Second, the denial of access to large markets depresses entrepreneurs' animal spirits, further curbs investments and causes economic stagnation by constraining effective demand for Palestinian goods.

Several authors have described the effects of such an economic environment on Palestine's development. In 2001, Astrup and Dessus (2001) implemented a neoclassical CGE model on Palestine. UNCTAD (2009) developed a complex macro framework to simulate the effects of a wide range of institutional and political changes. However, these models fail to give due importance both to the demand side of the problem and to the role of investments.

The present paper tries to fill this gap; in particular we build a simple model which allows a theoretical analysis of the core issue in the Palestinian economy, i.e. the consequences on investments of cumbersome transaction costs and of market fragmentation. We do this through a simple, one-sector macro model which describes a demand-driven Palestinian economy; given fixed or sticky prices, the level of economic activity emerges from effective demand. Moreover, we model the lack of profitable investment opportunities by considering an ad-hoc investment demand function for the Palestinian economy. Whilst this modelling strategy is grounded on well-established features of most Keynesian models, it allows us to get the effects that high transaction costs and small and fragmented markets exert on Palestinian capital accumulation by affecting expected profitability and entrepreneurs' animal spirits.

As to the long run, we show that improving or worsening economic conditions may alter the dynamics of economic expectations, and thus generate diverging growth paths. Depressed entrepreneurs' animal spirits and low levels of capacity use can give rise to a low-growth trap from which Palestine is unlikely to escape should existing adverse economic conditions persist.

The paper is organized into 7 sections. After this introduction, section two enlightens some stylized facts about Palestine. Section three introduces the theoretical model. Section four presents some comparative static exercises through which we assess the short-run effects of high transaction costs and market fragmentation on Palestinian economic activity and capacity utilization. Section five discusses the long-run issues, capital accumulation in particular, and examines adaptations in entrepreneur's expectations; it also shows that there could be different long-run equilibria. Because of

the current economic restrictions, Palestine is likely to be stuck in a low growth trap. Section six highlights how the removal of high transaction costs and of market fragmentation could unleash the growth potential of the Palestinian economy. Section seven concludes by depicting some of the political implications of Palestine's plight.

2. Some stylized facts on Palestine and the role of demand

2.1. Some facts

Palestine is a middle-income economy whose functioning has been distorted by the extraordinary conditions imposed by the sixty-year-old Israeli-Palestinian conflict. What follows is a short list of the main features of the Palestinian economy.

1) Palestine is a small open economy, whose import flows amount to more than 70% of its GDP, whilst exports account a mere 14%. Palestine directs almost all exported goods to Israel, from whom it receives more than 70% of all imports. This “geographical” bias of Palestinian trade flows is partly explained by the *de-facto* custom union with Israel.

2) From 1996 to 2007 the Palestinian trade deficit averaged 50% of GDP. This extraordinary deficit was financed in two ways. Firstly, Palestine enjoys considerable annual foreign remittances.¹ These remittances explain the considerable gap between Palestinian Gross Domestic Product and Gross National Product, the latter amounting to 112% of the former in 2007 (PCBS, 2009a). Secondly, international organizations and foreign governments have so far provided substantial international aid to Palestine. According to Valensisi and Missaglia (2010), total international aid to Palestine covered more than 70% of its trade deficit in 2007.

3) The Palestinian economy is chronically stuck in a less-than-full-employment equilibrium. According to the World Bank (2007a), industrial capacity utilization is generally around 50% in almost all productive sectors, averaging 57% in West Bank and 47% in Gaza. Moreover, from 1996 to 2007, the unemployment rate averaged to 20% of the total labour force (PCBS 2009b). Massive, open unemployment goes hand-in-hand

¹ For instance, remittances to Palestinian households in 1998 amounted to 16.4% of GNI (Dessus 2004, p. 458, note 22).

with the contraction of the employment share of the industrial sector and with the growth of a large informal sector. Due to the lack of formal employment opportunities, an increasing proportion of Palestinian people are involved in low-productive agricultural and service activities, and in particular in petty trade.

4) According to the World Bank (2007a), "the size of the average industrial [Palestinian] enterprise is about four workers, no larger than it was in 1927" (World Bank 2007a, p. 1). Domestic firms terribly need physical investments to improve their competitiveness. However, despite great expectations in the aftermath of the Oslo agreement, capital formation has been extremely weak. From 1994 to 2007, investments in the non-building sector were around a mere 15% of domestic GDP (PCBS 2003, 2008, 2009a). This share falls far below the 23% recorded by UNCTAD for the Least Developed Countries in the period 1990-2003. Moreover, it is 20 percentage points lower than the threshold level considered necessary to feed fast economic growth and catching-up with developed countries (see UNCTAD 2006, p. 91).

2.2. Prices and wages

These stylized facts need a theoretical scheme for appropriate interpretation. Most of the economic pathologies affecting Palestine seem to be Keynesian in nature. As far as Palestinian unemployment is concerned, the World Bank (2004) states that it "reflects the fact that demand for Palestinian goods is insufficient for the economy to function at full-employment" (World Bank 2004, p. 10). Alternatively, a problem of *effective* demand may be at the base of chronic Palestinian mass unemployment. In such a context, the neoclassical-type (relative) price adjustment does not seem to be a useful tool with which to restore full employment. According to some analyses, "the Palestinian dependence on Israel pervades almost every aspect of economic life, including prices and other major monetary variables" (Peres Centre for Peace and PALTRADE 2006, p. 12). "Prices in Palestine follow closely those prevailing in Israel" (FEMISE 2006, p. 77). While this picture does not apply to all prices, in particular to those of home-produced services and non-tradable goods, it is still relevant in the case of tradable goods. According to stylized fact 1 and to the "small-country assumption", the prices of tradable goods can be assumed as exogenous. More generally, several prices in Palestine are fixed, or at least sticky, and the Palestinian price system only partially responds to macroeconomic imbalances. As a

consequence, quantity-driven adjustments instead of price-driven adjustments may take place inside the economy.²

According to Dessus and Ruppert Bulmer (2004, p.19) the low competitiveness of Palestinian firms and the low investment rates depend on the relatively high cost of Palestinian labour, which is due to very high reservation wages of employment opportunities in Israel. However, such a situation changed abruptly in 2000, after which Palestinian wages have increasingly diverged from those prevailing in Israel, so that any type of cost approach can only partly explain the low level of investments in tradable goods and in manufacturing in particular.

2.3. Investments and savings

The “two gaps” approach highlights the main macroeconomic features limiting growth potential in open developing economies. Scholars have concentrated mainly on the saving constraint and the foreign exchange constraint. As far as Palestine is concerned, we believe that neither the foreign exchange nor the saving constraint is binding.

The first constraint will be discussed in the next section, but it is worth noting that households and banks have a net asset position abroad, and there are substantial foreign exchanges flows entering the country, mainly in the form of remittances and aid.

As to the saving constraint, low levels of investments in Palestine do not seem to be the result of a lack of savings. Actually, Palestinian banks’ deposits increased constantly from 2003 to 2008, and domestic banks “have been successful in attracting public savings” (World Bank 2009, p. 4). The domestic financial system appears to be highly liquid and seems to dispose of a large amount of resources to support domestic investments. However, financial institutions often prefer investing their resources abroad and acquiring more secure foreign assets rather than investing in the unstable Palestinian economy.

Certainly, the saving ratios have decreased since 2000, but savings are still relatively high in comparison to economies with similar income per capita or in the same region, Middle East and North Africa. Even though Palestinian firms sometimes cite credit restriction as an obstacle to investment projects, credit restriction does not appear to be the greatest constraint to investments (UNCTAD 2004; World Bank 2007a). Saving

² On the adjustment mechanisms taking place inside the Palestinian economy, see Arnon *et al.* (1997).

restrictions may rather imply lack of *effective* demand for credit, a well-know problem in the post-Keynesian theory of endogenous money.

Accordingly, the representation of Palestinian investments as being constrained by the lack of savings is probably misleading. Palestine boasts few profitable investment opportunities, so domestic and foreign entrepreneurs are reluctant to invest in Palestine. We think that a description of the saving-investment link along Keynesian lines may be a far more appealing way to capture the peculiarities or, better the pathologies, of the Palestinian investment climate. This paper introduces an ad hoc investment demand function that allows us to pinpoint the factors that make domestic and foreign entrepreneurs reluctant to invest in Palestine. This function is a central issue in our analysis and will help to understand the mechanisms through which high transaction costs and market segmentation, by reducing expected profitability and capacity utilization, eventually curtail domestic capital formation.

Palestinian investments seem to be strongly jeopardized by high transaction costs, market fragmentation and the denial of secure access to large markets. A World Bank sample study finds that only 41% of West Bank establishments sell more than 25% of their products in parts of the West Bank outside their specific area. Market fragmentation determines a lack of market access but also a lack of competitive prime (see World Bank 2007a, pp. 25-26). Palestinian firms have been damaged by the fact that, 'because of non-tariff-barriers', they do not have direct access to the largest and closest market available: that of Israel. This is particularly bad for those tradable products which could compete with their Israeli counterparts: food, pharmaceuticals and IT products (World Bank 2007a, p. 30).³

According to the World Bank (2007a), "shrinking market access and the lack of free movement are the main constraints to growth for Palestinian firms [...] They know that they need to invest and have access to the necessary resources. However, they are unwilling to do so unless they are assure secure and predictable access to both domestic

³ This does not mean that any type of economic integration with Israel would necessarily be beneficial for the Palestinian economy. Palestine has on numerous occasions been analyzed in relation to Israel and the presumed effects of their integration are at least controversial (Aix Group 2004). Certainly, the existing links with Israel have not brought about structural transformations in the Palestinian economy, namely an increase in the share of industry, apart from construction, and of manufacturing in particular. In recent years, integration with Israel has become even more problematic as a result of the Israel's accession to the WTO and of the opening up of Israel's economy to imports from Asia, mainly in low-skilled products, where in principle Palestine could have an opportunity in the Israeli market. In this paper, therefore, we do not focus on the issues concerning the economic links between Palestine and Israel, but rather on the Palestinian economy as such.

and international markets” (World Bank 2007a, p. 2). Given persistent economic stagnation, “most Palestinian firms are operating at low capacity and because of the closure are steadily losing markets. Thus, they have little need to invest” (World Bank 2007a, p. 23).

In 1990 Bacha introduced a third constraint: the so-called fiscal constraint.⁴ This makes some sense in the case of Palestine, because of the lack of public savings, which in turn is due to the small tax base and to fiscal leakages to Israel. Moreover, the fiscal constraint highlights some elements of an investment-constrained economy in so far as it relies on the crowding-in effect of public investment, mainly in infrastructure, on private investment. Palestine clearly lacks fundamental infrastructures, which are costly and unreliable when provided by Israel. As for the budget, part of the infrastructure is provided by international aid, but in the case of Palestine this particular way of supporting public investments does not seem to have a significant positive impact on private investments. The fiscal constraint picks up some elements of the Palestinian economy, but we prefer to concentrate more directly on impediments to private investments and on the explaining of the lack of investment opportunities, which is due to the situation on the ground.⁵

3. A simple theoretical model on Palestine

In the last decade, protracted economic stagnation has led to the emergence of a dualistic economy in Palestine. On the one hand, a small formal sector, which largely overlaps with industrial activities producing tradable goods, has shrunk even further. On the other hand, an expanding informal sector based on agriculture and service activities producing non-tradable goods has provided an alternative to open unemployment. Despite this fact, we here assume a simple one-sector economy, and we concentrate on investment opportunities in the formal sector. Actually, rising informality in Palestine is a side-product of declining formal activities or of the impossibility for Palestinian people to find formal employment in Israel.⁶

⁴ Other definitions, such as capacity and investment constraint, have also been used, see Ros (2000).

⁵ 2006 was a case of fiscal constraint because of the aid squeeze following Hamas’ victory in the elections.

⁶ See Cimoli *et al.* (2006) on economic growth, the dynamics of a small formal sector and widespread informality.

Let us assume a small open economy which produces a single tradable good through a Leontief production function using capital and labour. X is total Palestinian output, \bar{P} is the corresponding price, which is exogenous due to the small-country assumption. Accordingly, equation (1) defines cost decomposition for domestic production.

$$\bar{P} X = wL + rP_I K + \theta \bar{P} X \quad (1)$$

$$\bar{P} = (1 + \tau) \frac{wb}{(1 - \theta)} \text{ so that } \tau = \frac{\bar{P}(1 - \theta)}{wb} - 1 \quad (2)$$

$$r = (x_p - \omega pb)u \quad (3)$$

$x_p = (1 - \theta)p$ is the value of a unit of “effective” output in terms of the price of the capital good, $p = (\bar{P} / P_I)$ and $\omega = (w / \bar{P})$ is the real wage in terms of the domestic product.

In equation (1), w stands for the domestic monetary wage, which is assumed to be fixed according to a Lewis-type argument,⁷ r is the profit rate, K is the installed capital stock and $P_I = \beta \bar{P} + (1 - \beta)P_F$ its price.⁸

Although Palestine is involved in a de-facto custom union with Israel, and although it is open to free trade relationships with several third countries, Palestinian goods do not move freely inside or outside Palestine. The Palestinian economy faces very high transaction costs;⁹ Palestinian goods are usually subjected to extensive check-point procedures. Time-consuming security and technical controls imply time delays for Palestinian goods to reach markets, and quite often part of the output is lost because of the perishable nature of traded goods and of borders authorities’ discretionary behaviours.

⁷ According to PCBS (2009b), besides open unemployment, disguised unemployment largely affects agriculture and service activities. It thus appears reasonable to assume a perfectly-elastic labour supply in the Palestinian formal sector.

⁸ Palestinian capital goods are largely imported from abroad. In this paper, we assume the Palestinian capital stock to be made up of both imported and home-produced goods. We assume a fixed share $(1-\beta)$ of the domestic capital stock and domestic investments to be imported, and the remaining (small) share β to be produced domestically. Accordingly, the price P_I of each unit of the capital stock K is an average of the domestic price \bar{P} and of the foreign price P_F with the respective weights β and $(1-\beta)$.

⁹ Palestinian truck drivers who have to follow inconvenient roads in order to reach customers or undergo complex and protracted back-to-back procedures at check points.

In this paper we capture immediate output losses by introducing parameter θ to equation (1) and by modelling transaction costs as *iceberg* costs which reduce the quantity of output Palestinian firms actually bring to markets.¹⁰ *Ceteris paribus*, since X is the total amount of output produced, a fixed share θ of it is irremediably lost due to movement restrictions. Only a fraction $(1-\theta)$ of domestic output (and of the ensuing revenues) has to be taken into account to derive the “net” total income that is effectively distributed between productive inputs.

In equation (2) we use a simple Kaleckian cost-plus function to describe price formation in Palestine; we assume the domestic price \bar{P} , the labour/output coefficient b and the wage rate w to be exogenous. The mark-up rate τ is endogenous. Equation (2) shows the negative effects of high transaction costs on the profitability of Palestinian firms. Whilst $((1/b)=X/L)$ stands for labour productivity at the end of the production process, $((1-\theta)/b)$ is the ex-post *effective* value added per unit of labour once output losses are considered. It goes without saying that, by reducing Palestinian labour productivity, high transaction costs increase unit costs¹¹ and reduce the mark-up rate τ . The ensuing negative effect on the profit rate r is set in equation (3); for any given level of capacity use u ($=X/K$), the higher θ , the lower r and the profit rate of Palestinian firms will be.

With prices established on international markets, effective demand for Palestinian goods determines the level of economic activity and capacity use. Effective demand, in turn, comes from demand injections, which in our model are given by desired investments and net exports, and demand leakages, that is to say domestic savings. According to the stylized facts above, all these variables assume specific features in Palestine. Let us now examine them in more detail.

¹⁰ Administrative inefficiencies would have an effect on the value of output similar to that of transaction costs.

¹¹ Akkaya *et al.* (2008) and the World Bank (2006b) describe how high transaction costs reduce labour productivity and increase unit costs of Palestinian firms. Besides direct output losses due to back-to-back procedures and handling of transported goods at check points, Palestinian transport firms cope with uncertainty at check points by using more than one driver per journey. After the Second Intifada, check-point controls allow trucks in the West Bank to make only two rotations per day rather than the three rotations usual in the pre-Intifada period. Akkaya *et al.* (2008) estimate labour productivity in the transport sector to have diminished by 33% in the aftermath of the Second Intifada.

We assume a homogeneous saving propensity between wage earners and profit earners, so that both social classes save a constant fraction "s" out of their income.¹² Equation (4) defines total domestic savings:

$$S = S_{\pi} + S_w = srP_I K + swL = s[rP_I K + wL] = s(1 - \theta)\bar{P}X \quad (4)$$

Dividing both sides of equation (4) by the value of the capital stock $P_I K$, we obtain:

$$g^S = \frac{S}{P_I K} = sx_p u \quad (5)$$

Equation (5) defines the growth rate of the domestic capital stock as allowed by the available domestic savings. g^S is a positive function of capacity utilization u , and of the savings propensity, whilst it is negatively influenced by transaction costs θ , because they curtail the net income to be distributed to productive inputs.

Investment demand in Palestine is influenced by the obstacles and the uncertainty domestic firms have to face. In this paper we propose an ad-hoc investment demand function in order to represent the specific Palestinian investment climate. This is modelled in equation (6) below:

$$g^i = \rho + \alpha(u - u_n) + \gamma r_n \quad (6)$$

with $\alpha, \gamma > 0$; $\gamma = f(r_n / r_f)$ and $(\partial \gamma / \partial (r_n / r_f)) > 0$

Equation (6) includes three elements and requires a detailed explanation. First, take parameter ρ which represents entrepreneurs' animal spirits, which are always very difficult to model. Following Lavoie (1992, 1995), let us assume them to be linked to the *expected average growth rate* of Palestinian sales over the planning horizon of Palestinian entrepreneurs. Economic theory generally agrees on the idea that a potentially large market is a pre-condition to undertake investments in industrial activities. Palestine

¹² The Palestinian productive system is mostly composed of family-owned small-to-medium size firms. As a consequence, it is often hard to distinguish between different social classes, workers and capitalists in particular, as far as consumption and savings decisions are concerned.

is a typical case of a market-constrained economy. Palestinian firms are close to, and might potentially benefit from, easy access to pretty large markets, but they are confined to small local enclaves (see World Bank 2007b). Small local markets obviously dampen firms expectations about sale dynamics, and make productive investments worthless.

This paper attempts to improve on previous works, specifically by providing more detail on entrepreneurs' expectations about future changes in sales, through the following equation:

$$\rho = f(n, sh^e, \lambda) \text{ with } (sh^e)', n', \lambda' > 0 \text{ and } 0 < \lambda < 1$$

Parameter ρ firstly depends on market dimension. Following Krugman (1991), let us assume market dimension to be captured by the total population composing both the domestic economy and foreign trading partners. *Ceteris paribus*, if n is the natural growth rate of market size due to, for example, population growth, the higher n is, the larger the expected average growth rate of Palestinian sales and Palestinian entrepreneurs' willingness to expand production capacity will be.

Expected average changes in Palestinian sales also respond positively to the market share (sh^e) Palestinian firms expect to capture *vis-a-vis* foreign products on domestic and foreign markets. Given n , the higher sh^e is, the higher is the expected trend growth rate of Palestinian sales, and therefore domestic entrepreneurs' desire to invest, will be.

In the case of Palestine, besides the "natural" growth rate of the market and expected market shares, the expected average growth rate of Palestinian sales may vary due to better economic integration between currently separated areas in the West Bank and Gaza. Let us take the candy industry in Nablus, for instance. It makes a big difference to serve the nine hundred thousand people in North West Bank instead of producing for the four million Palestinians living in West Bank and Gaza Strip as well as, hopefully, for seven and a half million Israelis. Even without changes in Palestinian (expected) market shares or in the natural growth rate of domestic and foreign markets, market integration can considerably boost the expected average growth rate of Palestinian sales by simply giving Palestinian firms' the opportunity to have secure access to large markets. Accordingly, Palestinian firms may revise and raise their investment plans remarkably.

In our model, parameter λ represents the degree of market integration inside Palestine and between Palestine and foreign countries; it also represents the extent to which existing potential market and of its natural growth rate can effectively reached by

Palestinian firms. Values of λ close to 1 mean advanced economic integration and the possibility for Palestinian firms to access domestic and foreign markets without restrictions. In contrast, values of λ close to zero stand for Palestinian firms' exclusion from foreign markets and de-facto forced confinement to very small local areas. Higher λ values, i.e. better economic integration, positively affect the expected average growth rate of Palestinian sales, improve entrepreneurs' animal spirits and raise capital accumulation in equation (6).

The second element in equation (6) concerns capacity utilization. Apart from the expected changes in sales, entrepreneurs plan investments according to the rate at which the existing capital stock is used. The lower u is, the higher idle capacity becomes and the less firms need to expand their production base (see World Bank 2007a). In equation (6), we assume a positive relationship between investment demand g^i and current capacity use u . According to Committeri (1986), investment decisions respond positively to the difference between the current rate of capacity use u and the *normal* rate of capacity use u_n . Parameter α depicts the sensitivity of Palestinian investment plans to such a discrepancy. We define the normal rate of capacity use as "the percentage of total practical capacity at which firms can expect to operate on the average of the business cycle" (Lavoie 1992, p. 122). If current capacity use falls lower than normal capacity use, entrepreneurs curtail investments. Vice versa, u values higher than u_n may be perceived as a sign of booming economic activity and of the need to scale up production capacity through additional investments.

The different description of Keynesian animal spirits and the third element in equation (6) make our investment demand function somewhat different from those proposed in the past in some post-Keynesian contributions (Hein *et al.* 2008, Skott 2008). This term tries to capture the relevance of expected profitability for investment decisions in Palestine. High transaction costs, besides affecting current profitability, also reduce *expected* profitability (to be defined below), which in turn hampers entrepreneurs' willingness to invest. Low expected profitability is a fundamental factor behind poor capital formation in Palestine.

Let us define expected profitability as the normal profit rate r_n , i.e. the profit rate evaluated at the normal level of capacity use. There are at least two ways in which r_n influences Palestinian capital formation. First, expected profitability has an immediate positive effect on investment demand g^i . Other things being constant, the higher r_n is, the higher expected returns from domestic investments and firms' propensity to invest will be. Second, expected profitability influences investment decisions by altering the "profit-

gap” with respect to investments abroad. Due to the existing discrepancies between domestic expected profitability and that of foreign investments, most Palestinian people and financial institutions prefer to keep capital abroad rather than at home (World Bank 2008; Valensisi and Missaglia 2010). In equation (6), we assume parameter γ to represent the sensitiveness of Palestinian entrepreneurs to the profit gap and to depend positively on the ratio between r_n and the foreign exogenous profit rate r_f .

We now need to account for the foreign exchange dimension of the Palestinian economy. Equation (7) describes the Palestinian Balance of Payment equilibrium.

$$\underbrace{(EX - M)}_{\substack{TB \\ CA}} + \underbrace{\Omega}_{KA} = - \underbrace{S_f}_{KA} \quad (7)$$

In equation (7), EX and M respectively stand for Palestinian exports and imports, their difference being net exports or the trade balance account (TB). On the left-hand-side of equation (7), Ω represents foreign remittances and current transfers entering the current account balance (CA). On the right-hand-side, S_f are foreign savings, i.e. foreign aid targeting long-run economic development and international loans flowing into the Palestinian economy.

According to stylized fact 2, Palestine chronically records dramatic trade deficits, which derive from structural causes and are rooted in the backwardness of the domestic productive system. This factor has important short-term consequences: pathological Palestinian dependence on imported goods annuls demand *stimuli* as a support economic activity. Such stimuli are likely to increase imports rather than generate additional domestic production.

Although the trade deficit is very high at around 50% of domestic GDP, this feature does not seem to be a binding constraint on growth. International concerns about the political situation in Palestine play a fundamental role in stimulating generous aid, and thus relaxing the external constraint. In equation (7), Ω stands for the considerable foreign remittances and current transfers which yearly flow into Palestine and partially offset its enormous and structural trade deficit. S_f , in turn, represents foreign savings. Besides international loans to Palestinian public and private agents, they also consist of capital transfers aimed at supporting investment projects and the long-run economic

development of Palestine (Valensisi and Missaglia 2010).¹³ Abundant remittances, current and capital transfers as well as foreign loans all help to compensate to the huge Palestinian trade imbalance. It could become a major obstacle to economic development in the future, but for the time being it does not play a major role. In this model, we therefore neglect the external constraint.

4. The Short-run equilibrium and the effects of high transaction costs and market fragmentation

4.1. Short-run macroeconomic equilibrium

We define the short run as the time horizon in which agents' expectations are given and not subjected to revision. Entrepreneurs' animal spirits and the normal rate of capacity use are taken as exogenous. In order to set the conditions for macroeconomic equilibrium in Palestine, let us first take equation (7) and normalize both sides by the value of Palestinian capital stock. Following Taylor (1983), define $\Delta = (CA/P_tK)$ as the ratio between the current account balance and the domestic capital stock and, according to the Palestinian context, let us assume it is given and negative (i.e. $\Delta < 0$).

According to the National Accounting of open economies, domestic investments must be equal to available domestic savings minus the current account balance. In terms of our model we have:

$$P_t I = S - CA$$

Normalizing both sides of such a relationship for the value of the Palestinian capital stock ($P_t K$), we obtain:

¹³ After the signing of the Oslo Treaty in 1993, international financial support for the Palestinian National Authority (PNA) was mainly directed to fostering long-term investment projects (see Adam *et al.* 2004). The outbreak of the Second Intifada and the liquidity crisis following Hamas' electoral win in 2006, however, subsequently forced international aid to be temporally redirected towards current budget support. In the most recent years, according to the IMF (2007), capital transfers from abroad have returned to being a substantial source for investment financing in Palestine, and are expected to remain this.

$$g^i = g^S - \Delta \quad (8)$$

Equation (8) sets the condition for macroeconomic equilibrium in Palestine. Substituting equations (3), (5) and (6) in (8) and rearranging we can obtain the short-run equilibrium levels of capacity use u^* and of the capital accumulation g^* .

$$u^* = \frac{\rho + [\gamma(x_p - \omega pb) - \alpha]u_n + \Delta}{(sx_p - \alpha)} \quad (9)$$

$$g^* = sx_p u^* - \Delta \quad (10)$$

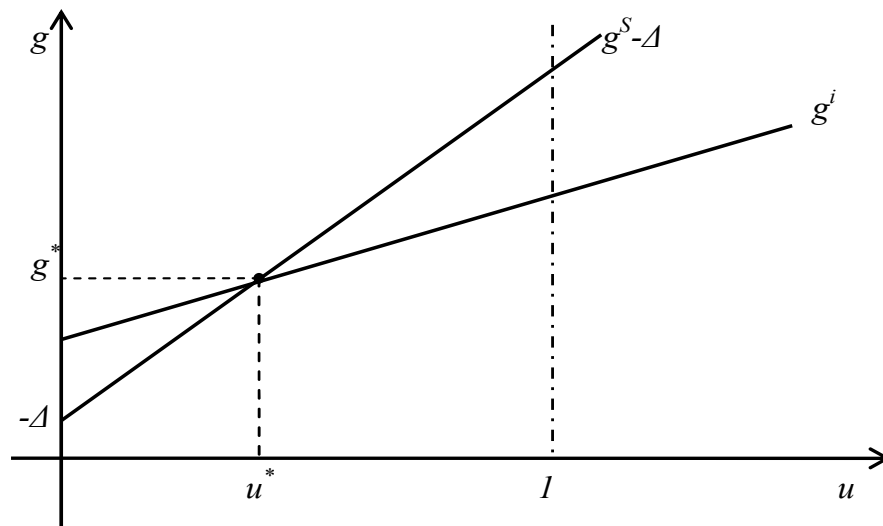
Equation (9) defines the short-run equilibrium level of capacity use u^* according to demand leakages and injections composing effective demand for Palestinian goods. At the numerator, u^* is positively influenced by entrepreneurs' animal spirits ρ as well as by the response of desired investments to domestic expected profitability, which in turn depends on the level of γ and the expected profit rate $r_n = (x_p - \omega pb)u_n$. According to our assumptions, sizeable Palestinian current account deficits (i.e. $\Delta < 0$), which derive from large and structural trade imbalances, depress economic activity and capacity use. A higher normal capacity use, by increasing the gap with current capacity, may discourage investment plans and lower economic activity through parameter α . At the denominator, we assume the well-known Keynesian stability condition $sx_p > \alpha$ to hold true, sx_p representing 'demand leakages' linked to savings whilst α gives the sensitiveness of the entrepreneurs to current capacity use and their response in terms of domestic investments. We therefore assume parameter α to be sufficiently small and domestic investments not to overreact to changes in current capacity use so as to ensure a stable short-run equilibrium.

Equation (10) resembles the well-known Cambridge equation in open economies; sx_p and Δ depend on domestic and foreign savings at disposal, while u^* affects capital formation from the demand side.

In **Figure 1** we represent the Palestinian short-run macroeconomic equilibrium by plotting the 'investment demand' function (6) and the right-hand-side of equation (8), here labelled as the 'savings supply' function. **Figure 1** shows the contractionary effects

of the Palestinian trade deficits on economic activity and capacity use. The trade balance, by affecting the current account balance, acts on the intercept of the 'savings supply' function, shifting it up or down. The Palestinian trade deficit, in particular, by generating a negative current account balance, gives rise to a *positive* intercept of the "savings supply" function and moves the "savings supply" function up. Given the investment demand function, both the equilibrium levels of capacity utilization and capital accumulation are much lower than they would be in an economy with positive trade and current accounts (a negative intercept in *Figure 1*).

Figure 1: The short-run equilibrium in Palestine.



Two mechanisms are at work. First, the Palestinian trade deficit stands out as a substantial 'demand leakage' that curbs economic activity. Huge foreign savings, aid and remittances, definitely alleviate the every-day life of the Palestinian people, by stimulating domestic consumption and public expenditures. However, they do not eradicate the structural productive weaknesses of the economy, namely the large dependence on imported goods, which transforms higher demand injections into higher

import flows and deeper trade deficits. Palestine risks becoming addicted to the economic pathologies which foreign aid can produce.

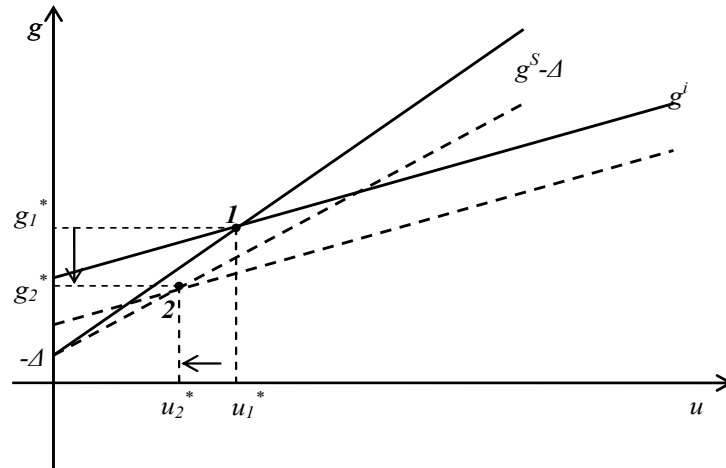
Quite apart from this structural weakness, our paper highlights another negative mechanism: foreign capital inflows stimulate domestic demand, which in principle could have a very positive impact on domestic production. However, high transaction costs and market fragmentation reduce the ‘effective demand’ for domestically produced goods.

4.2. Short-run effects of high transaction costs

In our model, rising transaction costs, i.e. higher parameter θ values, affect capacity utilization and capital accumulation in two different ways. First, rising transaction costs reduce the *effective* income to be distributed to productive inputs. According to equation (4), this reduces domestic savings so that, for any given level of the investment demand, capacity utilization u paradoxically increases to fill the savings gap between savings supply and investment demand. In the post-Keynesian rubric, this effect goes under the title of “cost paradox” (Lavoie 1992). Second, rising transaction costs reduce investment demand through other two main channels. On the one hand, rising transaction costs reduce expected profitability. Other things being equal, lower r_n values, discourage domestic entrepreneurs from enlarging existing plants, with the result that investment demand and capacity use decrease. On the other hand, the lower r_n is, the higher the profit gap between domestic and foreign investment opportunities will be. Domestic entrepreneurs prefer to invest their capital abroad; in equation (6), parameter γ decreases, so that an additional negative effect on investment demand and capacity utilization emerges.

In **Figure 2**, rising θ values reduce the slope of the ‘saving supply’ function because of the “the cost paradox”. Simultaneously, the ‘investment demand’ function shifts downward, due to the reduction in the normal profit rate r_n and in parameter γ . The final outcome is not clear. Quite reasonably, according to the evidence above, if the contraction of desired investments g^i is sufficiently large, an overall negative effect of increasing transaction costs on capacity use and capital formation emerges. The Palestinian economy moves from point 1 to point 2 in **Figure 2**.

Figure 2: The short-run effects of increasing transaction costs



It is possible to define a sufficient but not necessary condition for higher transaction costs to curtail current capacity use and capital formation. Let us take the short-run equilibrium value of the growth rate of the capital stock and derive it with respect to θ . From equation (6) we obtain:

$$\frac{\partial g^*}{\partial \theta} = \alpha(\partial u^* / \partial \theta) + \gamma(\partial r_n / \partial \theta) + (\partial \gamma / \partial \theta)r_n$$

Given that $(\partial r_n / \partial \theta)$ and $(\partial \gamma / \partial \theta)$ are both negative, attention can focus on the term $(\partial u^* / \partial \theta)$:

After mathematical passage and on the basis that $((\partial x_p / \partial \theta) / \xi) = -(1/(1 - \theta))$, we obtain:

$$|\hat{\gamma}_\theta| > -\frac{(\eta - \mu)\theta}{(\eta - \nu)(1 - \theta)} \quad (C.1)$$

with: $\eta = \gamma x_p u_n / \left\{ \rho + \left[\gamma(x_p - \omega p b) - \alpha \right] u_n - \Delta \right\}$;

$$\nu = \gamma \omega p b u_n / \left\{ \rho + \left[\gamma (x_p - \omega p b) - \alpha \right] u_n - \Delta \right\};$$

$$\mu = s x_p / (s x_p - \alpha);$$

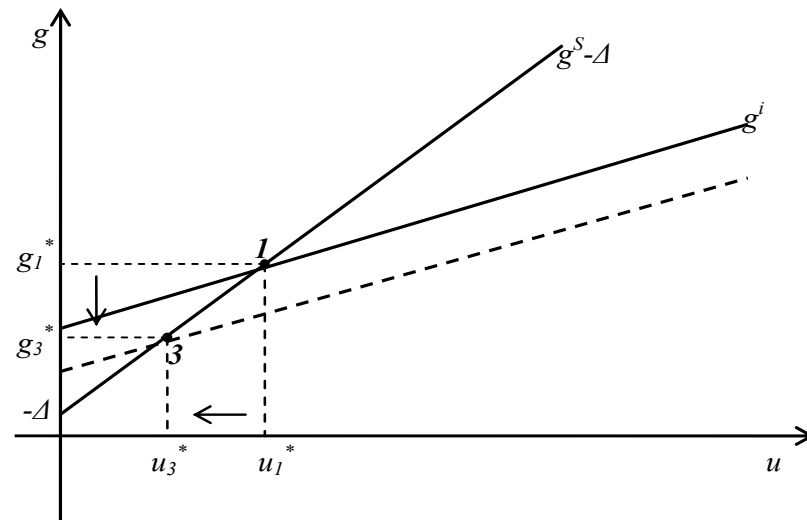
In condition (C.1), $\hat{\gamma}_\theta$ is the (negative) elasticity of parameter γ with respect to transaction costs θ . $\hat{\gamma}_\theta$ describes the intensiveness of Palestinian entrepreneurs' response to changes in transaction costs, that is to say the vigour of their willingness to invest at home, and therefore the intensiveness of the response to the gap between domestic and foreign expected profitability.

Condition (C.1) establishes the case for $(\partial u^* / \partial \theta)$ and $(\partial g^* / \partial \theta)$ being negative. At the denominator of condition (C.1), η is higher than ν in order to have positive profits inside the Palestinian economy. On the right-hand side of condition (C.1), η captures the negative effects that higher transaction costs induce on capacity use and capital accumulation by cutting expected profitability and therefore desired investments. In contrast, μ comes from the cost paradox. It represents decreasing savings availability and lower demand leakages, which in turn are due to lower net income out of transaction costs. Condition (C.1) undoubtedly applies if η is higher than μ and the left-hand-side of condition (C.1) proves to be negative. Alternatively, condition (C.1) still holds true if μ is higher than η but the right-hand-side is lower than the left-hand-side $|\hat{\gamma}_\theta|$.

4.3. Short-run effects of market fragmentation

Israeli security measures effectively divide Palestine into small enclaves and isolate Palestinian firms from foreign markets (World Bank 2007b). This produces an unambiguously negative impact on short-run market equilibrium. The decline in the expected market size leads to a decrease in parameter λ , which immediately hurts entrepreneurs' animal spirits ρ , thus discouraging investments. The final outcome will be a reduction in capacity utilization and capital accumulation. In **Figure 3**, the 'investment demand' function shifts downward; the Palestinian economy moves from point 1 to point 3, capacity utilization decreases from u_1^* to u_3^* and capital accumulation from g_1^* to g_3^* .

Figure 3: Short-run economic consequences of market fragmentation in Palestine.



Quite a consistent body of literature confirms these findings. Shaban (1999) states that “closure interrupts the production processes” (Shaban 1999, p. 58) and that Palestinian firms’ sales have declined steeply, ranging from 9 to 90% after the 1996 closures, “due to the impossibility to deliver goods to customers” (Shaban 1999, p. 59). Even further, he stresses that “the demand for investment has diminished under closure policy because of an overall decline in aggregate demand [and because] closures generally interrupt sales and increase operation costs, thus reducing overall profitability as well as the incentive for new investments” (Shaban 1999, p. 62). Akkaya *et al.* (2008) present an economic picture of Palestine close to that of Shaban: “closures disrupt trade flows, investments and domestic productions” (Akkaya *et al.* 2008, p. 2). Finally, UNCTAD (2009) evaluates that “the cumulative economic cost of six-years (2000 – 2005) of tight closure policy is around 8.4 billion dollars... twice the size of [Palestinian] GDP in 1999” (UNCTAD 2009, p. 7). More generally, it can be affirmed that “these conditions [i.e. the restrictions imposed on Palestinian firms] have intensified an economic and social stress, causing a sharp fall in real investments, unprecedented rates of unemployment and poverty and a rapid decline in all economic indicators” (UNCTAD, 2009, p. 1).

5. The long-run economic dynamics

5.1. The changing expectations of the entrepreneurs

The short-term analysis above takes agents' expectations as given, whereas in the long-term horizon economic actors can adjust expectations. We will see that high transaction costs and market fragmentation may trigger vicious processes in the way economic agents revise their expectations about the future. In the long run, the depressed investment climate emerging from low values of entrepreneurs' animal spirits ρ and of normal capacity use u_n may induce poor capital formation to become a pathological feature of Palestine.

Let us assume a medium/long-run perspective in which economic expectations are periodically revised, and entrepreneurs adjust their own animal spirits and normal capacity use. In an uncertain economic environment, the normal rate of capacity use is a convention that emerges from entrepreneurs' conjectures about the average degree of capacity use over the business cycle (see Lavoie 1992). The normal rate of capacity use may derive either from past experience or from strategic considerations about the desired level of spare capacity needed to prevent competitive entries. Depending on the interpretation chosen, u_n may follow differing adjustment mechanisms (see Dutt 1997 and Skott 2008).

In the case of Palestine, u_n is better conceived as a history-based convention. Palestine is a deeply unstable environment and the effective rate of capacity use may vary on the basis of conditions that are out of control of the domestic entrepreneurs. Therefore the normal rate at which domestic firms expect to work may emerge from the revision of past experience rather than from strategic decisions. In line with this perspective, equation (11) assumes u_n to evolve according to an *adaptive* mechanism in which Palestinian firms revise their expected level of capacity use u_n on the base of the existing gap with respect to the current level of capacity use u . Following Lavoie (1995), Dutt (1997) and Taylor (2004) we assume:

$$\dot{u}_n = \psi(u - u_n) = l(\rho, u_n) \quad (11)$$

According to equation (11), if u is higher than u_n , economic agents increase their 'expected degree of capacity use' and $l(\rho, u_n)$ is positive. If current capacity use is lower

than the normal one, Palestinian firms revise their 'expected degree of capacity use' downwards at the adjustment speed ψ .

As to entrepreneurs animal spirits, given the "natural" growth rate of market size from population dynamics, adjustments to expected sales changes and to entrepreneurs' animal spirits result from changes in expected market share sh^e and in the surrounding political/economic climate. This is formally stated in equation (12):

$$\dot{\rho} = z(u(u_n, \rho)) - \zeta(\theta, \lambda)\rho = m(\rho, u_n) \quad (12)$$

With $z' > 0$ and $z'' > 0$ if $u(u_n) < \bar{u}(\bar{u}_n)$;

$$z'' < 0 \text{ if } u(u_n) > \bar{u}(\bar{u}_n)$$

Let us examine this relationship. There is widespread consensus among economists that strong positive links exist between economic activity, technological improvements, and the evolution of firms' competitiveness and of their market shares (see Verspagen 2005). Technological improvements based on increasing experience and deeper technological knowledge "occur as a by-product of productive activity" (see Rosenberg 1982). This is the case of "learning-by-doing" and "learning-by-using" as well as of the economy-wide diffusion of the improvements deriving from them. As to learning-by-doing, given K , the higher u is, the higher total output and the ability to accumulate technological knowledge by producing goods in larger quantity will be. As to "learning-by-using", the higher u is, the more intensively we will use the existing capital goods and the faster we will learn to improve them. Last but not least, "when learning takes place, the innovation is improved and adapted to different environments, thus making it more attractive to a wider set of adopters" (Hall 2005, p. 470). Therefore, technological improvements and the accumulation of technological knowledge appear to be the ultimate sources of increasing competitiveness and of rising market shares.

These mechanisms could be particularly effective in Palestine's economy, in which there is large scope for introducing technological progress and improving the competitiveness of domestic firms (see World Bank 2007a). A higher capacity use u will make it more likely that Palestinian firms introduce technological improvements, work at more efficient production scales, and thus increase their market share. In equation (12) we

assume a positive relationship between the dynamics of entrepreneurs' animal spirits, the evolution of expected Palestinian market share and capacity utilization u . If Palestinian entrepreneurs expect market shares to increase and sale flows to grow faster they will be convinced to expand production capacity and to revise their animal spirits upward.¹⁴

More precisely, we assume such a relation to follow an S-shaped curve (see **Figure 4**). At low-medium level of capacity use, with $u < \bar{u}$, increasing capacity use may give momentum to technological improvements, to domestic firms' competitiveness and to the connected economic expectations. At more advanced stages, when $u > \bar{u}$, the scope for learning processes to carry out further improvements may narrow, so that the link between u and $m(\rho, u_n)$ progressively runs out and the process of technological improvements and rising expectations meets an upper ceiling.¹⁵

The second element in equation (12) establishes a negative relationship between adjustments in entrepreneurs' animal spirits and their current level. This is a simple self-stabilizing process in the expectations about the growth rates of market shares and future sales. The higher sh^e and ρ are, the lower the scope will be for further increases in Palestinian expected sales' growth rate and entrepreneurs' animal spirits. In equation (12), this negative relationship between ρ and its own dynamics is mediated by parameter ς , which captures what Fontana and Marchionatti (2007) label the "political atmosphere" component in the formation of entrepreneurs' animal spirits. Of course, these factors are extremely relevant in Palestine, given that stable improvements in the conditions on the ground and in the political situation can have deep repercussions on the economic sphere. They might ease market conditions, reduce transaction costs and allow Palestinian goods to move freely inside and outside Palestine, thus leading Palestinian firms to permanently improve their expectations about future sales and scale up investment projects.

We assume parameter ς to depend positively on transaction costs θ and negatively on the degree of market integration λ . *Ceteris paribus*, higher (lower) transaction costs and market fragmentation induce the Palestinian investment climate to deteriorate (improve). This leads Palestinian firms to revise their expectations; they will perceive

¹⁴ Here we do not explicitly model technological progress, but we stress the relationship between the scope for technological progress and entrepreneurs' expectations. Palestinian entrepreneurs will effectively exploit technological opportunities only if they can believe in improving market sales in the long run.

¹⁵ This picture is close to that presented by Sachs *et al.* (2004) on Africa's development, but the theoretical framework is completely different. In this model, we follow a demand-led approach which rests on cumulative mechanisms between lack of *effective* demand, depressed economic activity and poor capital accumulation.

current animal spirits, ρ , to be too optimistic(pessimistic). In equation (12), parameter ς will increase (decrease), so that Palestinian firms will opportunely downward (upward) adjust their expectations about future sale dynamics.

5.2. Possible long-run scenarios in an expectation-driven Palestinian economy

In order to analyze the long-run dynamics of Palestine, let us consider the two loci for constant u_n and ρ values. From equation (11), Substituting the short-run equilibrium value for current capacity use u^* in equation (11), the condition for u_n to be stable reads:

$$F_{l=0} = \frac{\rho + [\gamma(x_p - \omega pb) - \alpha]u_n - \Delta}{(sx_p - \alpha)} - u_n = 0 \quad (13)$$

According to the implicit function theorem, we obtain:

$$\left. \frac{\partial \rho}{\partial u_n} \right|_{l=0} = sx_p - \gamma[(x_p - \omega pb) + \hat{\gamma}_{r_n}] > 0 \text{ if } sx_p > \gamma[(x_p - \omega pb) + \hat{\gamma}_{r_n}] \quad (C.2)$$

Where $\hat{\gamma}_{r_n}$ is the positive elasticity of parameter γ with respect to the normal profit rate r_n . Again, this term gives an idea on the intensity with which domestic entrepreneurs want to scale up investments at home when domestic expected profitability improves in comparison with foreign expected profitability.

The slope of equation (13) can be either positive or negative depending on the effects normal capacity use has on its own dynamics. Given the positive effect that ρ undoubtedly has on u and $l(\rho, u_n)$, should normal capacity use present stable dynamics, the slope of equation (13) will be positive. Such a scenario holds true if condition (C.2) applies. Alternatively, should higher values of u_n lead to further increases in normal capacity use and generate a destabilizing process, the slope of equation (13) will turn out to be negative. This happens when condition (C.2) is not met.

As to the locus for steady values of ρ , we have:

$$F_{m=0} = z \left(\frac{\rho + [\gamma(x_p - \omega pb) - \alpha]u_n - \Delta}{sx_p - \alpha} \right) - \zeta\rho = 0 \quad (14)$$

On the base of the implicit function theorem, we get:

$$\left. \frac{\partial \rho}{\partial u_n} \right|_{m=0} = - \frac{z' \left\{ \frac{\gamma[(x_p - \omega pb) + \hat{\gamma}_{r_n}] - \alpha}{(sx_p - \alpha)} \right\}}{\frac{z' - \zeta(sx_p - \alpha)}{(sx_p - \alpha)}} = - \frac{z' \{ \gamma[(x_p - \omega pb) + \hat{\gamma}_{r_n}] - \alpha \}}{z' - \zeta(sx_p - \alpha)} \quad (15)$$

Several possibilities arise. The signs of both numerator and denominator are uncertain, and the denominator's sign may vary depending on (z') . In order to keep things as simple as possible, we here restrict our attention to the case of an upward-sloping S-shaped locus for $m(\rho, u_n)=0$. In particular, we assume a positive effect of u_n on current capacity use u and therefore on $\dot{\rho}$. Moreover, we imagine entrepreneurs' animal spirits as not following an explosive dynamics, so that there is an overall negative relationship between ρ and its own adjustment process. Mathematically, we have:

$$\gamma[(x_p - \omega pb) + \hat{\gamma}_{r_n}] > \alpha \quad (C.3)$$

and

$$z' - \zeta(sx_p - \alpha) < 0 \quad (C.4)$$

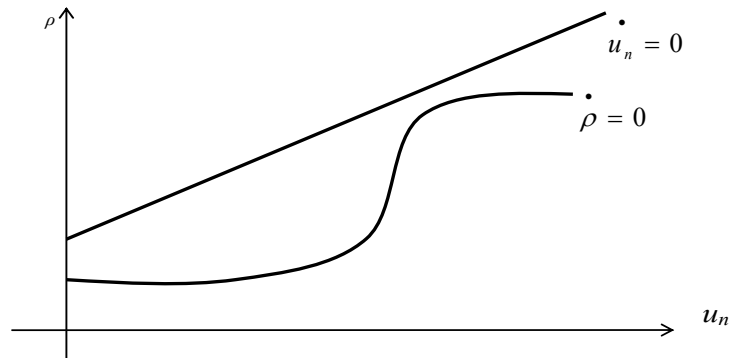
Condition (C.3), simply states that the numerator of equation (15) is positive. Its fulfilment is empirically grounded on the great influence that expected profitability exerts in stimulating investment projects in Palestine; this influence is caught by term $\hat{\gamma}_{r_n}$ in condition (C.3). Higher u_n values bid up domestic expected profitability and reduce the

profit-gap with investments abroad. This stimulates Palestinian firms to increase domestic investments. If such an effect is sufficiently strong, i.e. term $\hat{\gamma}_{r_n}$ is sufficiently high, economic activity and capacity use will increase. Entrepreneurs will revise their animal spirits upward thanks to better expectations on technological improvements and future sale dynamics.

Condition (C.4) ensures Harrodian instability, i.e. explosive dynamics in the evolution of entrepreneurs animal spirits ρ , will not take place. Entrepreneurs’ animal spirits ρ , on the contrary, follow a self-stabilizing process. On the one hand, condition (C.4) is grounded on previous contributions which show Harrodian instability either not as empirically relevant or as being tamed by several stabilizing mechanisms (Lavoie 1995; Hein, Lavoie and van Treek 2008). On the other hand, and perhaps more interestingly, fulfilment of condition (C.4) may cause multiple equilibria to describe long-run development in Palestine.

On the base of this analysis, many different scenarios can describe the long-run economic development of Palestine. First, the two loci for ρ and u_n stable values may not intersect, so that no long-run equilibria exist. This is portrayed in **Figure 4** below.

Figure 4: The case for no long-run equilibria



Second, a unique-equilibrium scenario may apply in which differing stability properties depend on the slope of the locus for $l(\rho, u_n) = 0$ and on its intersection with the locus for $m(\rho, u_n) = 0$. In **Figure 5**, we represent a downward-sloping locus for $l(\rho, u_n) = 0$

(condition C.2 does not hold true) and a unique saddle-path long-run equilibrium in Palestine. In **Figure 6**, we contrastingly portray an upward-sloping locus for $l(\rho, u_n) = 0$ (condition C.2 holds true) that intersects the locus for $m(\rho, u_n) = 0$ in a unique stable equilibrium point.

Figure 5: A unique long-run equilibrium: the saddle-path equilibrium.

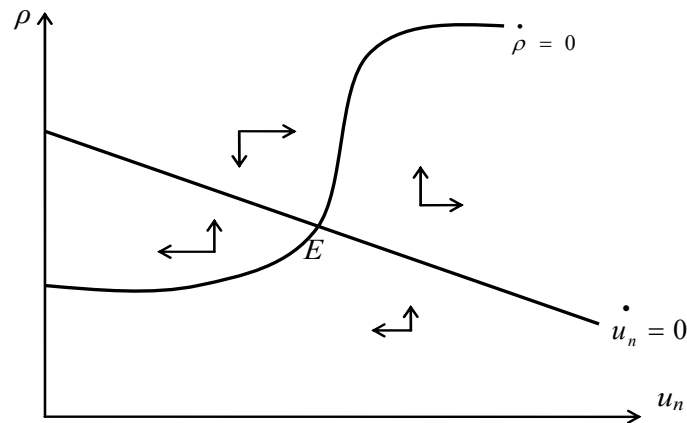
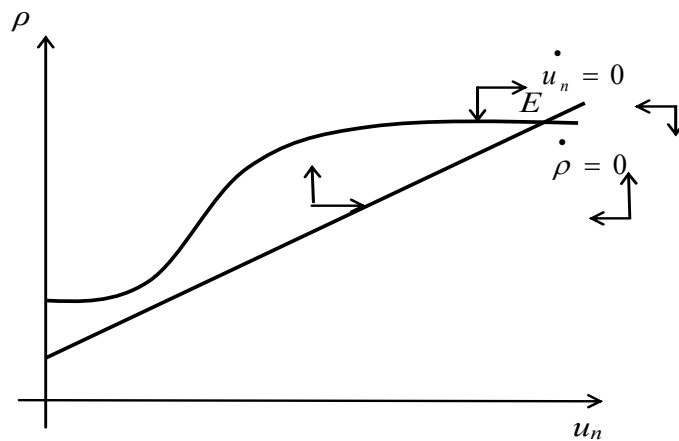


Figure 6: A unique long-run stable equilibrium.



Finally, different multiple equilibria may emerge should the locus for $l(\rho, u_n) = 0$ slope positively (condition (C.2) be met so that $sx_p > \gamma \left[(x_p - \omega pb) + \hat{\gamma}_{r_n} \right] > \alpha$) and intersect the locus for $m(\rho, u_n) = 0$ twice or more. From our point of view, this is by far the most important situation because it shows a wide range of opportunities and constraints on Palestinian economy development. We treat in details the case for multiple long-run equilibria in the next section.

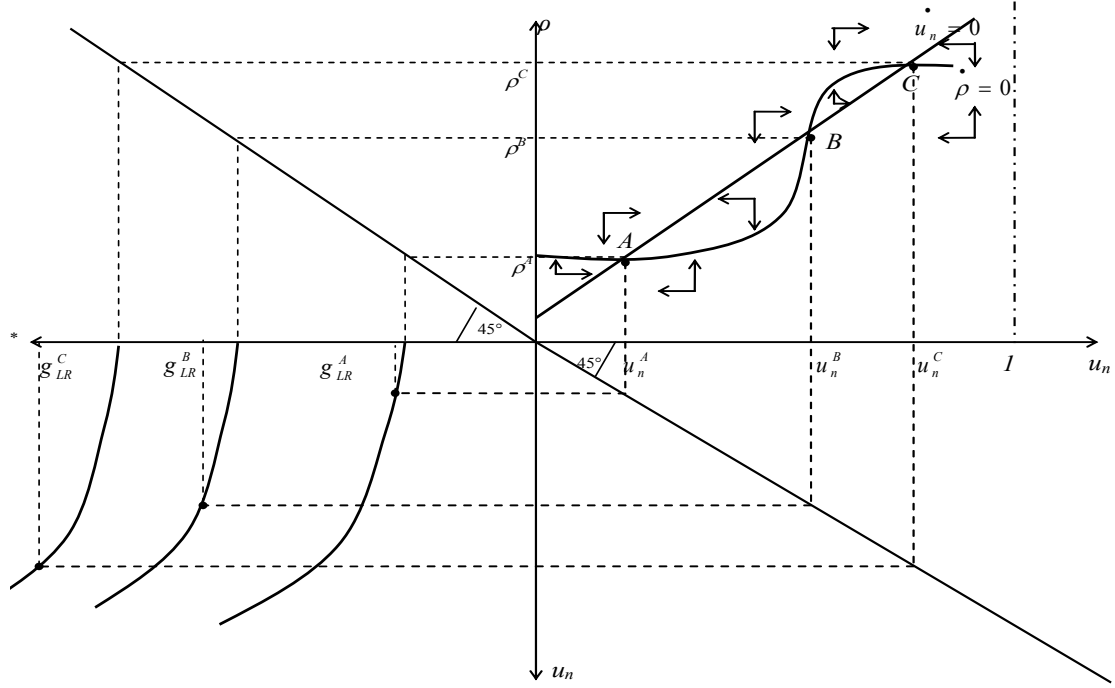
5.3. Economic restrictions, multiple equilibria and the Palestinian low-growth trap

Let us assume the two loci for $m(\rho, u_n) = 0$ and $l(\rho, u_n) = 0$ to intersect thrice so that three equilibria exist in the north-east quadrant of **Figure 7**. Points *A* and *C* are two locally stable equilibria, point *B* is a locally unstable saddle-path equilibrium. At any equilibrium point, economic expectations are confirmed and undergo no further revision, entrepreneurs' animal spirits ρ assume a constant value, and current capacity use u gets equal to normal capacity use u_n . Equilibrium *A* features persistently low values of both ρ and u_n . Equilibrium *C* shows sustained economic activity with optimistic entrepreneurs' animal spirits. Equilibrium *B* lies in the middle. Accordingly, three different steady state growth paths of capital stock arise. Let us substitute the long-run ρ, u_n and $\gamma(r_n(u_n))$ values in equation (6) :

$$g_{LR}^i = \rho^{LR} + \gamma^{LR} r_n^{LR} \quad (6LR)$$

$$\text{With: } r_n^{LR} = (x_p - \omega pb) u_n^{LR} \text{ and } \gamma^{LR} = \gamma \left(\frac{r_n^{LR}(u_n^{LR})}{r_f} \right)$$

where ρ^{LR} , r_n^{LR} , u_n^{LR} and γ^{LR} are the long-run values assumed by entrepreneurs' animal spirits, domestic expected profitability, normal capacity use and domestic investment sensitivity to the profit gap.

Figure 7: Multiple long-run equilibria and alternative development paths in Palestine.

According to equation (6LR), high levels of capacity use $u^{LR} (=u_n^{LR})$ increase long-run expected profitability and reduce the profit gap with respect to foreign investments. Both r_n^{LR} and γ^{LR} increase in equation (6LR) and capital accumulation follows closely. Optimistic long-run animal spirits, i.e. high ρ^{LR} values, further raise the steady state growth rate of capital stock. This fact emerges clearly in the south-west quadrant of **Figure 7**, where we plot equation (6LR) and the long-run growth paths arising from equilibria A , B and C . The accumulation path associated with point C (g_{LR}^C) is faster than capital accumulation in point B (g_{LR}^B), which in turn outstrips the capital stock growth rate connected to equilibrium A (g_{LR}^A): $g_{LR}^C > g_{LR}^B > g_{LR}^A$.

In Palestine, high transaction costs and market fragmentation curb economic activity, reduce capacity utilization and frustrate entrepreneurs' animal spirits. This gloomy scenario does not appear to be a temporary condition. On the contrary, it appears to be a well-established feature of the Palestinian economy. Low levels of current capacity use and chronically depressed entrepreneurs' animal spirits generate perverse cycles in the

adjustment process of economic expectations, so that Palestinian development is permanently frustrated.

In terms of **Figure 7**, Palestine appears stuck in the low equilibrium point A. According to equation (11), low levels of current capacity use lead Palestinian firms to downward revise their opinions about the normal level of capacity use and to keep it unusually low, quite probably below u_n^B . Moreover, from equation (12), economic stagnation negatively affects the way in which Palestinian entrepreneurs' adjust their animal spirits. They are likely to be lower than ρ^B , due to the lack of opportunities to introduce technological changes, to the enormous difficulties to gain market shares and to the impossibility of significant increases in sales. With these vicious mechanisms at work, Palestine ends up, and remains locked in, the *low-growth trap* equilibrium A. Palestinian firms' current and normal capacity use persist to be abnormally low. Palestine's long-run growth potential and capital accumulation is irremediably curtailed to the disappointing level g_{LR}^A . This *low-growth trap* closely resembles the long-run scenario envisaged by Shaban (1999): without a dramatic breakthrough in the Israeli-Palestinian relationship, "border closures [will] have a detrimental impact on long-run economic development by instigating lower levels of investments and reduced efficiency of investment" (Shaban 1999, p. 61).

6. Policy measures to unleash Palestinian growth potential

With Palestine stuck in the low-growth equilibrium A, economic policy measures should aim to unleash Palestinian growth potential. A first and immediate measure might aim to provide Palestine with huge financial resources, a sort of Marshall Plan for Palestine. Strong and prolonged financial support, it might be argued, might stimulate economic activity so as to induce domestic agents to upward revise their expectations, to increase normal capacity use and entrepreneurs' animal spirits so that they exceed their respective threshold levels u_n^B and ρ^B (see **Figure 7**), and to generate virtuous mechanisms that enhance expectations, economic growth and the speed of capital accumulation.

However, a strategy of this kind may prove to be useless and ineffective, both in the short and in the long run. Palestine already benefits from considerable external support, but the impact of this support on economic development has been extremely weak so far. Of course, external financing has improved Palestinian daily life standards, which is

obviously important; however, it has not led to faster capital accumulation, nor has it eliminated the structural weaknesses of the Palestinian productive system. With high transaction costs and market fragmentation still entrenched, Palestinian firms will probably continue to be uncompetitive and reluctant to invest. Financial support will mostly result in worsening trade deficits, without stimulating demand for domestic products; economic expectations will barely improve and existing constraints to growth will not be removed. Palestine might experience a perverse Dutch disease effect, which will further deteriorate the competitiveness of Palestinian firms and lower Palestinian growth potential.

The above considerations do not imply that financial support is not needed, but it is clearly not enough and it is not the crucial element to support the long run development of the Palestinian economy. Notwithstanding all its problems, Palestine has a high growth potential. Before the second intifada, households achieved good savings ratio, Palestinian firms were close to large and rich markets and disposed of a well-educated labour force (Dessus 2004; World Bank 2006c). Therefore, the most promising development strategy would be to reduce transaction costs, to remove market segmentation and to let Palestinian firms to do their business freely.

Suppose that substantial progress in the Israeli-Palestinian peace process removed market fragmentation and cut transaction costs. Lower θ values would increase current capacity use u . The same effect would result from increasing market integration, a higher level of λ . Both effects would stimulate capital accumulation.

These immediate consequences could bring about much more important long-lasting changes, by influencing the adjustment process of entrepreneurs' expectations. Increasing current capacity use would induce Palestinian firms to upward revise their conjectures about u_n . Lower transaction costs and market fragmentation would allow them to serve domestic and foreign markets better. Expected sale dynamics and animal spirits would scale up; if sufficiently strong, these facts could persistently raise long-run capital formation.

Analytically, take the two loci for $l(\rho, u_n)=0$ and $m(\rho, u_n)=0$ and differentiate them with respect to θ .¹⁶

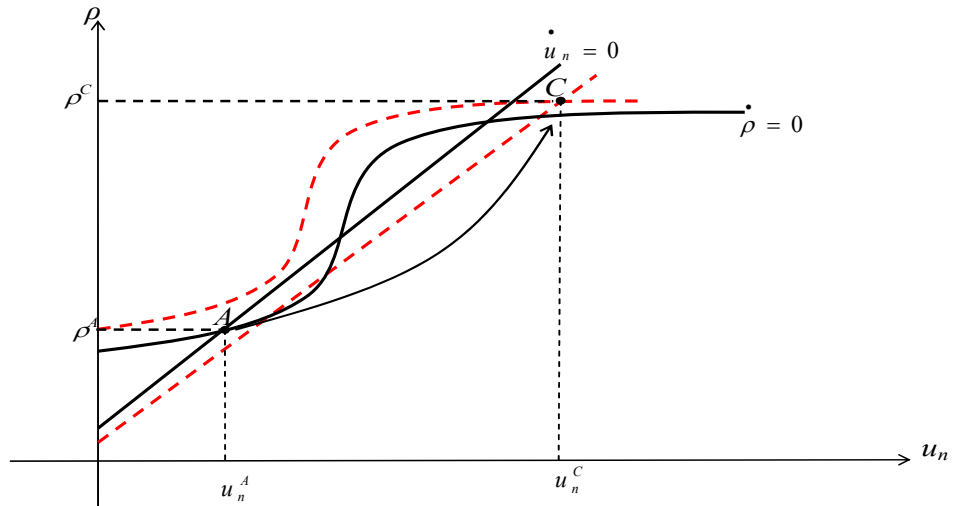
¹⁶ On the base of the short-run analysis above, our findings do not change much if we consider the long-run effects of market integration, i.e. an increase in parameter λ .

$$\left. \frac{\partial u_n}{\partial \theta} \right|_{l(\rho, u_n)=0} = -\frac{\partial l / \partial \theta}{\partial l / \partial u_n} = -\frac{(\partial l / \partial u^*)(\partial u^* / \partial \theta)}{(\partial l / \partial u_n)} < 0$$

$$\left. \frac{\partial u_n}{\partial \theta} \right|_{m(\rho, u_n)=0} = -\frac{\partial m / \partial \theta}{\partial m / \partial u_n} = -\frac{z'(\partial u^* / \partial \theta) - (\partial \zeta / \partial \theta)\rho}{z'(\partial u^* / \partial u_n)} < 0$$

In **Figure 8**, the locus for $\dot{u}_n = 0$ moves downward. Given the positive effects of lower transaction costs on current capacity use u^* , an increase in u_n is required to maintain $l(\rho, u_n)$ equal to zero. At the same time, the locus for $m(\rho, u_n)=0$ moves up. Decreasing transaction costs and higher current capacity use favour technological improvements, Palestinian firms’ competitiveness and their expectations about future sales. According to equation (12), a reduction in normal capacity use is needed to counterbalance more optimistic entrepreneurial animal spirits and to keep ρ constant.

Figure 8: Long-run effects of restriction removal and unleashed Palestinian growth potential



If the removal of market fragmentation and the reduction in transaction costs are strong and convincing, the Palestinian low-growth trap may simply disappear. Mounting investments from confident entrepreneurs may sustain economic activity and capacity use, which in turn would stimulate entrepreneurs' confidence and their propensity to invest. In **Figure 8**, Palestine may autonomously move towards the high, stable and unique equilibrium C , in which economic growth would be much higher than the disappointing results recorded so far, and capital accumulation would outstrip the mere 15% (of domestic GDP) averaged between 1994 and 2007. Palestine would enter a sustained, steady state, long-run growth path.

Two important provisos should temper this scenario. First, several problems may still persist, above all the structural Palestinian trade deficit, which could give rise to a foreign exchange constraint. Nevertheless, fast and sustained capital accumulation might generate structural change, hence Palestinian dependence on imported goods might be reduced.¹⁷

Second, it is important to remark that in the long-run perspective there is a major difference between peace talks and the establishment of an independent Palestinian State with complete economic sovereignty. In the long-run scenario, Palestinian entrepreneurs will improve their expectations about future sale changes only if they are fully convinced that: a) high transaction costs will not be reintroduced; b) the larger and more integrated markets they can serve will endure. There have already been too many instances in which long run expectations about a positive solution to the conflict have been disappointed. On the other hand, it must be remembered that there has been a period in which the political climate and entrepreneurs' expectations seemed to become definitely more optimistic. Following the Oslo agreement and the idea that Palestinian sovereignty would have been gradually extended from zone A to zones B and C, some notable investments took place in Palestine, in particular in the industrial zone of the Gaza Strip.

The two main conditions for Palestinian economic development are contrastingly close to hard and elusive. On the one hand, stable market integration and reduction in transaction costs are cheap pro-growth interventions which would not require generous

¹⁷ Structural changes in Palestine may imply an increasing share of domestic capital goods to be produced at home. This change would reduce the price P_I of the investment good (provided that \bar{P} is lower than P_F) and increase the relative price p , which in Palestine resembles the 'terms of trade', due to the lack of an exchange rate. According to equation (3), this feature would increase domestic profits and further stimulate domestic investments. Moreover, structural changes may be a source of additional demand injections for home-produced goods.

disbursements of financial resources. On the other hand, the political conditions required for the introduction of these changes are remote, possibly too much so.

7. Conclusions

This paper draws two main conclusions about the Palestinian economy.

First, Palestine is characterized by high transaction costs which reduce expected profitability, and market fragmentation considerably limits market size and sales expectations for Palestinian firms. In the short-run these factors discourage entrepreneurs from investing, with the result that Palestinian capital formation never takes off. An investment-constrained economy emerges. Poor investment demand causes extremely low capacity utilization values, slightly above 50% on average. Capacity utilization turns is further curbed by an enormous trade deficit and by Palestinian structural dependence on imported goods.

Second, in the long run, low levels of capacity utilization and capital formation have become pathological features of the Palestinian economy. A vicious self-reinforcing process based on frustrated economic activity and pessimistic adjustments in entrepreneurs expectations may give rise to a long-run low-growth trap. Low levels of economic activity and capacity utilization may induce domestic agents to downward revise their conjectures about normal capacity use and expected profitability. These conditions discourage Palestinian firms from introducing technological progress and deny them opportunities to exploit the scale externalities of larger markets. High transaction costs and small fragmented markets lead to permanent reduction in Palestinian long-run growth potential.

This paper highlights some of the conditions required to overcome the current, dismal circumstances and to unleash the growth potential of the Palestinian economy.

In the short-run, peace talks and some progress on the situation on the ground may help to increase current capacity utilization, u , and the growth rate of capital accumulation, g , and hence might improve the economic climate and the living conditions of the Palestinian people. However, the process of durable economic development can be triggered only if the short-run improvements are sufficiently strong; this means a drastic reduction in transaction cost, a marked decrease in θ , a substantial expansion in the markets accessible to Palestinian firms, and a sizeable increase in λ . Economic growth

can be sustained in the long run only if the prospects of higher future sales are permanently incorporated into the formation process of entrepreneurs' expectations about future sales. This implies that entrepreneurs must be convinced that the lower transaction costs and the larger market size are permanent changes.¹⁸

Improvements in Israeli-Palestinian peace talks may reduce transaction costs and favour economic integration and may even induce a more optimistic investment climate. However, Palestine is already used to temporary improvements; the removal of a ten check-points, although encouraging, will not eliminate the low-growth trap Palestine is stuck in. In the north-east quadrant of *Figure 7*, the low-growth trap could move slightly to the right but it would not disappear. A few check-point removals will not *per se* give rise to the structural shifts, the radical changes and the sustained development process described in *Figure 8*. These radical changes can only derive from a permanent improvement in the way in which entrepreneurs adapt their sale expectations; they need to foresee a sustained process of market expansion which can lead to recurring expansion of their future sales. To use a somewhat symbolic expression: Palestinian entrepreneurs must 'see larger and rising markets', which will justify increases in existing productive capacity.

A permanent improvement in the investment climate is unlikely without the creation of an independent Palestinian State that enjoys complete economic sovereignty; a state which could give a sense of permanence to the larger market. An independent state would also negotiate trade agreements with its neighbours and run independent fiscal, monetary and industrial policies. Asian growth stories illustrate the importance of multi-faceted independence to the achievement of strong and sustained economic growth. A Palestinian state may be a necessary, though not sufficient, condition to move out of a low growth equilibrium, characterized by poor investment opportunities, and to achieve higher growth rates of capital accumulation.

¹⁸ Of course the same applies to foreign direct investments.

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Section 3: Growth and Trade

Growth Diagnostic: The Case of Palestine

*Chiara Marazzi, Gianni Vaggi and Angelica Vitali**

Abstract: Growth Diagnostics, GD, by Ricardo Hausmann, Dani Rodrik, and Andrés Velasco represents a useful and practical approach in order to identify the most binding constraints to explain low economic growth. According to the authors the full list of specific economic constraints is unknowable ex-ante, and as a second best solution it is worth trying to identify the feature which represents the major obstacle to the unleashing of the growth potential of a country.

This paper has two major aims. In the first part we extend the GD method by concentrating on those constraints which appear to be on the ‘market/demand side’ of the determinants of economic growth and which are not fully examined in the original GD. We present a modified version of GD which widens the ‘decision tree’ by including a new diagnostics branch represented by Demand-Side variables. This helps to capture the influence of market conditions on the profitability and investments. In the second part of the paper we apply the new decision tree to Palestine. The original GD would not allow identifying the most binding constraint to economic growth in Palestine. In fact Demand-Side elements are fundamentals to explain the constraints to Palestinian development. In particular Palestine suffers from the small dimension of the local markets and from the impossibility to effectively integrate the different markets. Therefore Palestinian firms do not grow and do not reach a size which could make them competitive.

Keywords: Palestine, market size, investments constraints.

JEL Classification: O53, O11, E12.

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1. Growth Diagnostics: an improvement

1.1. The Hausmann, Rodrik and Velasco approach

The Growth Diagnostics, GD, methodology has been first introduced by Ricardo Hausmann, Dani Rodrik, and Andrés Velasco, HRV, in 2004 and since then has received a growing attention. GD is an example of ‘clinical reasoning’ that helps to identify the causes of the economic stagnation of a country. The authors recognize that many different facts and features are behind the poor growth performances of a country, but at the same time it is difficult to intervene on all these constraints at the same time. Given the partial knowledge of the situation and the limited instruments and resources available it seems wiser for the policy makers to concentrate on the few causes which can be recognised as being more binding.

But how to identify them? In order to implement this analysis HRV suggest a specific tool, which they call a ‘decision tree’ (shown in *Figure 1*). By moving along the branches of this decision tree from bottom to top, it is possible to recognize the most-binding constraint to economic growth. This method helps to examine the different possible impediments to growth, from the high cost of finance, to government and market failures, to low profitability of investments. Many of these elements may be a constraint to growth in different countries, and the ‘decision tree’ provides a method to pinpoint the most relevant one.

Theoretically GD is a Second-Best approach to the problem of the policymaker, who wants to maximize a constrained social welfare function (indicated by w); it is a non-linear optimisation problem. In order to solve this problem, the authors adopt the partial derivative of the Lagrangian Function, written as follow:

$$\frac{dw}{d\tau_j} = -\lambda_j + \sum_i \lambda_i \frac{\partial [\mu_i^s(\tau, \dots) - \mu_i^p(\tau, \dots)]}{\partial \tau_j}$$

The terms $\mu_i^s(\tau, \dots)$ and $\mu_i^p(\tau, \dots)$ are the net marginal valuations of activity i by society and by private agents respectively;¹ $\tau = \{\tau_1, \tau_2, \dots, \tau_k\}$ is the set of distortions and

¹ In Hausmann, Rodrik and Velasco (2004) net marginal valuations depend not only on the set of distortions but also on consumption, labour supply, etc.

$\lambda_i \geq 0, i = \{1, 2, 3, \dots, k\}$ are the Lagrangian multipliers corresponding to the constraints associated with each of the distortions. The first term of this equation represents the direct effect of the marginal reduction of the distortion in activity j while the second term represents the interaction effects across distorted margins. Because of the difficulty to discover *ex-ante* all these interaction effects, the Diagnostics approach focuses on the size of the direct effects; the idea behind the strategy is that the policy reforms should aim at the removal of the constraints with the larger direct effect.

This is the core of the Diagnostics theoretical framework and it remains the same in all the three major versions presented by HRV, but GD evolves through time. In particular in the 2004 version the authors focus on the general problem of low economic growth, while in the 2005/2008 version they centre the analysis on the problem of low investment.

In the 2004 version the constrained balanced growth path is described by the following equation:

$$\frac{\dot{c}_t}{c_t} = \frac{\dot{k}_t}{k_t} = \frac{r(1-\theta)(1-\psi)p - \rho}{1-\beta} \quad (1)$$

where, c is consumption, k is the stock of capital, r is the rate of return on capital, θ indicates the negative externalities (a higher θ means a higher distortion), ψ represents all the distortive types of taxation, p is the probability that profits are available for investors, ρ is the foreign interest rate, and β summarizes the condition of access to capital markets.

In the 2005/2008 version the relevant equation is:

$$\frac{\dot{c}_t}{c_t} = \frac{\dot{k}_t}{k_t} = \sigma [r(1-\tau) - \rho] \quad (2)$$

where σ represent the intertemporal elasticity in consumption.

In both expressions r depends on total factor productivity, α , externalities θ , and availability of complementary factors of production x :

$$r = r(\alpha, \theta, x) \quad (3)$$

The two versions of the constrained balanced growth path are essentially the same, but the second one, equation (2), is less articulated because all the distortions that may affect private return on investment are summarised in the single term τ . In this paper we prefer to use the 2004 version of GD (equation (1)), which gives more emphasis to the causes which may affect profitability and investments. Moreover this version better corresponds to the different branches of the decision tree of *Figure 1*, and it is easier to use in empirical applications.

We will not consider the long-run equilibrium condition $\frac{d\alpha}{dt} = \frac{d\theta}{dt}$. Notwithstanding its origin the GD methodology seems to be largely independent from this specific theoretical approach. We will focus on capital accumulation only and on the specific problem of the influence of market and demand on private investment; in particular we want to highlight the main economic causes why investments are low.²

1.2. The critique by Rodríguez and the role of institutions

Before introducing the market/demand side variables we briefly discuss some problems that have already emerged in the GD debate.

In the opinion of Francisco Rodríguez³ the main problem of the Diagnostics Methodology is the implicit assumption that is possible to relax only one constraint at time. However, because of the interconnection between the different economic variables and because of the positive and negative externalities according to Rodríguez the removal of a single constraint does not guarantee positive results.

The real problem is that the decisional process is totally static and does not explicitly consider all the Second-Best solutions which can be adopted in different instants of time. According to Rodríguez, in order to reach the Second-Best optimum solution it is necessary to follow a more complex methodology, in which it should be possible to act at the same time on two or more constraints. Moreover Rodríguez

² Hausmann has recently argued (2009) that “in HRV asset accumulation is seen as an interesting area to search for symptoms of a problem because problems get reflected in investment behaviour, independent of the relative importance of such behaviour for growth” (p. 23).

³ F. Rodríguez (2005).

highlights the importance of the institutional framework which must be strengthened also in the short-run.

Let us comment on the problem of institutions in the GD framework. In the decision tree the role of institutions appears only in the “low appropriability” branch. This is a very limited picture of the function that institutions play in a modern economy. The institutional framework must provide the individuals with the right incentives to accumulate, invest and produce.⁴ Moreover institutions should create a favourable environment in order to shape capabilities, knowledge and entrepreneurship.⁵ If the institutional environment is not adequate, individuals might have great difficulties to develop necessary capabilities to enhance the economic system’s productivity.

Institutions have a leading role in defining growth strategies and GD should take into account the possibility that institutional failures might influence different aspects of economic activity at the same time. So we suggest to introduce a cross sectional constraint, which is transversal to the branches of the decision tree (see **Figure 2**).

The grey shaded boxes of the tree show the various elements which may be more directly affected by good and bad institutions; each of them refers to a different institutional aspect, which requires an *ad hoc* analysis in each different country.

1.3. Adding the Demand-Side Constraints

1.3.1. Upstream- Downstream

The most critical aspect of GD framework is that the Demand-Side is not explicitly considered. If we look at the decision tree we see that it focuses on finance, various types of ‘failures’ and imperfections and on productive resources, which seems to suggest that in the authors’ opinion what really constraints economic growth are mainly Supply-Side variables. In considering the Demand-Side elements we do not follow the long run intertemporal equilibrium model.⁶ We take a more modest approach, which however can

⁴ See also Easterly (2001).

⁵ See also W.J. Baumol (1990, pp. 893-921).

⁶ In General Equilibrium Analysis the Demand Side is based on the intertemporal preferences of the consumers; in the Diagnostics framework the Demand Side is synthetically captured by the condition

$$\left(\frac{\dot{c}_t}{c_t} = \frac{\dot{k}_t}{k_t} \right).$$

be useful in bringing to the fore some of the market demand aspects which can significantly affect the investment decisions.

With term ‘market/demand side’ we mean all the elements which connect the firm to the market and to the consumers, but these elements are considered from the point of view of the firm. Let us consider the firm as a point on a segment; on one side there are all the upstream features of the production process, on the other side we have the downstream elements linking the firm to the market, basically to the point at which sales take place.

Borrowing Hirschman’s words we can speak of ‘*backward*’ and ‘*forward linkages*’. Let us repeat that with ‘forward linkages’ we refer to all the downstream variables which ‘connect’ the entrepreneur’s decisions to their final market and to the sales of their products.⁷ Hirschman underlines that “*backward linkage effects are much neater than forward linkage effects*”.⁸ We partly innovate on his definition of ‘forward linkages’. However we want to stress the importance of the visualisation of the potential market by the entrepreneurs and the way in which they evaluate the ‘forward linkages’ in order to reach the consumers. These ‘forward linkages’ can also be seen as all the steps which the entrepreneurs regard as being necessary in order to transform the potential demand for their products into effective demand. The vision of the potential market and the evaluation of how to reach them are decisive elements in the firms’ investment decisions.

We could say that the original GD approach focuses mainly on backward linkages. The link between productive capacities and their utilisation rate not only requires the relaxation of Supply-Side constraints, but also needs to consider the Demand-Side.⁹ Both ‘upstream’ and the ‘downstream’ factors’ affect the firms’ decision about capacity utilisation and above all about new investments.

Hirschman dedicates more time to the analysis of backward linkages even if he underlines the fact that backward and forward linkages are closely interconnected in the growth process. He also points out that “the existence or anticipation of demand is a condition for forward linkage effects to manifest themselves” (Hirschman 1958, pp. 116-17). We elaborate on Hirschman’s insight and in our addition to the GD framework we stress the role of the problem of the *anticipation of demand*.

⁷ These sales can regard one or the other of the different components of demand and the buyers can be either consumers, or other firms, or the government, or the products can be exported.

⁸ See Hirschman (1958, p. 116); see also p. 101 where he refers to forward linkages as output-utilisation.

⁹ See N. Kaldor (1981, p. 603).

1.3.2. The investment function

The main stimulus to growth comes from private investment¹⁰ so we focus on the way in which entrepreneurs decide about capital accumulation. Investment decisions and the motivations behind them are one of the most complicated and the most disputable aspects of economic theory. Here we only want to show that in order to understand the causes which keep private investment low the GD methodology and the decision tree may be greatly improved by making the Demand-Side considerations more explicit.

HRV indicate two main reasons which constrain private returns to economic activity, low appropriability and low social return (see **Figure 1**). The low appropriability branch of the tree has to do with various ‘failures’, they underline the impact on investment decisions of the low probability to take possession of the return of investment.

But entrepreneurs have to take decisions that imply an evaluation on the profitability of investments also independently of the fact that they will be able to receive the full returns from them. The first and fundamental evaluation concerns the profitability of investment *per se*. In the low social return branch of the decision tree we find mainly productive side type of constraints, but nothing about those Demand-Side variables, like capacity utilisation, market size and above all expectations about sales dynamics.

Let us examine these new variables in order to throw new light on the possible constraints to private investment.

First, we suggest an *ad-hoc* investment function, which partially modifies equation (1):

$$g_k^i = \frac{\dot{k}_t}{k_t} = \phi + \frac{r(1-\theta)(1-\psi)p - \rho}{1-\beta} \quad (4)$$

Equation (4) includes a new variable ϕ which we specify as follows:

$$\phi = \phi(d_{mt}, i_{mt}, \overline{exp}) \quad (5)$$

¹⁰ Of course the main component of demand is consumption which will be considered in the paper as part of the determinants of the market size.

In equation (5) (d_{mt}) is the size of the market, (i_{mt}) represents the degree of market integration and (\overline{exps}) stands for sales expectations.

Below we will discuss the rationale for including these three magnitudes in the investment function, but it is clear that they try to capture some elements which are important in determining investment decisions. In particular they pinpoint some downstream, or forward, factors which are not included in the original GD methodology and which all show a positive relationship with ϕ . Equation (5) as a Keynesian flavour; following Joan Robinson and with all the due caveats we can say that ϕ tries to describe the ‘animal spirits’ of the entrepreneurs.¹¹

We also provide a somehow different specification of equation (3) and of the magnitudes which influence the rate of profit, or in the words of HRV the social return on investments.

$$r = r(\alpha, \theta, x, u) \quad (6)$$

Besides the magnitudes indicate by HRV the rate of profit now depends also on the degree of capacity utilisation, u .

We now have four new variables which influence investment decisions: (d_{mt}) , (i_{mt}) , (\overline{exps}) and u . Let us now examine these new variables one by one.

First we discuss equation (5) and we begin with the *market size* (d_{mt}) . From the very beginning of the political economic thought the market dimension has been a central aspect for growth theories.¹² Notice that a large market has an inherently dynamic potentiality. A more extended market allows economies of scale, in the language of Smith a deeper division of labour, which in turn increases productivity and income. Higher income may boost consumption and also investment, which reinforce the growth of markets, thus leading to a virtuous growth circle (see Allyn Young 1928).

Of course the existing size of the potential market for the products of a firm, of an entire sector and of a country can be evaluated and largely depends on the size of

¹¹ See Joan Robinson’s theory of the growth rate of the capital stock and in particular the emphasis she gives to ‘animal spirits’ (Robinson 1969).

¹² See the well known first three chapters of the *Wealth of Nations* (Smith 1776).

population, on income per capita and on the degree of openness but here we do not want to discuss these factors.¹³ We rather want to highlight the fact that the *market size* (d_{mt}) may also include an expectations component, or a dynamic component. Entrepreneurs know the size of their potential market, but their decisions may also be influenced by the way in which they expect this market to grow in the coming years, and this is much more difficult to capture. Of course market dynamics depends on population and income growth, but also on many other things, such as the improvement in infrastructures, new trade agreements, etc. These elements are of particular relevance for developing economies. Here we just want to highlight the fact that (d_{mt}) can be viewed both in a static and a dynamic sense, the former being much easier to 'measure'.

Before moving to market integration let us briefly discuss some further point on market size and innovation opportunities.

In a 2003 paper Rodrik and Hausmann highlight a policy which seems to bypass the problem of investment profitability. They suggest adopting a strategy by which entrepreneurs have incentives to enter new, and possibly innovative, activities and in a way they by themselves discover where investments are more profitable.¹⁴ This approach of *Self-Discovery* is very useful and practical. For sure entrepreneurs will always try to innovate products and processes, however this does not rule out the fact that it is useful to include market size and its dynamics among the determinants of investment.

Aghion and Howitt stress the importance to consider the direct link between the probability to generate an innovation and market dimension.¹⁵ In their model one of main reason for the difference between innovative and traditional sectors is in the growth rate of their dimensions, that is to say the increase in the size of market. Other things equal it is much easier to innovate in a large and expanding market.

Hirschman is more sceptical about the role of market size, but he too indicates the possibility that the '*forward linkage effects*' "*will induce attempts to utilize its outputs as inputs in some new activities*" (Hirschman 1958, p. 100). The generation of new activities is crucial; this makes even more important the analysis of the conditions which can

¹³ Of course the size of the market is also influenced by income distribution, but the sign of its influence on investments can be debated (see for instance Bhaduri and Marglin 1990). It is also worth mentioning that the degree of openness per se might not guarantee a larger market, because this depends on export composition.

¹⁴ Rodrik and Hausmann (2003).

¹⁵ It is important to underline that Aghion and Howitt's results (2009, p. 169) are mainly related to economic sectors.

induce the entrepreneurs to enter this type of pioneering processes and eventually make them successful.

Let us now move to consider the *degree of market integration*, (i_{mt}) . The overall potential market might be there, but the different markets are difficult to reach. The obvious case is when markets are geographically scattered all over the country, with very poor communication systems. It is again the problem of how to really access the markets, that is to say how to transform a potential market into more sales. This is a typical problem of forward, or downstream, linkages, which has not to do only with physical infrastructures. Market integration includes all the elements which are essential to make the ‘selling pipeline’ effective. Therefore beside poor communications other factors may negatively affect entrepreneurs’ decision about new investments: a fragmented distribution chain, in which you can reach the markets but at higher costs, a system in which payments for sales are delayed. Market integration, as well as market dimension, depends on exogenous factors like income, demography and individual preferences, but they also depend on institutional and political variables. As we shall see this is a major problem in Palestine.

It is reasonable to suppose that in a small-open economy and in the short run, *sales expectations* (\overline{exps}) , are exogenous. In the case of Palestine this fact is even more true because expectations depend mainly on the political situation, which is completely exogenous. This fact highly damages entrepreneurs’ ‘animal spirits’ and hence it can help to explain the low level of capital accumulation.

As for market size sales expectations too have both a static and a dynamic component. On the one hand firms expect to sell a certain amount of their products and the larger the better. On the other hand entrepreneurs’ investment decisions will be also influenced by their view about the way in which sales will move in the future, a much more difficult aspect to assess, which it includes medium and long term considerations.¹⁶

Other things equal the entrepreneurs decide to invest if they can see in front of them the potential increase of sales, or, even better, the opening up of new markets. This latter case can be related either to the commercialisation of a new product or to the possibility to access new markets.

Now we move on to examine equation (6), that is to say *profitability and in particular the role of capacity utilisation*. As we have seen the original GD framework

¹⁶ We will further elaborate on this point in section 2.3 on Palestine; See also Botta and Vaggi (2010).

includes only the first three variables of the right hand side of equation (6), which regard mainly the impact on profitability of the productive capacity side, u helps to move on to considerations more related to market and demand.

Some quick considerations on the importance of capacity utilisation in the explanation of grow process or the lack of them could be useful.

A World Bank Survey by Correa and Looty on the impact Financial Crisis on firms in seven different countries, seems to confirm the importance of the market side.¹⁷ The survey included a question about the main effect of the financial crisis and firms had a list of five options to choose from, including a residual option termed “other effect”. In each country covered by the survey, more than 70% of firms chose the answer: “drop in demand for its products and services” (Correa and Looty 2010, p. 2.).

The Financial Crisis Survey also measured the capacity utilisation of manufacturing firms. In all the countries analysed in the Survey there was a decrease in capacity utilisation in the manufacturing sector (see *ibid.*, p. 3).

It is worth remembering that many authors emphasize the role of demand and in particular of the degree of capacity utilisation on economic growth. Setterfield writes that in each instant of time, demand-determinants affect the degree of capacity utilisation through innovation’s push.¹⁸ In fact, the availability of productive capacities is fundamental in order to have economic growth, but this does not mean that they are all fully utilised: if the productive potential is or not completely exploited one needs to investigate Demand-Side factors.

Following Kalecki’s growth model, Lavoie¹⁹ writes that the private profit rate is given by:

$$r = \frac{\Pi}{K} = \left(\frac{\Pi}{X} \right) \left(\frac{X^{\max}}{K} \right) = \pi u \varepsilon$$

where π is the profit share, ε is the full employment output–capital ratio and u the degree of capacity utilisation.

¹⁷ Correa and Looty (2010).

¹⁸ See Setterfield (2002).

¹⁹ See Lavoie (1992).

The “new” decision tree (see **Figure 2**) that we present includes all the variables introduced in equations (4) – (6) above and provides a wider set of possibilities for the investigations of the constraint on economic growth of a country.

In this new description of the diagnostic process we have also grouped the different elements into four major blocs, because this helps to identify more clearly the content of each branch of the tree. From right to left they can be called: the *finance branch*, the *appropriability branch*, the *productivity branch* and the *market-demand branch*. This grouping makes much easier to see whether or not some variable is lacking and it also facilitate to examine the relationships among the different variables inside each branch but also among the different branches.

We want to stress the importance of the linkages between the last two bloc/branches on the left hand side of the tree: that is to say the *productivity branch* and the *market-demand branch*. The former branch exists in the original GD tree, the latter we have introduced. It is clear that there are mutually reinforcing forces which link total factor productivity, TFP, to market dimension. In Developing Countries the linkages between TFP and market size can either result in a positive growth path or they can generate a “poverty trap”.²⁰

In a sense this brings us back to problem already highlighted by Rodríguez: acting on one constraint at time could be dangerous. The mutual and possibly reinforcing linkages between these two branches are absolutely crucial, both to explain economic growth and the lack of it. In order to trigger off a process of economic growth it is important to identify the most binding constraint, but strong economic growth is a cumulative process, which can be sustained in the long run only if a number of variables positively interact one with the others. Otherwise, new binding constraints will emerge and the country might well risk falling back in a low income, low growth situation.

Take two very simple considerations. On the one hand, given the low level of productivity in many low income countries, stimulating the aggregate demand might generate inflation. On the other hand, the reduction of government and market failures or the introduction of more efficient technologies may certainly reduce the production costs. But without an increase in market size and in expected sales, capital accumulation and the new output level will not be sustained.

²⁰ On this argument see Sachs (2005).

2. The Case of Palestine

2.1. The background

In Palestine Market-Demand considerations are particularly useful to explain low economic growth and to identify the most binding constraint. Many of the economic pathologies of Palestine seem to have a Keynesian nature: clearly it is a less-than-full-employment equilibrium, with very small domestic firms which need physical investment to reach more efficient productive scales and to improve competitiveness. According to the World Bank Palestine is a typical investment-constrained economy.²¹

Palestine represents a peculiar case among Developing Countries because the development of its economy has been influenced by about sixty years of conflict with Israel. Since the Six-Day War (1967) Palestine has been subjected to Israeli military, economic and administrative control;²² movement restrictions due to Israeli security controls prevent the ordinary progress of economic activity.

As regard trade, Palestine looks like a small-open economy almost completely dependent on Israel, to which is connected by a *de-facto* Custom Union,²³ however goods and people’s movements are not free and the two markets are not integrated; moreover Palestine has almost no independent currency and very little economic sovereignty.

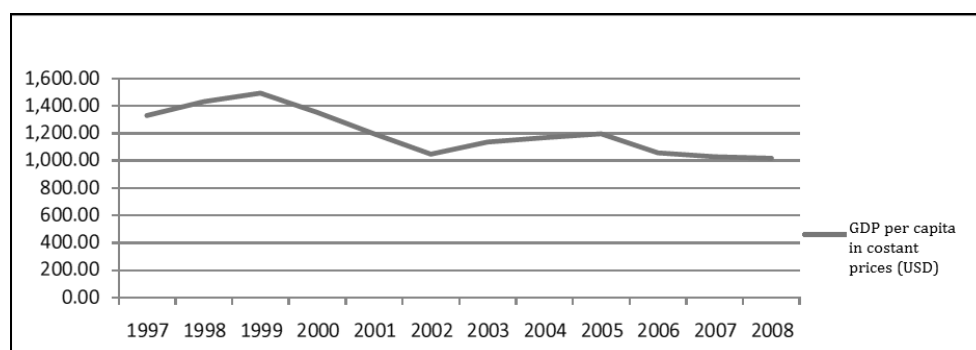
Since the Oslo Treaty (August 20, 1993) Palestinian economic performances have been moderately good, but have become very disappointing after the second *Intifada* (2000). The average annual growth rate of income has dropped by 8% and GDP per-capita has fallen by nearly a third since 1999²⁴ (see **Figure 3**).

²¹ World Bank (2007a). See also Botta and Vaggi (2010).

²² See Botta and Vaggi (2010).

²³ This was established by the Paris Protocol (April 29, 1994) which set rules for economic relations between Israel and Palestinian Territory.

²⁴ World Bank (2009b).

Figure 3: Economic Growth (1997-2008)

Source: World Bank, Palestinian central Bureau of Statistics (PCBS).

In 1967 Palestine had many marks of economic weakness and very little has changed since then. In particular for what concern the structure of the economy, the share of agriculture has fallen to about 7% of GDP, even though agricultural activities are still quite important for peasant's households, the industry's share remains only about 13%²⁵ (see Table 1).

Today Palestine is in a distorted state of development and it looks like a service dominated economy, with an important role for the construction sector, perhaps larger than it looks from figures. The Palestinian private manufacturing sector stagnates.

Table 1: Share of GDP by selected activities in West Bank and Gaza.

	1994	2000	2005
Agriculture and Fishing	13	10	7
Mining, Manufacturing, Electricity and Water	21	16	13
Construction	11	6	3
Wholesale and Retail trade	17	12	8
Transport	3.5	5	10
Other Services	22	24	25
Public Administration and Defence	10	13	18

Source: World Bank, Palestinian Central Bureau of Statistics (PCBS).

²⁵ World Bank (2007a).

Of course the Israeli occupation does not help the private sector's revival. The West Bank and the Gaza Strip are in fact two different economies, moreover the physical and administrative barriers imposed by Israel inside the West Bank isolate the main cities that are not able to trade with each other, with the Jordan Valley and with East Jerusalem (see World Bank 2010, p. 4).

By using the *new decision tree* we shall see that the fragmentation of the domestic market is one of the major causes of the lack of investment in Palestine, because it creates a risky and precarious investment climate and in the end it hinders the Palestinian productive potential.

2.2. Palestinian Constraints: the traditional branches of the GD decision tree

The main problem in Palestine is lack of investment and our purpose is to identify what keep investment levels low. In order to investigate what constrains investment in the Palestinian economy we will use the *new decision tree* in **Figure 2**, and we will see that without market-demand branch, and the variables it includes, it would be impossible identifying the most-binding constraint to Palestinian economic growth.

We will examine the four branches of the tree, from right to left.

Let us first focus on the *finance branch*. Currency-risk is null because Palestine does not have a proper currency; country-risk is low even if there exist a situation of political instability, because the Palestinian Authority does not issue government securities and so there is no risk of default; moreover the trade deficits is always balanced by international aid.

As regard to *local finance*, the banking sector, which dominates the financial system in WBG, is relatively sound and its total assets steadily increased from USD 4,885 million in 2004 to USD 6,704 million in 2007. The banking system is successful in attracting public savings, which even increased since 2001. The WBG deposit ratio (total deposit/GDP) is 102% that is close to those observed in developed countries and well above those of the MENA Region, which are around 60%.²⁶ Credit facilities to private people have increased by 23% between 2008 and 2009, but investments remain concentrated on real estate, construction and public sector and not in manufacturing and high value added services (see World Bank 2010 p. 12).

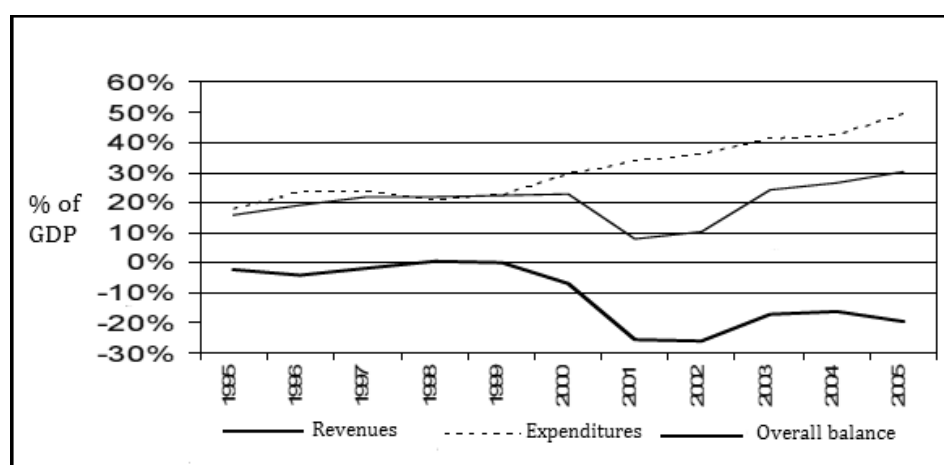
²⁶ World Bank (2008b).

The lack of investments does not seem to reflect the lack of funds, there is no saving-constraint. The representation of Palestinian investment as being saving-determined would probably be misleading, rather we believe there is an absence of profitable investment opportunities (on this see also Botta and Vaggi 2010).

We now move to the second bloc: the *appropriability branch*, which is central in the original Diagnostics framework. We concentrate on the macro and micro risks due to *government failures*.

With regard to *macro risks*, we have already seen above that Palestine does not have financial and monetary instability problems. The fiscal situation deteriorated after the second *Intifada*: the Palestinian National Authority's deficit increased from the pre-*Intifada* value of around 3% of GDP, to 18% GDP in 2005 (see **Figure 4**). However, it must be emphasised that the fiscal deficit is always largely covered by international aid.²⁷ Palestine fiscal fragility does not seem to be the most binding constraint to growth at least for the time being.

Figure 4: Palestinian Authority Fiscal Balance.



Source: World Bank, Palestinian Central Bureau of Statistics (PCBS).

²⁷ In the period 2000-2005 financial aid represented about 10% of WBG GDP, while in 2008 it reached about 30% of GDP. Source: World Bank (2009b, p. 11).

The main *micro risks* include corruption, high taxation and lack of property rights. As regard to corruption, the World Bank's results²⁸ show that only 13% of firms in WBG are expected to pay bribes to public officials, and only 1.56% are expected to pay bribes in order to get an operating license; these findings are much better than those for the MENA Region where the average values of the two data are 30% and 15% respectively.²⁹

Entrepreneurs do not consider the fiscal regime in WBG as a main problem, because in fact it is intended to provide incentives for investment; as matter of fact Palestinian tax rates are either below or on the average of MENA Region's values.³⁰

In Palestine there is no clear *property rights* regime. This is a problem for economic activity, in particular as regard Land Administration. The implementation of a clear property rights regime would be a fundamental step for Palestinian Authority in order to develop a modern incentive system for investment. Among the micro risks this is the more relevant one, in particular for the long run investments, but it is not the major cause of prolonged stagnation.³¹

The third bloc, the *productivity branch*, is particularly important because it include all the externalities which negatively affect productivity. For sure Palestinian *geography* is not particularly favourable to economic development. On the one hand poor geography cannot be considered as a real constraint, because there are examples of landlocked countries that reached positive results in terms of rate of growth (for ex. Botswana, Zambia).

On the other hand, but for the political conditions the geographical circumstances of Palestine would not be so terrible. It is a small country but it has a seaside, it is in a very short distance to major potential partners such as Israel and Jordan and not that far away from Egypt. Water is a problem, but again mainly because of the political circumstance and in any case there is no process of desertification going on.

In Palestine the *human capital* level is very good. The education indicators compare favourably to those in the rest of the MENA Region: for example the secondary gross enrolment ratio is above 90% with respect to just above 70% in MENA as a whole.³² Similarly, labour market rigidity does not seem to be a binding constraint

²⁸ We refer to World Bank (2004) and the results available of the Enterprise Surveys available at <www.enterprisesurvey.org>.

²⁹ Enterprise survey database.

³⁰ See Doing Business Database available at <www.doingbusiness.org>; and The World Bank Report no. 36320 WBG (2006b).

³¹ World Bank (2006b).

³² World Bank (2009b, p. 20).

for the Palestinian economy, its legislation on labour is more flexible than in Turkey (see Table 2).

Table 2: Rigidity of Employment in WBG and in some MENA Countries.

Country/Region	Rigidity of Employment Index (0-100) ¹
Egypt, Arab Rep.	27
Jordan	24
Israel	17
Lebanon	25
Turkey	35
West Bank and Gaza	31
MENA average	24.5

Note:¹ The Rigidity of Employment Index is the average of three sub-indices: Difficulty of Hiring Index, Rigidity of Hours Index, and Difficulty of Firing Index. Each of these indices assigns values between 0 and 100, with higher values representing more rigid regulations.

Source: Doing Business database. Figures are for 2010.

Without investigating the Demand-Side variables, our diagnostics analysis would end up with the identification of Low Total Productivity as the most-binding constraint for Palestine. Total factor productivity, is difficult to measure but if we take labour productivity³³ in the industrial sector we see that it has steadily decreased until 2000, and only after 2003 has begun to pick up again.³⁴ Low labour productivity and low TFP are certainly major constraints to economic development in Palestine, but why is productivity low? The answer to this question and the reasons of these weak conditions will emerge more clearly in the analysis of the fourth branch of the tree that related to market and demand.

Before proceeding with the analysis of the market-demand branch, is useful to briefly consider whether or not the *Palestinian institutions* may be regarded as the major

³³ We consider labour productivity as an indicator for total factor productivity because the Palestinian economy is characterised by labour intensive products.

³⁴ World Bank (2007a).

constraint to economic growth.³⁵ The Palestinian National Authority is quite recent and it is still too weak to constitute a well-functioning, solid and complete institutional environment.

However the PNA had a positive performance in institution-building and delivery of public services since 1993.³⁶ The PNA's Palestinian Reform and Development Plan for 2008-2010 underlines the importance of high quality institutions in order to achieve social and economic development goals.³⁷

In some areas, such as the management of public finance and the establishment of security and the rule of law, important reforms have taken place and progress continues to be made. In other crucial areas, such as the judiciary, land management, and border management, reforms are proceeding at a slower pace, also because of the limited institutional capacities in certain areas of the administration and because of the constraints imposed by the situation of occupation, which prevents the PNA from taking responsibilities of some important areas of the administration, for instance external trade and the related fiscal issues. A report by the World Bank of September 2009 says that Palestine must strengthen the existing institutions and build new ones in order to provide support for the market economy. But it concludes that "no amount of well-functioning institutions, will, however, lead to economic growth in the absence of access to markets, whether within the West Bank and Gaza, in Israel, or in the rest of the world" (World Bank 2009b. p. 7).

2.3. Demand-Side Constraints in Palestine

In Palestine both total and labour productivity are low mainly because of the extremely small size of the industrial establishments. Low productivity is the result of the *small dimensions of firms* which imply lack of productive backward and forward linkages between firms and lack of learning mechanisms that push innovation. The average dimension of firms is four workers in West Bank and five workers in the Gaza Strip and they have no real opportunities and very little incentive to growth. Micro firms which serve isolated economic zones cannot achieve the economies of scale necessary to

³⁵ As we said before, although Rodrik asserts the necessity of a solid institutional framework (see Rodrik, 1999) he does not explicitly consider it in the decision tree.

³⁶ World Bank (2009b).

³⁷ World Bank (2007c).

guarantee sensible productivity improvements and investment flows.³⁸ But why these firms do not grow?

This situation is due to Israeli security restrictions that have fragmented the whole territory and the West Bank in particular. Physical and administrative barriers all over the territory increase transportation costs, reduce firm competitiveness, and hinder trade inside the West Bank and between the WB and the Gaza Strip. Palestinian firms work in a fragmented economic environment which also prevents the development of new activities.

Restrictions on the ground also increase in uncertainty and risks. Uncertainty about market access and market fragmentation are the two elements which prevent entrepreneurs from fully exploiting the possibilities of forward linkages; this situation keeps investments low and it is the real cause of Palestinian stagnation. These restrictions also prevent Palestinian people and firms from taking advantage of Israeli infrastructures such as roads, ports and airports.³⁹

Palestine has a productive potential, but it does not exploit it and the above considerations seem to indicate that the most-binding constraints do not so much belong to Supply-Side part of the decision tree, but rather to its Demand-Side. Let us now move to the *market-demand branch* of the *new decision tree* and to examine the four variables that we have introduced in equations (5) and (6).

The main economic signal which indicates a demand problem is the firms' rate of *capacity utilisation* (u). A recent World Bank Survey⁴⁰ found that the average level of capacity utilisation was only about 57% in the West Bank and 47% in Gaza (in our fourth branch of the tree u is low); micro enterprises operating at only half capacity cannot hope to be internationally (nor nationally) competitive and are not able to stimulate demand growth.⁴¹

Another important signal that emerges from the analysis of the Palestinian economy is the difference between the *size of the market* that firms can actually serve without incurring prohibitive costs, and the overall potential Palestinian market. In terms of population Palestine is nearly four million people, but the market served by each firm does not go beyond the municipal area in which it is located.

³⁸ World Bank (2007a).

³⁹ Administrative impediments also prevent Palestinian from building new infrastructures: the Israeli Government does not issue licenses that are necessary in Area C which represents about 60% of WBG Territory.

⁴⁰ West Bank and Gaza 2006 Enterprise Survey <www.enterprisesurveys.org>.

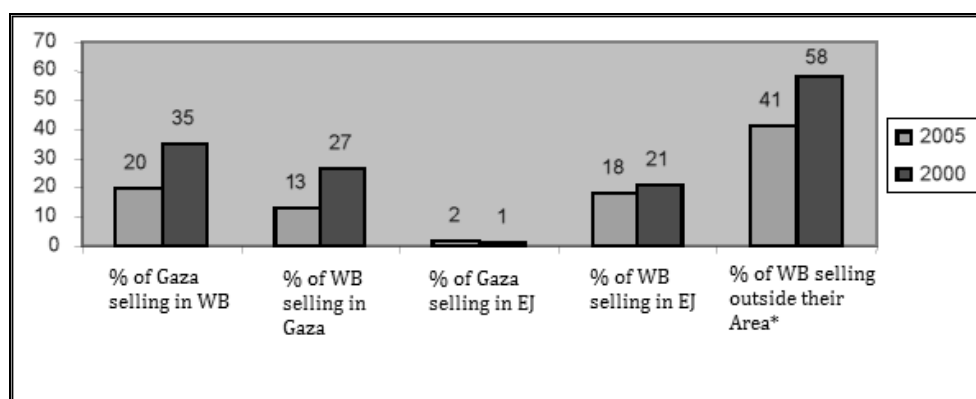
⁴¹ World Bank (2007a).

In the largest cities, Ramallah, Nablus, Hebron markets are just a few hundred thousand inhabitants, so the market dimension (d_{mt}) is quite small.⁴² Entrepreneurs who know that they can only serve small markets do not need to increase productive capacity, and they have no motivations to increase investments.⁴³

The *domestic market's fragmentation* has worsened after the outbreak of the second *Intifada* in September 2000. The Government of Israel has strengthened security measures and this has caused the fragmentation of the West Bank territory in at least three different areas: North, Centre and South. Since the political elections of 2006 there has been an almost complete separation of the territories of the West Bank and the Gaza Strip (very low level of market integration i_{mt}).

As a result there has been a large drop in the percentage of establishments in Gaza and the West Bank selling into the other region. Inside the West Bank there is also an important decline in the percentage of establishments which manage to have a significant amount of their sales in other areas of the West Bank itself⁴⁴ (see **Figure 5**).

Figure 5: Percentage of sample selling out of their Region.



Note: *% of WB enterprises selling more than 25% out of their area.

Source: 2006 World Bank/PCBS Enterprise Survey.

⁴² It is very difficult, if not impossible, for Palestinian firms to sell their products in Israel and to export them to the nearby Arab countries. Of course many Palestinians work in the Gulf, and send remittances back home.

⁴³ In the private service sector an exception is the mobile phone provider Jawall, which managed to cover the whole of the West Bank.

⁴⁴ World Bank (2006), Enterprise Survey.

Since 2009 the mobility situation has lightly improved in the West Bank; some check points have been removed and communications between the major cities are a bit easier. However for the time being this has not created a significant increase in trade flows inside the West Bank and has not brought back industrial employment to the situation of 2000 (see World Bank 2010, p. 119).

The fact that some relaxation to movement restrictions has not generated economic impetus does not at all contradict our analysis of the stagnation of the Palestinian economy, quite the contrary. This problem leads us to the last element which affects investment decisions in the demand side branch in our new decision tree: *sales expectations* (\overline{exps}). This is probably the most important element which influences firms decisions about investment, in particular one should consider the dynamics of expected sales, that is to say their forecasted change over time. Remember that this magnitude includes expectations about the possible opening up of new markets. In all these cases entrepreneurs will invest more only if they are convinced that the expected increase in sales will last for some time in the future. The dynamic part of (\overline{exps}) is related to some sort of expected enduring improvement, which can produce a new scenario which will last for the time necessary to recover the funds invested and to make decent profits.

These changes, hopefully increases, in sales expectations are related to long term phenomena and are not just the result of some short lived event.⁴⁵

In Palestine sales expectations are exogenous because dependent on the political situation and they are deeply and negatively affected by the Israeli-Palestinian conflict. Above all temporary improvements in the political conditions on the ground are not going to modify this element of the investment function. Therefore some relaxation of the constraints to movements in the West Bank will have very little impact on investments until they will be quite substantial and above the entrepreneurs will be convinced that they are irreversible.

Following the Oslo agreements and until September 2000 there has been a period in which investments increased in Palestine, including the establishment of an Industrial Zone on the northern edge of the Gaza Strip. This was certainly due to political pressures coming from the international community, but the general investment mood was much

⁴⁵ This point is further elaborated in Botta and Vaggi (2010).

more positive than before and Palestinian wealthy people were prepared to invest their funds at home.

Unfortunately those positive expectations have not lasted long.

3. Conclusions

Without considering the Demand-Side branch of the decision tree it would be difficult to single out the main constraints to economic growth in Palestine. What really prevents Palestinian economic growth is the small size of the domestic market and its fragmentation, that is to say the low level of market integration (i_{mt}). Low capacity utilisation and low productivity are more a consequence than the real cause of Palestinian economic stagnation; actually they are low because there are no incentives for entrepreneurs to increase the size of the firms.

The stagnation of the private manufacturing sector depends neither on the lack of savings and not even on credit possibilities – the financial sector is sound and very liquid and the credit requirements needed are low – nor on the laziness of entrepreneurs, who are conscious of the much needed investments.

In the current situation, *in which firms have great difficulties to access to market and to evaluate, we could say to view and to understand market potential*, entrepreneurs show little inclination to invest because they are not able to see any profitable investment opportunity.⁴⁶ Expectations about future sales remain pessimistic.

In particular, because of the small and fragmented markets it is very difficult, not to say almost completely impossible, for the Palestinian entrepreneurs to try to implement that process of *Self-Discovery* of new profitable activities (see Rodrik and Hausmann 2003). The pessimistic/optimistic mood of the entrepreneurs are main cause influencing the introduction of innovative activities, this consideration is so obvious to be almost a tautology. Innovations are strictly dependent on the entrepreneurs' expectations about the potential increase in their sales and in their lasting into the future.

Moreover large and growing markets are a very important stimulus to introduce new products and to open new initiatives. As a matter of fact they are very useful conditions to

⁴⁶ World Bank (2007a).

transform a potential demand into effective demand for the firm's own products, including the new ones.

In the case of Palestine is clear that Palestinian entrepreneurs will bring them money back to the country and foreign firms will join only if the political situation and the operating conditions on the ground will show a permanent improvement which gives some sort of guarantees that it will not be reversed in the medium term. The analysis of the Palestinian economy has shown the importance to include market-demand side considerations in the Growth Diagnostics approach. This is a very peculiar case, but the diagnostic potentialities of the new decision tree are not limited to Palestine.

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Figure 1: The 2004 HRV Decision Tree

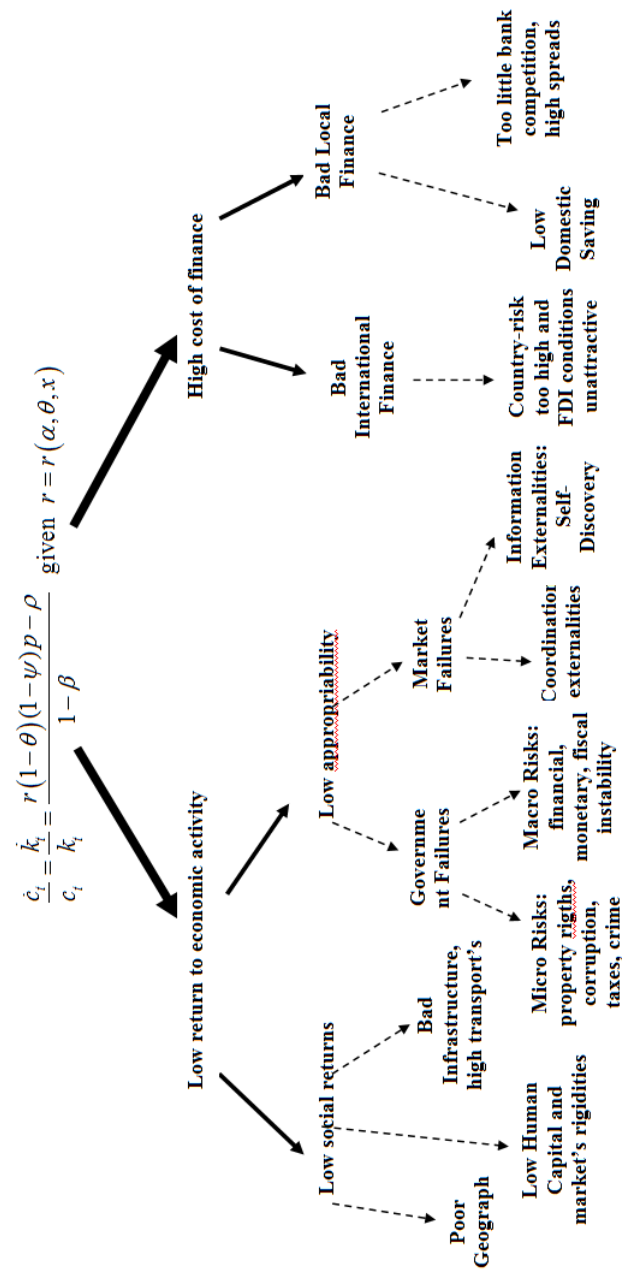
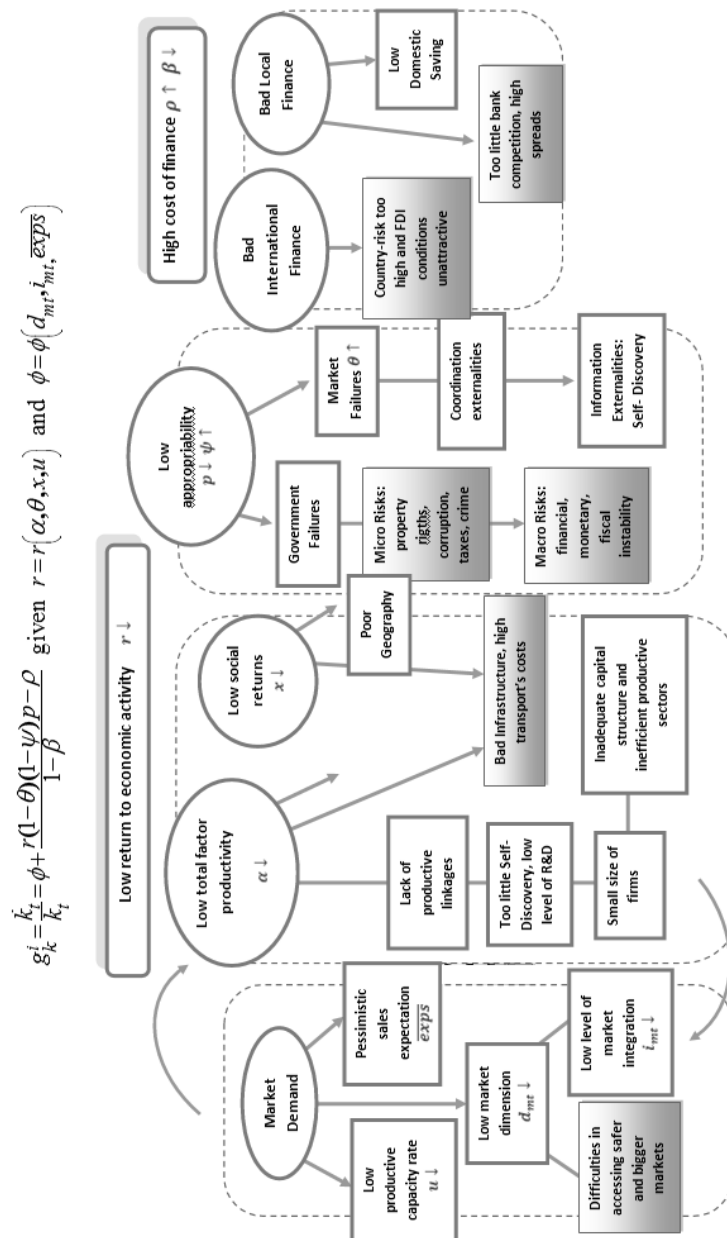


Figure 2: The New Decision Tree



Trade Issues and the Palestinian Economy: Stylised Facts and Modelling Options

Alberto Botta[♦]

Abstract: The World Bank Computational General Equilibrium model (CGE) by Claus Astrup and Sebastian Dessus (2001) is a cornerstone study on Palestine. It adopts a strictly neoclassical perspective, in which price-driven adjustments and the Armington/Constant-Elasticity-of-Transformation (CET) apparatus describe the functioning of the Palestinian economy and its foreign trade relations. This paper argues that certain empirical and factual inconsistencies prevent the World Bank CGE model from representing the Palestinian reality. We firstly argue that quantity-driven adjustments better describe economic adjustments within the Palestinian economy than price-driven adjustments do. Secondly, we stress the prevailing inter-industry nature of Palestinian foreign trade and the relevance of real income variables to explain expenditure allocation between domestic and imported goods. These aspects are hardly caught by the Armington/CET apparatus and require an alternative formalizing strategy. The final section of the paper describes a heterodox/structuralist perspective on Palestine.

JEL classification: F14, C68, B50

Keywords: Palestine, Foreign trade, Structuralist CGE models

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1. Introduction

Trade policy is a hotly debated issue in Palestine. It matters on a twofold level. First, trade policy issues are strictly tied to political issues. At the beginning of the nineties, the Palestinian-Israeli negotiations on the Paris Protocol were mainly driven by political considerations and Palestinian support for a Free Trade Area agreement with Israel basically aimed at establishing precise territorial borders between Israel and the future Palestinian State.¹ Second, trade policy may deeply impact on the development process of Palestine. Three issues in here to such policy: first, the effects of alternative trade policy agreements on Palestinian overdependence on Israel as a market for Palestinian exports and as the main provider of Palestinian imports; second, the need to diversify Palestinian export pattern; third, the need to replace a labour-exporting development with a goods-exporting development paradigm.²

The World Bank Computation General Equilibrium model (CGE) by Claus Astrup and Sebastean Dessus (henceforth the “AD model”) enables fundamental contributions to descriptions of Palestinian trade and the effects of differing trade arrangements on Palestinian development. Astrup and Dessus propose a standard neoclassical real-side CGE model. Economic decisions, both on the supply and on the demand side of the economy, are the results of maximising behaviours from representative agents. Relative prices adjust so as to ensure general equilibrium. Full employment is assumed and savings determine investments. The well-known Armington/Constant-Elasticity-of-Transformation (CET) assumptions describe foreign trade, so that intra-industry trade emerges as a feature of trade relations.

In this paper, we provide an extensive reappraisal of the World Bank model in its application to Palestine, and we argue that its underlying theoretical apparatus may not be the most appropriate one to model the Palestinian economy in general and its trade

¹ According to Arnon and Weinblatt (2001), Israeli support for a Customs Union arrangement aimed at delaying as many political decisions as possible and at avoiding the clear demarcation of Palestinian and Israeli territories.

² From the Six-day War on, the Israeli administration of occupied territories strongly hindered the development of the local productive system. Permit restrictions and protectionist policies in favour of Israeli producers kept the Palestinian economy in a status of general backwardness. The need for poverty alleviation was mainly addressed by allowing Palestinian people to commute to Israel in search of work. A labour-exporting economy emerged, with domestic expenditures being financed by foreign remittances. After the Oslo Treaty, due to repeated closures by the Israeli authorities, said development pattern came to an end, so that the need for a new development paradigm became evident. A goods-export paradigm instead of a labour-exporting one now appears as the main way to promote Palestinian development.

relations in particular. We stress that discrepancies seem to exist between the building blocks of the AD model and certain stylised facts on Palestine, and accordingly we advance two observations. Firstly, quite a substantial body of literature propose that quantity-driven adjustments are far more relevant than price-driven adjustments in the functioning of the Palestinian economy. Palestine suffers protracted economic stagnation due to a lack of *effective* demand for Palestinian goods; Palestinian capital formation is frustrated due to a lack of profitable investment opportunities rather than to saving restrictions. These facts collectively seem to be at odds with the supply-side full-employment approach at the base of the AD model. Secondly, Palestinian intra-industry trade does not emerge as a main feature of the Palestinian trade pattern; inter-industry trade prevails at both macro-aggregated and industry level. Palestinian trade seems to respond slightly to relative price changes, whilst income fluctuations and economic dynamics appear to be fundamental to explanation both of import and export flows and of the relations of these flows to domestic absorption and production decisions. The Armington/CET model does not capture these features efficiently, so that a different theoretical approach may be required.

On the basis of this evidence, this paper considers some theoretical alternatives to the World Bank CGE model for description of the Palestinian economy and its trade pattern. Our attention focuses on the post-Keynesian structuralist approach. Following Taylor (1983), structuralist CGE models are eclectic in character and assume multiple adjustment mechanisms. Quantity-driven adjustments are taken into account alongside price-driven adjustments. Quantity-driven adjustments may prove to be useful to describe the functioning of the Palestinian economy, at least that of the tradable goods sector. Several structuralist models depart from a pure Armington/CET scheme (Naastepad 1999). The abandoning of the concept of "composite goods" and of the associated technicalities has several implications. First, it allows structuralist models to include income dynamics as a direct explaining factor for expenditure allocation between domestic and foreign products. Second, it accounts for differences in income elasticity between home-produced and imported goods. Finally, the departure from the price-driven Armington/CET apparatus may facilitate explanation of the prevailing inter-industry nature of Palestinian trade without enforcing unrealistic economic scenarios or extreme parametrical settings.

After this introduction, this paper is organised into 4 sections. Sections 2 and 3 describe some stylised facts on Palestine. We highlight some macroeconomic features of the Palestinian economy and their discrepancies with the building blocks of the World

Bank CGE model. We then define the main economic variables explaining Palestinian trade flows, and we compute the Grubell-Loyd index of intra-industry trade. Section 4 presents a structuralist alternative to the World Bank CGE model. Section 5 concludes.

2. The functioning of the Palestinian economy: quantity-driven vs price-driven adjustments

It goes without saying that the sixty-year-old Israeli-Palestinian conflict explains much of the parlous conditions of the Palestinian economy. From 1967 on, Palestine has been forced into a de-facto Customs Union with Israel, a Union in which the Israeli Shekel is the currency adopted for every-day transactions. Trade relations, however, have been treated asymmetrically. Whilst Israeli goods have benefited from free access to the Palestinian market, Palestinian exports have been subjected to strict regulations and restrictions (Kanafani 2001). Moreover, the development of productive capacity in Palestine has been largely hindered by the military administration of the occupied territories. Palestinian firms had to apply for licences from the military authorities to start up. Permits were usually not conceded so as to discourage and prohibit Palestinian firms from competing with Israeli producers (Arnon and Weinblatt 2001). The Palestinian economy now shows “all the hallmarks of an underdeveloped economy” (World Bank 2007) and appears to be a small, underdeveloped “province” of Israel (Arnon *et al.* 1997). From a structural point of view, according to UNCTAD (2006), whilst the industrial sector is largely underdeveloped, agriculture is still a significant source of employment. In 2007, according to PCBS (2009a), the manufacturing sector collapsed even further, and accounted for a mere 10% of domestic GDP and 12% of total employment. Agriculture and services, in contrast, respectively generate a 16% and more than 50% of total employment.

Further, Palestine depends massively on imports to satisfy its consumption and production needs. In 2007, imports of goods represented 67% of domestic GDP, whilst exports only amounted to 11%. From 1996 to 2007, Palestine’s economy was characterised by a profound and structural trade imbalance, with a trade equivalent to 56,25% of domestic GDP in 2007 (see Table 1 and **Figure 1**). Most Palestinian imports and exports come from, and are directed to, Israel. On average, from 1996 to 2007, imports from Israel amounted to 74,56% of total Palestinian imports. The share of export flows towards Israel amounted to 92% of total Palestinian exports (see Table 2). Palestine

is not a significant source of imports or destination of exports for the Israeli economy. In 2007, imports from Palestine amounted to 0,68% of total Israeli imports. Exports to Palestine were 4,27% of total Israeli exports (see Table 2).

In this context, from the mid-1990s onwards, Palestinian economic dynamics have been highly volatile, and dramatic mass unemployment has persisted. In 2007, the unemployment rate was 21,6% and in 2002 it reached 31,3%, the highest value since 1967. Mass unemployment is reflected in the huge output gap between effective GDP and potential GDP (see **Figure 2**). Palestinian labour productivity, here computed as the ratio between current GDP and the employed labour force, fluctuated substantially throughout the period here considered, and registered a general downward trend from 1996 to 2007. Of course, this can hardly be explained in terms of technological changes, but rather of economic cycles and the considerable disguised unemployment that emerges in periods of economic downturn (PCBS 2009b). Let us assume the 1999 level of labour productivity, i.e. the highest level recorded between 1996 and 2007, as the benchmark value for labour productivity in Palestine. Moreover, let us fix the Palestinian natural rate of unemployment at 8%, i.e. the UNCTAD estimates on Palestinian unemployment in 2007 under the assumption of an improved macro framework (UNCTAD 2009). According to these assumptions, effective GDP between 1996 and 2007 remained constantly below potential GDP. This gap widened even further after the Second Intifada, and therefore created opportunities for ample adjustments on the real side of the economy.

Neither a Harris-Todaro argument nor the over-regulation of the Palestinian labour market can plausibly explain these figures. As to the first hypothesis, the Palestinian labour market is almost completely separated from the Israeli one, so that mass Palestinian unemployment can only partially be considered as the outcome of voluntary job searching in Israel. As to the second point, "Palestinian labour markets are highly flexible (Astrup and Dessus 2005)", so that the mismatch between domestic labour demand and labour supply is not the result of institutional restrictions.

More generally, and on the basis of recent analyses, "the Palestinian dependence on Israel pervades almost every aspect of economic life, including prices and other major monetary variables" (Peres Centre for Peace and Paltrade 2006, p. 12). "Prices in Palestine follow closely those prevailing in Israel" (FEMISE 2006, p. 77). Such descriptions do not apply to all sectors, and specifically not to non-tradable goods and services. However, due to the lack of domestic substitutes for imported goods and to a pretty high degree of trade openness, foreign goods "control" Palestinian markets and the "small country assumption" suits the tradable-good sector well. Most intermediate inputs

used in domestic production processes are imported from abroad, so that foreign prices heavily influence domestic price formation. As a consequence, several prices in Palestine appear sticky and the Palestinian price system only partially responds to macroeconomic imbalances; in these conditions the neoclassical-type relative price adjustments proves to be largely useless as a way to restore full employment in Palestine.

In the light of these considerations, it has been argued that the current state of the Palestinian economy, in both the labour and the goods market, “reflects the fact that demand for Palestinian goods is insufficient for the economy to function at full employment (World Bank 2004)”. On the one hand, consumption and investment needs are mostly satisfied by importing from abroad. On the other hand, demand injections are low. Investment projects do not take off due to entrepreneurs’ reluctance to invest in the unstable and unfavourable Palestinian context. Exports are highly jeopardised by Israeli restrictions, which deny Palestinian goods free and stable access to foreign markets. Public expenditure and investments are dampened by a lack of finance.³ High demand leakages and poor demand injections jointly curtail *effective* demand for Palestinian goods, induce Palestinian firms’ economic activity to barely reach 50% of installed capacity and give rise to widespread unemployment. According to this scenario, in which Palestine shows some typical *Keynesian* features, the portrait of the post-1967 Palestinian economy provided by Arnon *et al.* (1997) may still be relevant and hence partially valid as a description of how it currently works: “since the [Palestinian] price system was mostly determined by the Israeli economy, it was irresponsive to domestic trends, while the only component of the system to be partly determined at home related to non-tradable goods. Thus, the adjustment mechanism and convergence to equilibrium was realised through quantity (real) changes, not through price changes (Arnon *et al.* 1997, p. 42)”.

A strictly neoclassical price-driven model such as the AD model is highly unlikely to capture these features; it would be appropriate to modify and to extend the model by incorporating some Keynesian features. In particular, we conjecture a more general and somehow eclectic framework, in which quantity-driven adjustments are introduced alongside price-led adjustments and in which, due to the large availability of unused productive inputs, responses to absorb economic shocks also take place on the quantity-side of the economy through changes in domestic production and factor utilisation rather

³ The Palestinian public budget is strongly determined by the availability of foreign financial support, and in the aftermath of the Second Intifada, highly volatile and shrinking fiscal revenues have been often used to cover urgent current expenditures.

than in prices. In section 5, we present a heterodox alternative to the AD model which may prove to be a better fit for Palestine’s singular scenario.

3. The Palestinian trade pattern: discrepancies in the World Bank Armington/CET apparatus

3.1. The inter-industry nature of Palestinian trade

The World Bank AD model of Palestine is a rigorous, real-side neoclassical model which describes a simple price-driven economy characterised by full employment of productive inputs and saving-to-investment macroeconomic causality. The Armington/CET apparatus is the theoretical scheme adopted to model Palestinian trade.

From a technical point of view, the Armington/CET apparatus consists of a simple two-stage maximisation process. As to the Armington assumption, in a multi-sector framework, the neoclassical representative consumer first maximises a top-level aggregate utility function, for example an LES utility function, by allocating expenditures to differing goods. Any single “Armington” good is a composite of home-produced and imported varieties of a specific product. At the bottom level of the optimisation problem, all rational economic agents, domestic consumers, firms and domestic government, decide how to allocate expenditures between domestic and imported goods. Domestic consumers and government establish how to split domestic public and private consumptions between home-produced and imported varieties. Once disposable savings have determined investments, firms decide how many capital goods to import or buy domestically. Consumers, government and firms define optimal consumption and investment demands by minimising the cost of acquiring a unit of any single “Armington” good. The so-called “Armington” function, a CES function in general, describes how home-produced and imported varieties are combined to produce the “Armington” good.

The CET part of the story models the supply side of the economy. According to this part, once the production process is over and production costs minimised, domestic firms may either sell their output on the domestic market or export it so as to maximise revenues. Since both consumer tastes and/or international regulatory regimes may differ, switching from domestic sales to export is costly, and the two options are imperfect substitutes. Domestic producers deal with a smooth transformation frontier, the “Constant

Elasticity of Transformation" (CET) function: they will define domestic supply and exports according to relative prices prevailing on domestic and foreign markets.

In the context of our analysis, two properties of the Armington/CET apparatus are worth stressing.

1) The Armington/CET apparatus assumes imperfect substitution among domestic and imported varieties (domestic supply and exports) of the same kind of product. Accordingly, smooth consumption, production and allocation decisions characterise economic behaviours in each sector of the economy. Moreover and above all, *intra-industry* trade emerges as a relevant aspect of trade relations.⁴

2) The two-stage maximisation process of the Armington/CET apparatus requires linearly homogeneous second-stage Armington/CET functions. Expenditures (sales) on home-produced and imported varieties of a given product category (on domestic markets or foreign markets) depend exclusively on relative prices. In the case of the "Armington" part of the story, changes in real income have no direct effects on expenditure allocation, so that home-produced and imported goods implicitly have equal income elasticities. In the CET scheme, changes in production levels will be equally distributed among domestic and foreign sales unless, relative price variations will take place.

Regarding the first point, and on the basis of the data in Table 1 and the trade dynamics in **Figure 2**, between 1996 and 2007 Palestinian imports were six times higher than Palestinian exports. Due both to the underdevelopment of the Palestinian productive system and to its incapacity to satisfy domestic needs, Palestinian imports largely consisted in *non-competitive* imports, for both consumption and investment purposes. Palestinian exports, on the contrary, were much more concentrated in poorly-processed low-skilled labour-intensive goods, such as clothes, footwear and natural resource products. In the given period, exports of construction materials (non-metallic products in the SITC Rev.3 classification) accounted for 25% of total Palestinian exports. On the basis of these figures, the World Bank itself states that evidence exists as to "the lack of participation in intra-industry or intra-product trade of the Palestinian economy (World Bank 2007)".

In this paper, we calculate the well-known Grubel-Lloyd (GL) index for the Palestinian economy in the 1996 to 2007 period, in order to compute the relevance of

⁴ It is worth mentioning that the Armington assumption was originally elaborated by Paul Armington (1969) in order to reconcile theory with empirical evidence and to model the importance of intra-industry trade in statistical data.

intra-industry trade in Palestinian trade relations. We calculate it both at the industry and at the economy-wide levels:

$$GL_{ij} = 1 - \left(\frac{|E_{ij} - M_{ij}|}{(E_{ij} + M_{ij})} \right) \quad \text{Industry-Level Grubel-Lloyd Index}$$

$$GL_j = \sum_{i=1}^n \phi_{ij} \left(1 - \frac{|E_{ij} - M_{ij}|}{(E_{ij} + M_{ij})} \right) \quad \text{with} \quad \phi_{ij} = \frac{(E_{ij} + M_{ij})}{\sum_{i=1}^n (E_{ij} + M_{ij})} \quad \text{Economy-wide Grubel-Lloyd Index}$$

E_{ij} and M_{ij} are respectively export and import flows of good (industry) i and country j to and from the rest of the world. GL index values close to one mean that intra-industry trade plays a significant role in explaining trade relationships. In contrast, GL index values close to zero indicate the prevailing inter-industry nature of trade relations.

The results obtained are reported in Table 3. According to our findings, macro-aggregated level reveals intra-industry trade generally accounting for less than one-fourth of Palestinian trade, and its incidence as declining between 1996 and 2007. At industry level, the lack of intra-industry trade often appears to be even more evident. It is practically non-existent for machinery and equipment (SITC code 7), as well as for primary commodities (SITC 0+1+2+3+4+68), food items (0+1+22+4) and fuels (SITC 3).

On the basis of these data, it is reasonable to question whether the Armington/CET framework is a useful and appropriate theoretical apparatus to model Palestinian trade. Actually, although conceived to describe intra-industry trade, it ends up formalising prevalently inter-industry flows when applied to the Palestinian scenario. Its internal technicalities are such that the Armington/CET model may explain the inter-industry nature of Palestinian trade only if one posits specific but perhaps unrealistic economic and/or parametrical scenarios. Three such scenarios come to mind. First, one-way trade may emerge as a result of extreme relative price ratios between home-produced and foreign products which tend towards zero or infinity. Second, we may assume extreme values for the elasticities of substitution between domestic and imported goods. In this case, however, we completely lose the in-depth meaning of the Armington/CET model, which relies on the assumption of imperfect substitutability between domestic and foreign

products, i.e. positive but finite values for the elasticity of substitution (transformation) in the Armington(CET) function. Finally, one-way trade may depend on extreme values, approaching zero or one, for the Armington/CET “share” parameters.

3.2. The determinants of spending ratios in the Armington model: The relative importance of price and income factors

The Armington/CET technicalities imply the adoption of linearly homogeneous Armington/CET functions at the second stage of the utility/profit maximisation process. As to the Armington part of the story, let us assume a CES Armington function within a simple one-sector Palestinian economy. We thus obtain:

$$\frac{(PD * XD)}{(PM * XM)} = \left(\frac{\alpha}{1 - \alpha} \right)^\sigma \left(\frac{PD}{PM} \right)^{1 - \sigma} \quad (1)$$

Equation (1) describes the Palestinian expenditure ratio between the home-produced and imported good. PD is the price of the Palestinian good in the domestic market, PM the price of the imported variety. XD stands for the quantity of Palestinian goods sold domestically and XM are real imports. Finally, Parameters α and σ are the share parameter and the elasticity of substitution in the CES Armington function.

On the basis of equation (1), two theoretical consequences of the Armington apparatus need to be stressed. First, expenditure allocation between domestic and imported goods depends directly on relative prices alone, the positive or negative sign of such a relationship depending on the value of the elasticity of substitution σ . Values of σ higher than 1 will induce the expenditure ratio $((PD * XD)/(PM * XM))$ to react negatively to increases in the price ratio (PD/PM) . Elasticity of substitution values lower than 1, on the contrary, will define a positive relationship between $((PD * XD)/(PM * XM))$ and (PD/PM) . In this regard, Astrup and Dessus (2001; 2005) assume parameter σ to be far above 1, so that a negative relationship should connect $((PD * XD)/(PM * XM))$ to (PD/PM) . Second, following Winters (1984), the Armington technicalities imply that “the within group budget shares are independent of group expenditures, i.e. the income elasticities of all goods within a group are equal (Winters, 1984)”. Unless income affects relative prices, income changes will not have any effect on expenditure allocation

between domestic and imported goods. According to Winters (1984), "this is very restrictive, especially in the context of international trade (Winters 1984)".

A first look at empirical data seems to confirm that Winters' criticism has some validity when referred to the Palestinian case, and it casts doubt on the ability of equation (1) to explain expenditure ratios in Palestine. In **Figures 3, 4 and 5**, we portray the dynamics of the Palestinian expenditure ratio between domestic and imported goods, and relate them to both relative prices and income dynamics. In **Figure 3**, we adopt a macro-aggregated perspective, whilst **Figures 4 and 5** respectively focus on manufacturing and agriculture. We use the wholesale price index for domestic and imported goods provided by PCBS (1999 – 2008) to compute the price ratio (PD/PM). Data on real Palestinian GDP are used to capture the role of domestic income variables in determining expenditure allocation ratios.

At a macro-aggregated level (**Figure 3**), the relative price ratio remains reasonably stable throughout the period considered. However, the Palestinian expenditure ratio shows huge fluctuations, and hence appears to be largely delinked from relative prices. When real income dynamics enter the picture, expenditure choices between domestic and foreign goods appear to be much more dependent on income dynamics than on price changes. **Figure 3** seems to support the idea of strong negative relationships between income dynamics and expenditure choices. Regardless of movements in relative prices, increases in real GDP in phases of economic recovery seem to provoke large increases in expenditures on foreign goods, much larger than expenditures on domestic products. In contrast, abrupt reductions in real GDP may induce sharp switches from imported goods to home-produced products.

Broadly similar numbers emerge in **Figure 4**, in which we focus on manufacturing. The price ratio (PD_m/PM_m) now shows a slight downward trend between 1997 and 2007. In contrast, expenditure allocation ratio between domestic manufactured and foreign goods show substantial fluctuations. These dynamics are somewhat puzzling from the standpoint of the AD model. According to equation (1) and the connected parametrical assumptions, we would expect the expenditure ratio ($PD \cdot XD_m / PM \cdot XM_m$) to increase constantly when the price ratio decreases. **Figure 4** clearly shows that this does not happen during most of the period considered.⁵

⁵ The counter-intuitive relationship between expenditure ratios and relative prices that often emerges from data might possibly be explained by an Armington elasticity of substitution value lower than 1. Such a value, however, implies in-depth consequences on the effects of trade liberalisation policies on domestic welfare. According to Taylor and von Armin (2007), low Armington elasticity of substitution values strongly reduce (cont.)

Again, the discrepancy between empirical evidence and theoretical implications of the AD model may be solved by the consideration of additional factors, other than relative prices, as explanations for Palestinian expenditure ratios. Real GDP is the best candidate for the additional factor role. When real GDP is included in our picture, a strong negative relationship seems to connect real GDP dynamics to the Palestinian expenditure ratio on manufactured goods. Such a relationship seems to be confirmed and supported by the Peres Centre for Peace: “The Level of Israeli exports to the PA is determined by: (1) the overall level of economic activity in the PA at large; and (2) the overall level of household incomes and their purchasing power. A decline in Palestinian economic activity is immediately reflected in a decreased level of imports of inputs and equipment and a decline in incomes and purchasing power is translated into a decrease in import of non-basic food and other consumption products (Peres Centre for Peace 2006)”.

Our data on the agricultural sector are less conclusive than those presented for other sectors. The expenditure ratio on agricultural products still seems to be largely independent from the relative price ratio, and its evolution appears to be elusive to the mechanisms of the AD model. Whilst its evolution shows a pretty stable upward trend, Palestinian expenditure ratio on agricultural products fluctuates hugely. The use of real domestic GDP as additional explanatory factor is less productive than it was in the previous cases. This result is fairly predictable, given that agricultural goods consist of basic-need products whose consumption is more stable and less sensitive to price and income fluctuations. However, a negative link between real GDP and the expenditure ratio on agricultural goods generally emerges from the data portrayed in *Figure 5*.

As to the supply side of the World Bank model, equation (2) below determines the CET allocation ratio of domestic output between domestic and foreign markets:

$$\frac{(PE * XE)}{(PD * XD)} = \left(\frac{1 - \mu}{\mu} \right)^{\theta} \left(\frac{PD}{PE} \right)^{1 - \theta} \quad (2)$$

In equation (2), PE stands for the foreign price of Palestinian exported output and XE are Palestinian exports. Parameters θ and μ are the elasticity of transformation and the

the improvements in social welfare that derive from trade liberalisation measures, and possibly reverse them when domestic taxes have to increase in order to offset reductions in import tariffs and to ensure public budget equilibrium.

"share" parameter in the CET function. Astrup and Dessus (2001) assume the elasticity of transformation θ to be equal to five. Accordingly, rising values for the relative price (PE/PD) should induce Palestinian firms to sell more abroad and less at home: the CET allocation ratio $((PE*XE)/(PD*XM))$ should increase.

In **Figure 6**, we plot the dynamics both of the relative price ratio (PE/PD) and of the ratio of Palestinian exports to domestic sales between 1997 and 2007. The data exclusively regard the manufacturing sector. As Israel is by far the most important market for Palestinian exports, we assume the wholesale price index of the Israeli manufacturing sector to be a proxy for the export price PE . In line with the assumption of the AD model, we assume PE to be exogenous. Empirical evidence from **Figure 6** shows that reality produced the reverse of what we expected. Between 1997 and 2007, the relative price ratio (PE/PD) constantly increased so that $((PE*XE)/(PD*XD))$ would have been expected to increase as well. Almost the opposite occurred: the Palestinian export ratio decreased slightly, or remained constant, over most of the period considered.

Neither Israeli real GDP nor Palestinian GDP seems to help explain this evolution. Between 1997 and 2007, for instance, Israeli real GDP generally increased, so an additional positive factor might have been expected to induce Palestinian manufacturing exports and the corresponding allocation ratio to rise.

This dilemma may be resolved if we consider that Palestinian exports are largely affected by extra-economic factors. According to Akkaya *et al.* (2008), increasing Israeli security and closure measures have reduced the ability of Palestinian exporters to honour foreign contracts. The rising uncertainty associated with Palestinian exports has shifted foreign preferences towards non-Palestinian products. Further, the reduction of Israeli trade tariffs has also favoured the substitution of Palestinian goods with competing third-country products. Finally, Palestinian exports have been curtailed by overwhelming Israeli quality requirements, which act as non-tariff protectionist measures (World Bank 2007). In this context, Palestinian exports are mostly determined exogenously and their ratio on domestic sales is de-linked from, and not responding to, relative price changes. The same holds for income dynamics.

In Table 4 we present the results of a simple econometric evaluation of the points considered above. Of course, lack of data strongly jeopardises the relevance and the robustness of most econometric analyses on Palestinian trade issues. The results shown in Table 4 must therefore be treated with extreme caution; they are presented and intended only as a rough and intuitive assessment of the degree to which the Armington/CET assumptions are coherent with Palestinian reality. We analyse Palestinian expenditure and

sale allocation ratios between 1997 and 2007 by means of a standard OLS linear model, and we test the significance of income and price variables as explanations to Palestinian allocation decisions. All variables considered are expressed in log terms. We use data on Palestinian and Israeli real GDP, indexed to their 1996 value, as a proxy for income variables. Wholesale price indexes for home-produced and imported goods from PCBS (1999 – 2008) and ICBS (2009) are used to compute relative prices. Obviously, the outbreak of the Second Intifada and Hamas' 2006 electoral win may have influenced Palestinian allocation decisions through both direct and indirect effects on Palestinian economic activity. We use ad-hoc dummy variables to get such effects.

In Table 4, regression (1) tests the basic Armington assumption, and assumes relative prices to be the unique explanatory variable for expenditure ratios. Regression (2), in contrast, assumes Palestinian real GDP to be the unique explanatory variable. Regression (3) introduces dummy variables to consider the direct and indirect consequences of the Israeli-Palestinian conflict and of Palestinian political elections. Regression (4) is a fully extended regression that includes price, income and dummy variables. Regressions (5) and (6) respectively restrict analysis to the manufacturing and agricultural sectors. Finally, regression (7) tests the CET assumption on sale allocation.

The results reported in Table 4 largely conform to expectations. In regression (1), relative prices appear not to be significant as explanations for Palestinian expenditure ratio at the 95 percent confidence level. The explicative power of regression (2) is much higher. From regression (2) to regression (4), the "Palestinian real GDP" variable shows the expected negative sign, and it invariably provides significant explanation for Palestinian expenditure allocation. In contrast, relative prices do not appear significant in regression (4). Regression (5), which restricts analysis to the manufacturing sector, shows both domestic GDP and relative prices to be significant explanatory variables for expenditure allocation on manufactured goods with the expected negative signs. Regression (6) focuses on the agricultural sector, and none of the variables considered proved to be significant as explanations for Palestinian expenditure allocation on agricultural products. This finding appears to be in line with evidence cited above according to which expenditure allocation on agricultural perhaps basic-need goods is far less sensitive to fluctuations in both income and relative prices. Finally, regression (7) shows relative CET prices, Palestinian GDP and Israeli GDP to be unanimously insignificant as explanations for the allocation of Palestinian output between domestic markets and exports. The negative and significant intercept coefficient in regression (7) may prove that Palestinian exports (compared to domestic sales) are largely influenced by

the long-lasting extra-economic conditions (i.e. Israeli-imposed administrative and physical restrictions) imposed on the economic and political environment by the Israeli-Palestinian conflict.

In summary, our findings suggest it is reasonable to argue that income variables, here captured by Palestinian real GDP, appear to exert a non-negligible influence on Palestinian expenditure allocation between imported and home-produced goods. In contrast, relative prices often play a minor role. A standard Armington model totally overlooks this point, and accordingly needs amendments to make it resemble the Palestinian context more closely. Additionally, Palestine’s political and economic environment imposes substantial extra-economic constraints on Palestinian firms’ decisions to export or sell on domestic markets; these decisions are therefore largely insensitive to fluctuations in CET-type relative prices or income variables. This point should obviously be borne in mind in future attempts to elaborate a quantitative theoretical model whose aim is to resemble the Palestinian economy as close as possible. Specifically, an ad-hoc export function might enable future models to better capture the peculiarities of the Palestinian context. At the very least, the CET approach should be modified so that it accounts for the exogenous factors that influence sale allocation decisions by Palestinian firms and that reduce such decisions’ responsiveness to changes in relative prices.

3.2.1 Income and relative price linkages in the AD model.

In the AD model, changes in real income and production level do not *directly* affect expenditure (sale) allocation between domestic and foreign goods (domestic and foreign markets). Nevertheless, it might be argued, they might play an *indirect* role and influence expenditure (sale) ratios by modifying relative prices. Let us try to capture this point through a simple theoretical exercise.

Take the one-sector model assumed above and the foreign trade block of the AD model as described by the Armington/CET apparatus. We have:

$$P = \left\{ \left[\eta^\beta PL^{(1-\beta)} + (1-\eta)^\beta PK^{(1-\beta)} \right]^{1/(1-\beta)} \right\} / A \quad (3)$$

$$P = \left[\mu^\theta PD^{(1-\theta)} + (1-\mu)^\theta PE^{(1-\theta)} \right]^{1/(1-\theta)} \quad (4)$$

$$\frac{XD}{XM} = \left(\frac{\alpha}{1-\alpha} \frac{PM}{PD} \right)^\sigma \quad (5)$$

$$\frac{XD}{XE} = \left(\frac{\mu}{1-\mu} \frac{PD}{PE} \right)^\theta \quad (6)$$

Equation (3) describes the price “ P ” of the domestic good as obtained by production cost minimisation, η being the share parameter of labour and β the elasticity of substitution between labour and capital in the domestic CES production function. Parameter A stands for the Total Factor Productivity of domestic inputs. Equation (4) is the dual price function from the CET-constrained allocation of domestic output between domestic and foreign sales. Finally, equations (5) and (6) establish real expenditure (sale) ratios according to the Armington/CET argument.

Because of its neoclassical framework, the AD model assumes real income to be set according to the full-employment condition of available inputs. Hence, changes in real income come from variations in the disposal of productive inputs or technological progress. Let us consider this last possibility and assume Total Factor Productivity A to increase.⁶ By totally differentiating equations (3), (4), (5) and (6), and expressing variations in percentage terms, we get:

$$\hat{P} = -\hat{A} \quad (3.A)$$

$$\hat{PD} = \nu \hat{P} \quad \text{with } \nu = \frac{\left[\mu^\theta PD^{(1-\theta)} + (1-\mu)^\theta PE^{(1-\theta)} \right]}{\mu^\theta PD^{(1-\theta)}} > 1 \quad (4.A)$$

⁶ The effect of different trade policies on technological change is a main issue in WB models. In the theoretical exercise above, we try to assess how technological change, perhaps trade liberalisation-led technological change, may affect relative price and expenditure allocation by increasing real income. Our final goal, of course, is to verify the consistency of the allocation consequences of changes in real income with the empirical evidence on Palestine within the framework of the AD model.

$$(\hat{XD}/\hat{XM}) = -\sigma \hat{PD} \quad (5.A)$$

$$(\hat{XD}/\hat{XE}) = \theta \hat{PD} \quad (6.A)$$

Following Taylor and Von Armin (2007), if nominal wages and profits do not fully absorb variations in input efficiency, technology-led increases in domestic output are immediately reflected in the domestic price P . For the sake of simplicity, let us assume PL and PK do not move, so that in equation (3.A) increases in A are fully passed through reductions in the domestic price P . From equation (4.A), given PE , PD necessarily decreases. In equations (5.A) and (6.A), (XD/XM) will increase whilst (XD/XE) will decrease. Should the elasticity of substitution and transformation be those assumed in the AD model, increases in domestic output, by affecting relative prices, will increase the Palestinian expenditure ratio on home-produced goods and raise Palestinian export ratio over domestic sales. Actually, these changes go in the opposite direction with respect to the empirical data recorded above.

Similar conclusions may arise if we consider variations in the disposal of productive inputs. Following Astrup and Dessus (2005), let us assume Israeli closures increase the domestic availability of labour by impeding Palestinian workers from commuting to Israel in search of better remunerated jobs.⁷ The ensuing consequence is an increase in domestic output, a reduction in the price of labour PL and in the price P of Palestinian output, and a rise in real profits. From equation (5), PD decreases lead both the expenditure ratio $((PD \cdot XD)/(PM \cdot XM))$ and the export-to-domestic sale ratio $((PE \cdot XE)/(PD \cdot XD))$ to increase. Whilst these changes perfectly agree with the results emphasised by Astrup and Dessus (2005), they simply run counterfactual to data on the Palestinian economy.

Finally, let us try to consider the destructive effects of political turmoil and military conflicts on the available capital stock. Following Astrup and Dessus (2005), a lower supply of capital will reduce production and increase the real profit rate. If the tradable-good sector is relatively capital-intensive (see Astrup and Dessus (2005)), increases in P and PD likely follow from equations (3) and (4). Accordingly, (XD/XM) will decrease in equation (5) and (XD/XE) increase in equation (6). Despite their theoretical adherence

⁷ See also Missaglia and De Bour (2004) for an extended version of the AD model including the Harris-Todaro assumption and allowing for Palestinian unemployment.

with the neoclassical framework of the AD model, these changes in expenditure (sale) ratio are not supported by the empirical evidence cited above.⁸

4. A Heterodox Perspective on Palestine

Heterodox economics is a huge body of variegated and heterogeneous theories. Accordingly, heterodox models, and CGE models in particular, do not present a unique and well-defined framework. However, certain common aspects distinguish them from standard neoclassical models such as the World Bank CGE model on Palestine. Following Taylor (1991), we can envisage a brief list of departures from mainstream models that would take at least three main points into account. First, prices are often set according to a mark-up rule on variable costs rather than to dual cost functions derived from minimising procedures; moreover, quantity-driven adjustments are introduced alongside price-driven adjustments. Second, the saving-investment nexus is reversed, so that investments now determine savings. Third, the macro-economic equilibrium is demand-constrained rather than supply-constrained: full-employment is an occasional feature rather than a well-established rule of macroeconomic equilibria.

On the basis of these points, **Figure 7** provides a sketchy description of the Palestinian economy as conceived by a hypothetical heterodox/structuralist CGE model. We persist in assuming a simple, one-sector economy. On the right-hand side of **Figure 7**, we portray the supply side of the economy by assuming a Kaleckian cost-plus price determination function. Diverging from usual practice and according to the “small country assumption” adopted above, here we assume the domestic price \bar{P} to be set exogenously on foreign markets. Given the price of labour PL in the short run, which is determined by institutional factors and/or is due to a Lewis-type argument, the mark-up rate τ (and the profit share π) adjusts endogenously to determine profits.⁹

⁸ Actually, this is only a potential outcome of the AD model. In the neoclassical approach, relative prices matter, so that nominal variables may move in several different directions. The result sketched in the main text, however, is perfectly plausible, and stresses the gap that may divide the AD description of Palestine from the concrete functioning of its economy.

⁹ In a more complex model, our simple cost-plus function could be extended to account for high transportation costs in Palestine. Interestingly, the combination of exogenous prices and high transportation costs, by inducing low mark-up rates, may explain the low profitability and the ensuing lack of investment opportunities in Palestine.

On the left-hand side of **Figure 7**, we describe the demand side of the economy. Domestic households derive consumption demands and aggregate savings by maximising the corresponding utility function. Public expenditure " G " constitutes an exogenous policy variable. Finally, domestic firms determine investments through an autonomous investment function " I ". Several ways exist to model investment demand from domestic firms. Here we adopt what is a pretty standard scheme in structuralist literature, and we assume I to depend positively on the level of capacity utilisation " u " (Taylor 2004). *Ceteris paribus*, the higher the degree of utilisation of installed capital stock is, the higher firms' demand for new capital goods will be. Moreover, for any given value of the profit share π , the higher u is, the higher the profit rate r and entrepreneurs' willingness to invest will be.

As far as foreign trade is concerned, structuralist CGE models have an eclectic perspective and do not share a standard modelling strategy. Foreign trade blocks frequently change according to the economic reality under observation. Taylor (1991), for instance, assumes import (export) flows to be positive (negative) functions of the ratio between domestic and foreign prices, price elasticities being the results of econometric analyses. Jorn Rattso and Ragnar Torvik (1998), Gibson and Van Seventer (2000) adopt more complex frameworks when modelling the economies of Zimbabwe and South Africa, respectively. As to expenditure allocation between domestic and imported goods, both models introduce the distinction between competitive and non-competitive imports. In the first case, a standard Armington apparatus is assumed, so that only relative prices matter to establish intra-group expenditures between competing varieties of the same kind of product. In the case of non-competitive imports, import flows depend on consumption and investment demands, and therefore on income and production levels. Obviously, income and production variables prove to play a direct role in the determination of overall imports flows: the larger the share of non-competitive imports in total imports, the greater the relevance of income and production variables will be in explaining foreign trade. As to the supply side of the tale, authors model export flows according to sectoral peculiarities. In the case of perfectly competitive industries in international markets, exports are the difference between domestic supply and domestic demand, the domestic price being equal to the foreign one. As to oligopolistic sectors, which are mainly industrial sectors, exports depend both on the real exchange rate and on sectoral production capacity.

Finally, a third formalisation strategy is provided by Naastepad (1999) in a structuralist CGE model on India. Naastepad provides an extended version of the Taylor

model in which import (export) flows respond positively to relative prices and to domestic real (foreign) income according to properly estimated price and income elasticities.

Because each of these strategies may address some drawbacks of the standard Armington/CET apparatus, we here adopt a mixture of them in order to reproduce the existing Palestinian trade pattern as close as possible. In **Figure 7**, we abandon the two-stage maximisation process implicit in the Armington/CET scheme and the associated theoretical properties. More in depth, as far as import flows are concerned, we follow Naastepad (1999). Given prices, overall domestic imports are a positive function of domestic real income X through the income elasticity γ_I . This is formally stated in equation (7) below:

$$XM = \gamma_0 X^{\gamma_I} \quad (7)$$

As to export flows, here we model them in equation (8) as a constant share (ξ) out of domestic production:

$$XE = \xi X \quad (8)$$

In equation (8), parameter ξ stands for the share of domestic output exported abroad. We take it as exogenous and linked to the peculiar conditions and restrictions Palestinian firms experience in marketing their products. Of course, this is a rough and overly simple representation of Palestinian trade. It may be modified in several ways to account for relative prices. Further, it aims at representing the current status of Palestinian trade and it may be subjected to in-depth revisions should conditions on the ground modify, and the factors affecting trade flows change. However, equations (7) and (8) may help models to capture the missing factors stated above and overcome some shortcomings in the World Bank model. In section 4.1 below we will show how equations (7) and (8) may allow us to explicitly account for income and extra-economic factors, i.e. the political factors deriving from the Israeli-Palestinian conflict, as relevant explicative variables of expenditure (sale) ratios between domestic and imported goods (between domestic sale and exports).

In the bottom part of **Figure 7**, we set the equation for the macroeconomic equilibrium of our simple one-sector Palestinian economy. Macroeconomic equilibrium is

achieved when aggregate demand is equal to aggregate supply. In Accordance with the structuralist theory, we describe a demand-driven Palestinian economy. Given the installed capital stock K , aggregate output X and capacity utilisation u adjust endogenously to satisfy effective demand and to ensure market equilibrium. Once X and u are determined, and given the labour coefficient " b " in the short run, labour demand and the employment level follow automatically. Nothing ensures that full employment will occur. In contrast, aggregate demand may be well below the full-employment level and full employment appears as an episode rather than the distinguishing feature of the macroeconomic equilibrium.

Even though such adjustment mechanisms are typical features of the heterodox/structuralist approach, multi-sector heterodox/structuralist CGE models may provide more complex scenarios. On the one hand, price-driven adjustments may equilibrate flexi-price competitive sectors. On the other hand, quantity-driven adjustments hold true on fixed-price oligopolistic sectors (Kraev 2003). The emerging picture is complicated even further if intermediate inputs are considered, so that price changes may spread throughout the economy and affect quantity-adjusting sectors through the mark-up price setting rule.

4.1. Advantages of a Structuralist Perspective on Palestine

What advantages does the structuralist perspective on Palestine here described offer? In our opinion, at least two.

With regard to the first, this paper provides evidence on the Keynesian nature of certain phenomena characterising the Palestinian economy. Persistent mass unemployment and output gaps seem to depend on the lack of effective demand for Palestinian goods (World Bank 2004). The underdevelopment of the local productive system and overdependence on foreign imports for both consumption and production needs link domestic prices tightly to foreign ones, and render them largely insensitive to macroeconomic imbalances. As a consequence, quantity-driven adjustments seem far more important than price-driven adjustments within the Palestinian economy; production levels and capacity utilisation emerge as endogenous economic variables that determine macroeconomic equilibrium. Of course, a pure neoclassical framework is unlikely to capture this point. A structuralist model may be of help by considering a wide range of adjustment mechanisms and by providing a more comprehensive description of Palestine. The combination of fixed-price and flex-price markets into multi-sector structuralist

models may respond to the rising demand among CGE modellers for various adjustment mechanisms and hybrid macro closures (Kraev 2003).

Regarding trade issues, our departure from the Armington/CET apparatus has deep implications on the description of expenditure (sale) allocation ratios. As to the demand side of the story, once import and export functions (7) and (8) are considered, the expenditure ratio between home-produced and imported goods reads as follows:

$$\frac{\bar{P} * XD}{\bar{P} * XM} = \frac{(X - XE)}{XM} = \frac{(1 - \xi)}{\gamma_0} X^{(1 - \gamma_1)} \quad (9)$$

In equation (9) relative prices prove to be irrelevant to determine the Palestinian expenditure ratio. In contrast, real income, and therefore its fluctuations, now plays a *direct* and significant role. In particular, should the imports' income elasticity γ_1 be larger than 1, a negative relationship links the expenditure ratio ($\bar{P}XD / \bar{P}XM$) to real GDP X . We think equation (9) and the assumption of a high income elasticity of Palestinian imports enable us to capture some important aspects of the Palestinian trade pattern and of Palestinian expenditure allocations. On the one hand, these assumptions seem to fit well with the data reported above and to agree with recent literature on Palestine (FEMISE 2006). On the other hand, it makes sense to assume Palestinian imports' income elasticity γ_1 to be larger than 1. Import income elasticity, we know, relies on the degree of development of the domestic productive system, the availability of domestic substitutes for imported goods and dependence on non-competitive imports (Cimoli 1994). In backward economies whose domestic needs are largely satisfied by imported goods, import flows can be reasonably expected to be highly sensitive to changes in domestic income. This seems to be the case of the Palestinian economy. A brief evaluation in Palestinian import income elasticity through a simple OLS model (see Table 5) shows that Palestinian import income elasticity is significant and approximately equal to 1.98, (at 95 percent confident level), whilst relative prices appear to be irrelevant (see regression (2) in Table 5).¹⁰

¹⁰ All economic variables in regressions (1) and (2) in Table 5 are indexed to the corresponding 1996 value and expressed in log-terms. Two dummy variables are used to get the effects on regression intercept and income variables of the outbreak of the Second Intifada and of the political turbulences resulting from the 2006 Palestinian political elections.

For the distribution of Palestinian firms’ sales between domestic and foreign markets, equation (10) below determines the corresponding sale ratio :

$$\frac{\bar{P} * XD}{\bar{P} * XE} = \frac{X - XE}{XE} = \frac{X - \xi X}{X} = \frac{(1 - \xi)}{\xi} \quad (10)$$

According to our assumptions on export flows, the ratio of domestic sales to foreign sales proves to be constant and exogenous. It is completely determined by parameter ξ , which represents the overwhelming exogenous factors that influence Palestinian firms’ access to domestic and foreign markets. In this regard, we emphatically recognise that such a description of Palestinian firms’ sale allocation cannot be considered to be universally true, and may well be inappropriate for the modelling of country scenarios that differ from current Palestine. What matters here, however, is the degree to which the model fits Palestine’s circumstances. Palestine export ratio (on domestic sales) now seems largely to behave independently from both price and income factors and to reflect political and extra-economic factors. Should these factors endure and continue to shape the behaviour of Palestinian firms, our description of Palestinian export flows, although rough, may perhaps capture some aspects of the Palestinian economy. This description be seen as an alternative to the CET scheme adopted in the AD model.

The structuralist one-sector model we present provides an extremely simplified picture of Palestine. Inevitably, it cannot grasp complexity in full. Our simple cost-plus-cum-exogenous-price function, for instance, is a rough way to describe price formation. However, it may highlight some possibly important aspects that are neglected in the AD model. The assumption of an exogenous price level \bar{P} and of relatively high transport costs, together with the introduction of an independent investment demand function, can easily explain the lack of productive investments in Palestine. Poor domestic investments prove not to be saving-constrained (World Bank 2007), but to depend on the lack of profit opportunities and comparatively low profit rates in comparison with those prevailing in foreign countries, which in turn induce domestic operators to invest their capital abroad (World Bank 2007; Valensisi and Missaglia 2010). Unlike the AD model, our alternative model at least partially captures the emerging Keynesian nature of the Palestinian economy.

5. Conclusions

The World Bank CGE model on Palestine by Claus Astrup and Sebastian Dessus (the AD model in this paper) is a standard real-side neoclassical CG model. It describes a price-driven economy in which relative prices freely adjust to ensure macroeconomic equilibrium, productive factors are fully utilised, and savings determine investments. The well-known Armington/CET apparatus is used to model the foreign trade block, so that intra-industry trade appears as a substantial component of the Palestinian trade pattern.

However, some theoretical implications of the AD model seem to be at odds with data and with empirical evidence on Palestine. First, the Palestinian price system seems to be sticky, and to react slowly to macroeconomic imbalances. Quantity-driven adjustments seem to prevail over price-driven adjustments in the determination of macroeconomic equilibrium. Further, the full-employment condition of available inputs is far from being reached, and massive Palestinian unemployment persists. A lack of effective demand is a plausible explanation for this problem (World Bank 2004). Last but not least, Palestine's trade pattern does not follow the stylised facts implied by the technicalities of the Armington/CET apparatus. Intra-industry trade is generally irrelevant, whilst inter-industry trade represents more than 75% of trade flows. Relative prices barely influence expenditure and sale allocation ratios. As to the Armington part of the story, income fluctuations appear far more explicative of changes in expenditure allocation ratios than are price variations. As to sale allocation decisions by Palestinian firms, overwhelming politically derived factors, i.e. the economic consequences of the Palestinian-Israeli conflicts, exert enormous influence and make such decisions independent of economic variables. Overall, the picture that emerges is one of a Palestinian economy that shows some *Keynesian* features. This may well require a theoretical model that incorporates some heterodox stances.

We describe some basic aspects of a hypothetical structuralist model on Palestine. On the one hand, we stress the proximity between the Keynesian spirit of structuralist CGE models and certain phenomena that characterise Palestine. The introduction of fix-price markets and quantity-driven adjustments in place of, or in addition to, price-driven adjustments enables structuralist models to capture some adjustment processes at work within the Palestinian economy. On the other hand, the departure from the technicalities of the Armington/CET apparatus helps to solve the inconsistencies raised above. In this sense, the introduction of simple import and export functions allows us to reconcile theoretical insights with empirical data and to depict the role of real variables, income

variables in particular, as main explicative factors for imports flows and expenditure allocation decisions. On these bases, we believe that a structuralist CGE model may be a more appropriate tool with which describe the Palestinian economy than a strictly neoclassical model.

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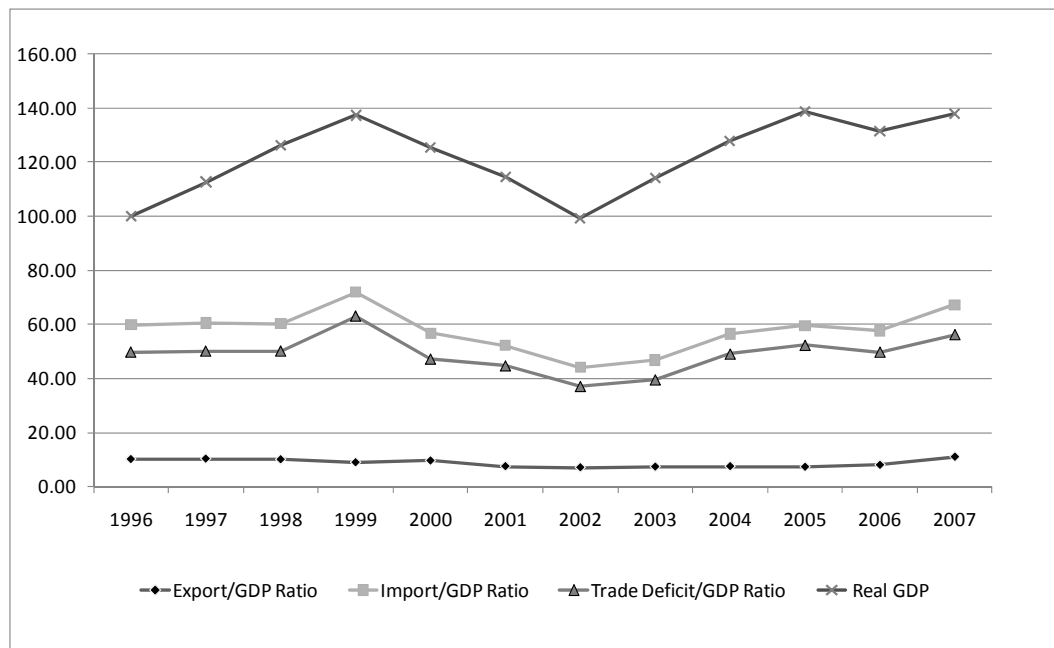
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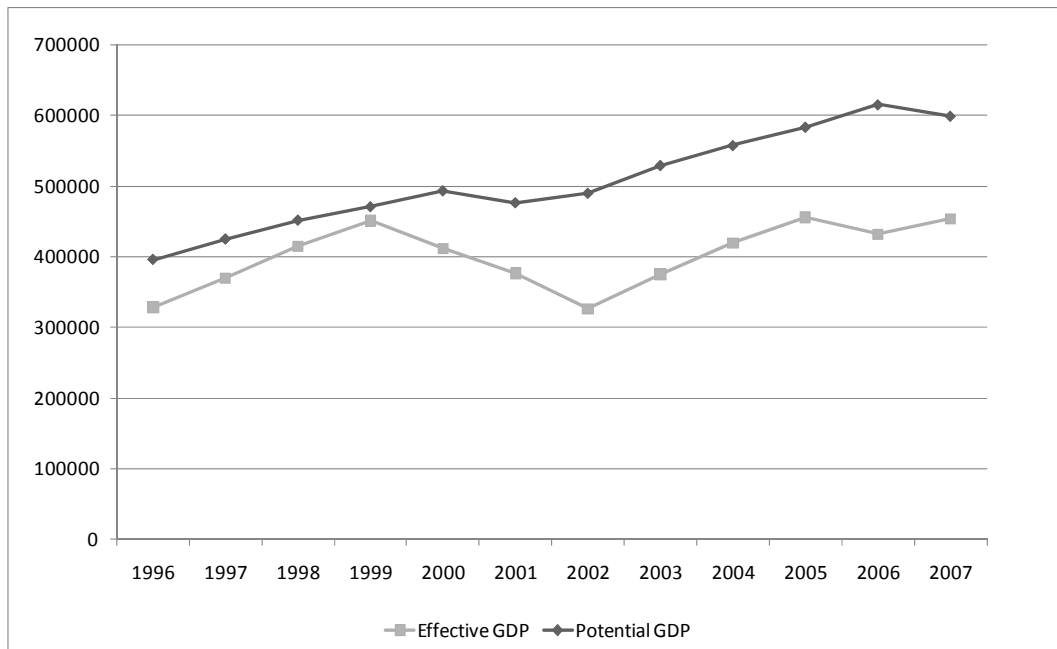
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Figures

Figure 1: The Palestinian trade pattern, 1996 – 2007.

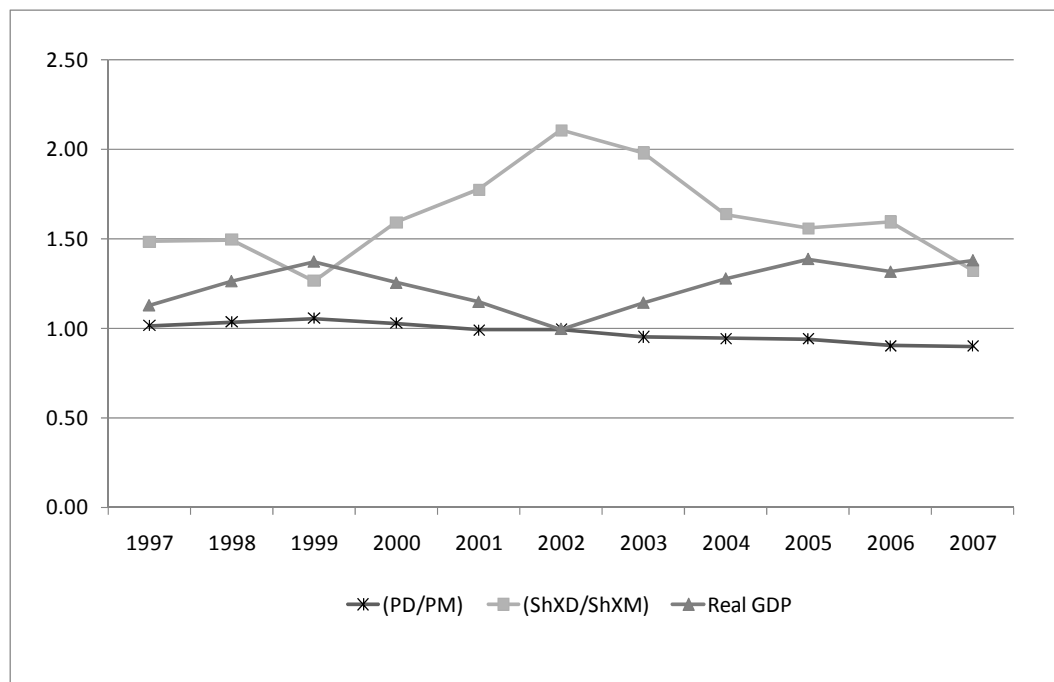


Source: Author's elaboration on data from PCBS (2009a).

Figure 2: Palestinian Potential and Effective GDP, 1996 – 2007.

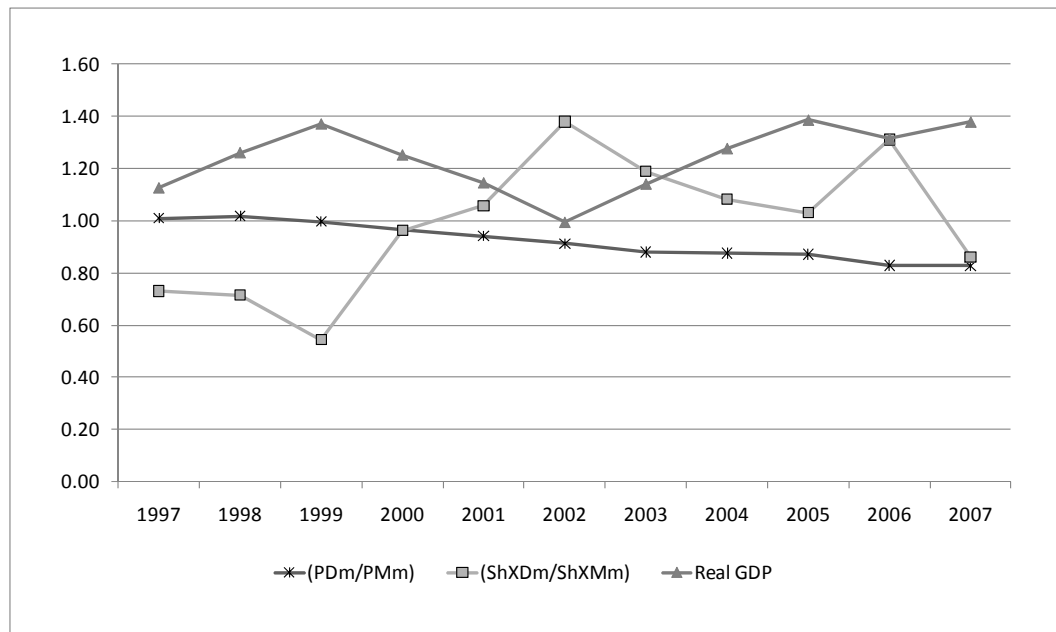
Source: Author's elaboration on data from PCBS (2009a, 2009b) and UNCTAD (2009).

Figure 3: Expenditure allocation ratio, home-produced and imported goods price ratio and Real GDP dynamics in Palestine, 1997 – 2007 (overall economy).



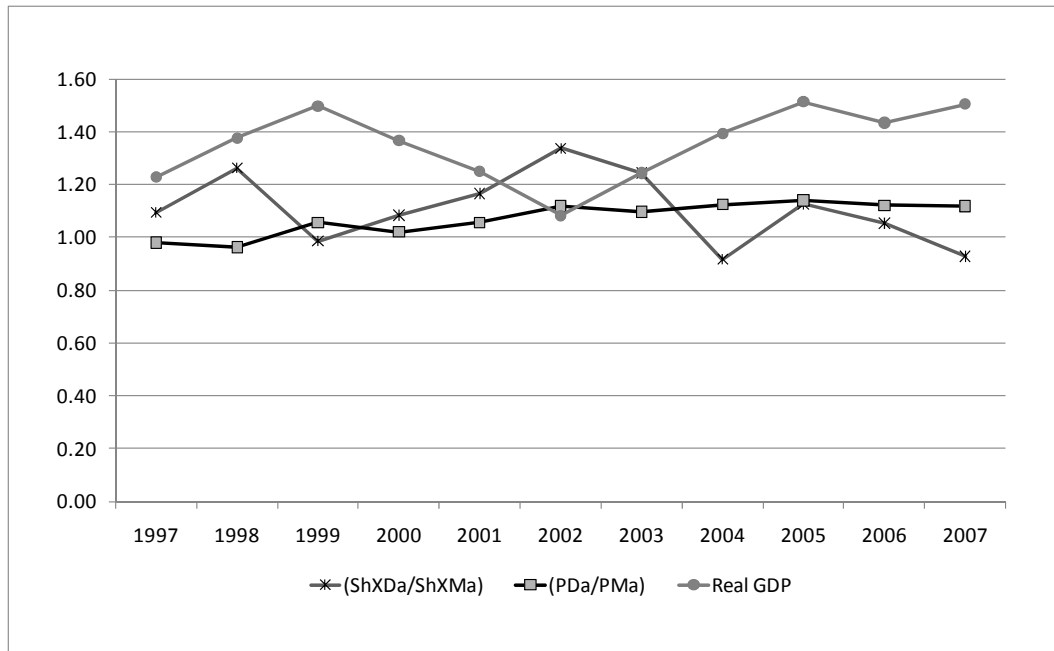
Source: Author's elaboration on data from PCBS (1999 – 2008a, 1999 – 2008b).

Figure 4: Expenditure allocation ratio, home-produced and imported goods price ratio and Real GDP. Dynamics in Palestine, 1997 – 2007 (manufacturing).



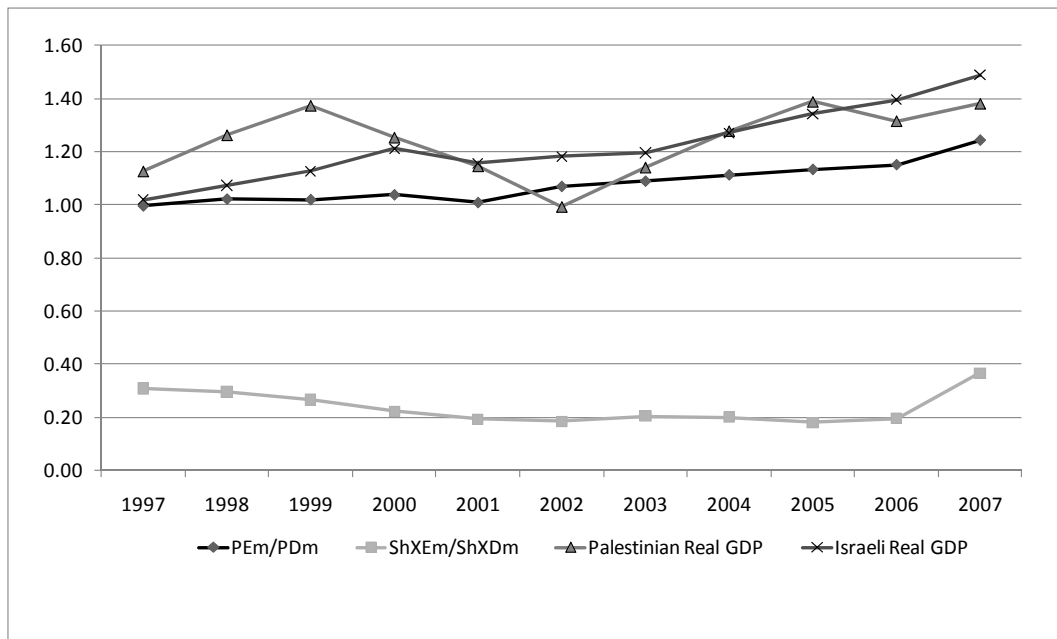
Source: Author's elaboration on data from PCBS (1999 – 2008a, 1999 – 2008b).

Figure 5: Expenditure allocation ratio, home-produced and imported goods price ratio and Real GDP. Dynamics in Palestine, 1997 – 2007 (agriculture).



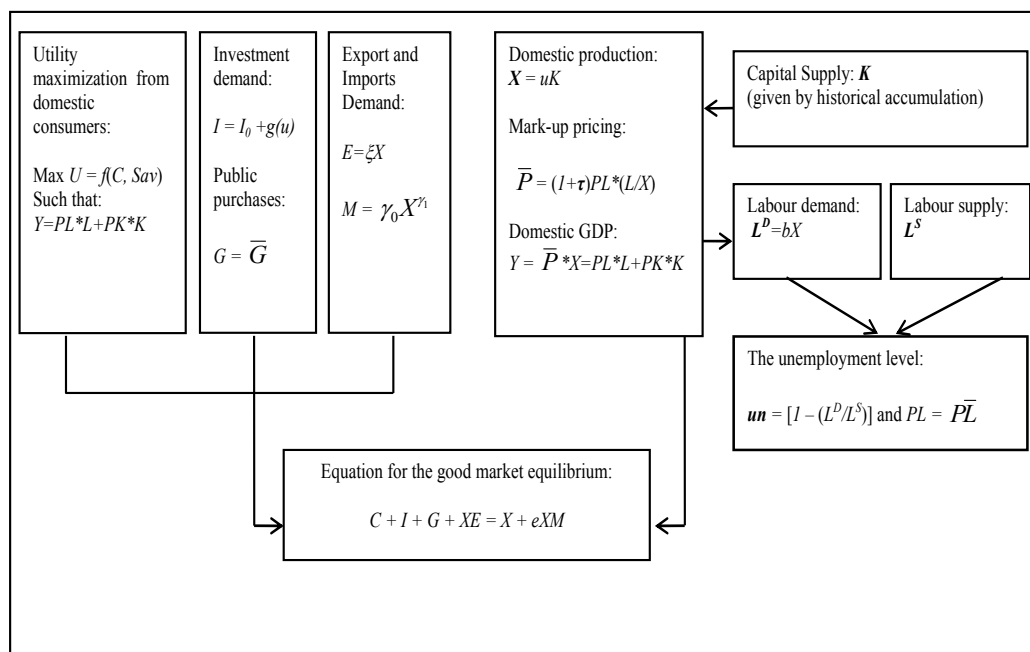
Source: Author's elaboration on data from PCBS (1999 – 2008a, 1999 – 2008b).

Figure 6: Sale allocation ratio between domestic sales and exports in Palestine (manufacturing), 1997 – 2007.



Source: Author's elaboration on data from PCBS (1999 – 2008a, 2009a) and ICBS (2009).

Figure 7: A heterodox/structuralist perspective on Palestine.



Tables

Table 1: Palestinian imports, exports and trade balance (as percentage of GDP), 1996 – 2007.

Year	Exp/GDP ratio	Imp/GDP ratio	Exp/Imp Share	Trade deficit/GDP ratio
1996	10,09	59,91	16,84	49,82
1997	10,28	60,48	16,99	50,20
1998	10,01	60,22	16,62	50,21
1999	8,91	71,97	12,38	63,06
2000	9,56	56,80	16,82	47,24
2001	7,45	52,18	14,28	44,73
2002	7,02	44,15	15,89	37,14
2003	7,28	46,87	15,54	39,59
2004	7,45	56,53	13,18	49,08
2005	7,24	59,53	12,16	52,29
2006	7,94	57,73	13,75	49,79
2007	10,98	67,23	16,33	56,25

Source: Author's calculations on data from PCBS (1999 – 2008a).

Table 2: Relative importance of Palestine and Israel as trade partners, 1996 – 2007.

Year	Palestine		Israel	
	Exports to Israel (Share)	Imports from Israel (Share)	Exports to Palestine (Share)	Imports from Palestine (share)
1996	94,04	86,46	8,57	1,07
1997	94,20	80,56	7,98	1,24
1998	96,62	77,18	7,83	1,39
1999	96,85	61,64	7,19	1,16
2000	92,22	73,00	5,45	1,00
2001	94,02	66,46	4,65	0,82
2002	89,81	73,71	3,79	0,65
2003	91,53	72,75	4,19	0,75
2004	89,91	73,65	4,54	0,68
2005	86,62	70,23	4,41	0,65
2006	89,05	72,58	4,31	0,68
2007	88,74	86,55	4,27	0,80
1996-2007	91,97	74,56	5,60	0,91

Source: Author’s calculations on data from PCBS (1999 – 2008a) and ICBS (2010).

Table 3: G-L index for the Palestinian trade pattern, 1996 – 2007.

SITC Div. Code	Division	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
0+1+2+3+4+68	Primary commodities	0,19	0,19	0,20	0,16	0,17	0,14	0,15	0,14	0,12	0,13	0,11	0,13
0+1+22+4	All food items	0,23	0,21	0,28	0,22	0,30	0,18	0,20	0,20	0,19	0,19	0,18	0,22
2-22-27-28	Agricultural raw material	0,39	0,28	0,33	0,24	0,41	0,50	0,74	0,58	0,53	0,52	0,42	0,50
27+28+68	Ores and metals	0,51	0,38	0,39	0,34	0,38	0,32	0,36	0,32	0,23	0,26	0,60	0,69
3	Fuels	0,04	0,03	0,03	0,02	0,01	0,02	0,01	0,02	0,03	0,03	0,01	0,01
68	Non ferrous metals	0,27	0,28	0,23	0,26	0,27	0,14	0,25	0,17	0,18	0,31	0,44	0,51
5+6+7+8-68	Manufactured Goods	0,38	0,37	0,35	0,25	0,36	0,34	0,41	0,39	0,36	0,32	0,41	0,48
5	Chemicals	0,26	0,24	0,23	0,24	0,24	0,29	0,25	0,28	0,25	0,23	0,30	0,36
7	Machinery and equipments	0,15	0,15	0,10	0,07	0,10	0,13	0,12	0,13	0,10	0,08	0,13	0,15
6+8-68	Other Manufactured goods	0,49	0,47	0,49	0,36	0,53	0,42	0,55	0,53	0,49	0,47	0,57	0,66
67	Iron and Steel	0,24	0,32	0,29	0,19	0,19	0,09	0,09	0,16	0,16	0,11	0,31	0,37
26+65+84	Textile	0,23	0,20	0,19	0,18	0,37	0,29	0,32	0,33	0,28	0,33	0,39	0,46
from 0 to 9	Economy-wide level	0,28	0,29	0,29	0,22	0,25	0,25	0,25	0,25	0,22	0,21	0,22	0,26

Source: Author's calculations on data from PCBS (1999 – 2008a).

Table 4: OLS Estimation of the Armington/CET assumptions.

Dependent Variable: Expenditure/sale ratio	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0,464*	0,8140*	1,048*	1,032*	0,131	0,289	-1,814*
Palestinian Real GDP		-1,149*	1,789*	1,808*	1,580*	0,583	2,217
Dummy 1(intercept)			-0,229	-0,195	0,014	0,110	0,379
Dummy 2 (Palestinian real GDP)			0,736	0,617	0,517	0,323	-0,232
Armington relative Prices (PD/PM)	-0,279			-0,717	2,852*	0,419	
CET relative Prices (PE/PD)							9,926
Israeli Real GDP							-7,030
R Square	0,289	0,627	0,836	0,896	0,878	0,514	0,608
R-adjusted	-0,015	0,586	0,753	0,812	0,796	0,190	0,215

Source: Author’s calculations on data from PCBS (1999 – 2008a, 1999 – 2008b, 2009a) and ICBS (2009).

Table 5: OLS estimation of Palestinian imports’ income elasticity.

Dependent Variable: ln (Palestinian Imports)	(1)	(2)
Intercept	0,68*	-0,26*
Palestinian Real GDP	2,35*	1,98*
Dummy 1 (intercept)	0,07	-0,01
Dummy 2 (Palestinian real GDP)	-0,37	0,06
Relative Prices (PD/PM)		0,25
R Square	0,89	0,91
R Square adjusted	0,84	0,85

Source: Author’s calculations on data from PCBS (1999 – 2008a, 1999 – 2008b, 2009a).

Orthodox and Heterodox CGE Models for the Palestinian Economy

*Clara Capelli**

1. Introduction

Economic modelling is not a neutral task. When we make hypotheses about the main relations acting within an economy, choose closures, assign values to parameters (e.g. elasticities), we set a causal path which affects the results of simulations. Hence, the theoretical approach is to be carefully dealt with before building an economic model, in order to provide reliable scenarios and, consequently, adequate policy suggestions.

Such issue is particularly challenging with respect to the Palestinian case and its peculiarities. It comes from a prolonged story of conflicts which has led to a dramatic geographic fragmentation. The intrinsic unpredictability of this situation has undermined the economic environment, so that domestic production is stuck to a rather low level and investments stagnate. The economy survives thanks to a massive inflows of current transfers from abroad, which support the PNA's deficit and the households' expenditures.

All these characteristics have to be born in mind for a proper model about the Palestinian economy. What is important to highlight, in fact, is that there exists a wide range of theoretical approaches for dealing with an economic matter and, it goes without saying, each perspective does not reflect a natural law, but, on the contrary, simply suggests a possible modelling solution.

The intent here is to take into consideration three different theoretical approaches and assess how the results of the same simulation will change accordingly. It will not be claimed that one perspective is better than the others, the focus being only on the relation between theoretical assumptions and the outcome provided by the simulations run.

CGE models will be the analytical instrument here. The acronym stands for "computable general equilibrium" and refers to sets of simultaneous equations describing the relations occurring within an economy. The equilibrium is "computable" and "general" in the sense, respectively, that it can be mathematically determined and

* University of Pavia, Department of Public Economy. This work is an output of my Master's dissertation, which has recently been discussed.

concerns all the markets at the same time. The equations the models consist of depend on the theoretical scheme adopted by the modeller.

The World Bank leads its studies about the Palestinian Territories' economic situation by using a CGE model worked out by Astrup and Dessus (therefore, it will be referred as **AD** model) in early 2000s. This model is substantially set for analyses on trade topics and is based on the mainstream neoclassical economic thought, commonly deemed as an "orthodox" solution for modelling.

Three perspectives will be illustrated here in alternative to the conclusions drawn by this model, with the aim to assess the relation between theoretical assumptions and simulation results. It must be said that it is not a speculative exercise, since modelling and simulating are the basis of suggestions of policy. Hence, a reliable model is a fundamental and necessary conditions for committed and effective development strategies.

2. A quick outlook on the approaches at stake

This work will take into consideration three different theoretical schemes, ranging from a fully **neoclassical** perspective (hereinafter **NC**) to the **structuralist** or **post-Keynesian** theory (hereinafter **SPK**). Like the **AD** approach, the former refers to the orthodox, mainstream economic thought, largely shared on the international stage (it only differs from what stated by **AD** as regards closures and elasticities' value). On the other hand, the latter represents a heterodox alternative. A third approach will be taken into consideration, namely the **bastard-Keynesian** theory¹ (hereinafter **BK**), which can be viewed as a compromise between the two theoretical solutions.

The main features characterising the three theoretical schemes may be classified on the basis of four main issues: **i)** technology, **ii)** income distribution, **iii)** the saving-investment relation and **iv)** market competition.

Technology is to be intended as the combination of factors of production. In a neoclassical world, it can change both in the short and the long run, the substitution between factors of production occurring via their relative prices, which, in turn, depend on their relative marginal productivity. On the other hand, a **SPK** perspective assumes

¹ The model was first worked out by Joan Robinson, a member of the Cambridge School.

that technology can change only in the long term. In fact, factors of production are combined on the basis of fixed proportions in the short term, i.e. according to a technology of the Leontief kind. The underlying idea is that production is a procedure and, as such, cannot be easily and flexibly modified; it rather needs long-term changes as for both labour and capital.

Income distribution refers to the remunerations earned by factors of productions (i.e. labour and capital) and is clearly linked to the previous considerations. The neoclassical theories hold it as a technological matter, stating that factors of production are remunerated on the basis of their marginal productivity. On the contrary, SPK view deems income distribution as a social issue: labour and non-labour factors are remunerated on the basis of power relations; for example, the wage rate depends on workers' bargaining power and the technological features of the economy at that moment.

The **causal relation between savings and investment** is another point to be brought up. The neoclassical perspective states that the level of available savings determines that of investment. The SPK approach states the very contrary. The neoclassical thought assumes that the macro-causality goes from savings to investment on the basis of the so-called *loanable funds theory*. Provided that the marginal product of capital is decreasing, the investment demand is inversely related to the real interest rate, whereas savings flow is an increasing function of the latter. It follows that the real interest rate adjusts so that saving supply equals investment demand: the economic agents decide the level of their savings and, consequently, this choice determines the investment's amount. Besides, it is implied that any act of saving will translate into a corresponding act of investment.

On the other hand, the Keynesian thought states that investment is not automatically determined by savings, since the latter are also utilized for precautionary purposes instead of being earmarked for capital accumulation. According to Keynes, productive investment is a function of the so-called "animal spirits", which is something spontaneous, deeply connected with the context at stake, rather than resulting from the rational calculation of benefits and probabilities. The underlying idea is the Keynesian view of demand as the driving force of an economic system. In principle, a Keynesian approach claims that there is no automatic mechanism ensuring that output and employment necessarily move towards full employment. This conflicts with the neoclassical economic assumption, based on the so-called Say's Law that output, supplied onto the market, is totally demanded, either for consumption or for savings (which in turn, will translate into investment demand).

The assumption of a demand-driven economy implies that increases in the components of demand will have an expansive effect on the economy. The underlying idea is that rising demand will encourage firms and investors to enlarge their production by employing more resources. This mechanism is analytically expressed by the so-called Keynesian multiplier $\frac{1}{(1-c)}$, which gives the percentage increase of the national income

after a unitary increase in one of the components of aggregate demand. What is more, rejecting the assumption of saving-driven investments implies that – as hinted here above – investment plans do have traction effects on the economy.

Finally, **market competition** mainly regards pricing theories. Neoclassical models assume perfect competition, which implies that the equilibrium price is equal to the firms' marginal cost, reached through adjustments of the relative prices. Should competition be imperfect, the mark-up charged on the equilibrium price would depend on the elasticity of demand: the less demand is elastic, the higher the mark-up will be. On the contrary, for a SPK modeller competition is imperfect and prices are charged with a socially-determined mark-up, which reflects social relations of power.

As it has been said before, the BK approach shares some elements with both approaches. As for technology and income distribution, it is decisively neoclassical: technology adjusts on the basis of the factors' relative prices and can change both in the short and in the long term, which, consequently, affects income distribution. However, it shows a clear demand-driven character, so that it is investment that determines savings. As for competition, the issue depends on the modellers' choice.²

3. A comparison among the different CGE models

3.1. The neoclassical perspective: reappraising the AD model

As it has been said before, the AD model belongs to the neoclassical theoretical tradition. A production of the CES type is used, based on the substitution between intermediate inputs and value-added, which, in turn, have to be distinguished into labour and capital, fully employed combined according to a Cobb-Douglas function. As for imports, the demand for them results from a CES aggregation function of domestic and imported

² In this case, market competition is assumed to be perfect.

goods, in the sense that the consumer – once that the amount earmarked for consumption has been determined – has to allocate its expenditures between domestic and imported goods, on the basis of their relative prices. Exports are symmetrically modelled as a CET function, i.e. producers decide to allocate their output to domestic or foreign markets responding to relative prices).

Finally, some macro-economic constraints are introduced. First, the small country assumption states that the Palestinian economy is unable to change world prices, which means that they are to be taken as exogenous. Capital transfers are exogenous as well. It follows that the current account balance is fixed. Second, the model imposes a fixed real government deficit, and fixed real public expenditures, which implies that public receipts have to adjust endogenously in order to achieve the pre-determined net government position. Third, investment is determined by the availability of savings. However, it has been just said that government and foreign savings are exogenously fixed in this models, so that changes in investment volumes reflect changes in households’ savings and changes in the price of investment.

The World Bank’s CGE models commonly use a closure that deems both the government deficit and the current account as exogenous, known as the “World Bank’s closure”, which deems the government deficit and the current account as exogenous. If the government deficit is predetermined, it is not possible to finance expenditures by increasing borrowing. The only possible way out is to make either a tariff or a tax rate endogenous. As for the AD model, the adjusting variable is the VAT rate (both on imports from VAT and on domestically produced goods), which shifts until the public balance is reached. The private balance is guaranteed by investment adjusting to savings.

The key difference between the AD model and the NC model regards the government deficit S_g . The latter leaves it as endogenous: in other words, this means that the government minimises its deficit given a certain level of revenues and budget support. Thus the problem of domestic VAT as an adjusting variable is overcome; this is, in fact, a counterfactual assumption, since tax rates are fixed at the beginning of the fiscal year and cannot freely move.³

The very low values assigned to elasticities (both of substitution and transformation) represent another change made to the AD model. The latter, in fact, is based on very high elasticities, assuming an extremely flexible behaviour for the Palestinian economy. On

³ It must also be said that VAT in the Palestinian Territories is fixed by the Paris Protocol, signed in 1994.

the contrary, low elasticities imply that the economy is burdened by some constraints, so that its behaviour is assumed to be very rigid.

Simulations are run on the basis of a SAM built for the year 2007.⁴ SAMs are square matrices registering all the transactions occurring within an economy during a calendar year, used as benchmark for CGE models. Here a simulation of full trade liberalisation between the Palestinian Territories and the countries other than Israel.⁵

Roughly speaking, the AD model concludes that the loss of tariff for the PNA will be compensated by a relative increase in the VAT rate on domestic production and imports. An aggregate welfare gain occurs for the households due to higher disposable income through cheaper imports. Remunerations of productive factors increase and exports are boosted thanks to the efficient reallocation occurred within the economy. Finally, the abolition of these taxes has a larger relative impact on investment rather than on private consumption, with a positive impact on capital formation and, consequently, on GDP growth.

The overall demand for imports increases, however – thanks to this policy measure – trade diversification will be largely encouraged, with imports from the rest of the world more than doubling. Astrup and Dessus claim that this consequence is due to the small degree of industrialisation of the Palestinian economy: since a very large share of finished goods is imported, they can be indifferently substituted from one origin to another.

Let us now simulate the same trade policy with the model discussed here. Please recall that, unlike the AD model, the budget deficit is assumed to be endogenous and the elasticities are attributed very low value because of the burdened character of the Palestinian economy. The main results are the following:

⁴ This operation was possible thanks to the collaboration with the PCBS of Ramallah.

⁵ Such scenario has a completely speculative purpose and does not take into consideration its political implications: the non-possibility on behalf of the PNA to plan unilaterally its trade and fiscal policy, the absence of clearly defined borders (either physical or notional), etc.

	Benchmark	After the shock
Output	8250	8250
Production for the domestic market	7501.9	7510.71
Exports to Israel	663.56	655.5
Exports to RoW	84.54	83.79
Imports from Israel	2070.21	2073.19
Imports from RoW	656.37	657.45
Investment	1159.1	1092.37
Change of PNA's welfare	-	-10.5%
Change of WB households' welfare	-	+ 4%
Change of GS households' welfare	-	+ 3,8%

Full liberalisation is likely to increase imports because they get cheaper. However, given endogenous public savings, the fall in tax revenues undermines savings and, therefore, investment. As for production, the factors of production become relatively more costly than intermediate inputs (bear in mind that most part is imported), and the production price increases, boosting domestic production at expenses of production for exports (and, then, of competitiveness).

Changes are very little in magnitude, which can be explained with reference to the low values assigned to the elasticities. Such a choice is due to the intent to model the burdens constraining the Palestinian economy, which is largely depended on imports from abroad and rather unlikely to be able to flexibly adjust to shocks. Moreover, it is already an open economy, so that full liberalisation cannot but lead to tiny changes, especially as regards the demand for imports.

As you can see, it turns out that, even sticking to the same theoretical approach, small modifications in closures and/or in elasticities can lead to remarkably different results. Despite cheaper imports, an uncompensated loss of revenues prevents the economy to enjoy those gains in productivity and efficiency claimed by the AD model.

3.2. The heterodox alternative

The neoclassical economic thought is not the only possible modelling solution. The “heterodox” alternative discussed here refers to the SPK theoretical scheme, based on the Keynesian theory and stressing the role of institutions and socio-political aspects.

Its main features have been illustrated in the first section. Beside the demand-driven approach, it provides a different pricing theory, known as the “mark-up rule”. It states that the price P of output X is based on variable costs (imported intermediate inputs and wages) with producers taking a margin at rate τ . The mark-up rate τ determines the profit

$$\text{share } \pi = \left(\frac{\tau}{1 - \tau} \right).$$

These elements are the result of institutional factors, relations of power, etc. Likewise, the labour use coefficient b is given by market customs, government’s policies, workers’ bargaining power, etc. The same considerations apply for the wage rate w , which is exogenously determined by the market conditions. Once again, what is important to stress is that the remunerations of labour and non-labour factors of production are not jointly determined, which means that resource allocation and distribution are independent from each other and substitution is not possible in the short term.

Furthermore, imported intermediate inputs are assumed to be an exogenously fixed share of output, given by the economy’s characteristics and reflecting a technology of the Leontief kind. Yet, final imports are modelled in order to leave a certain margin of substitution between them and domestic goods.⁶ Other solutions would be obviously possible.

Exports are not modelled anymore as a CET-based function. The latter, in fact, implies that the composition of output between goods to sell onto the domestic market and goods to sell abroad may more or less elastically adjust with respect to market conditions. However, this may true for economically powerful countries. For small economic systems – like the WBGS – the decision about the quantity of commodities to export is mainly determined by foreign demand and not by a process of optimisation between domestic and foreign markets.

The degree of capacity utilisation u , i.e. the level to which the productive capacity of the economy is being used, is an endogenous variable, depending on output V (clearly

⁶ In this respect, a function of the CES type is retained. A rather low elasticity of substitution is used.

endogenous) and on the (exogenous) capital stock K : $u = V / \bar{K}$. It must be said that the concept of K claimed by the SPK thought varies from the neoclassical perspective. The latter conceives it as the flow of capital services supplied to the market (i.e. the remuneration due to the owner of non-labour productive factors), whereas the former namely deems it as the capital stock of the economy.

The stock of capital K results from the product of the potential output V^* and the ICOR (i.e. the incremental capital output ratio), which says what is the marginal amount of capital investment needed to generate a unit of extra production.⁷ In a SPK model it represents the term of reference: the variables will in fact be normalised by K in order to assess the economy's performance with respect to its potential. The capacity use u is to be viewed as the accelerator term of the economy itself.

The combination between the profit share π and the capacity utilisation coefficient u gives the profit rate $r = (\pi / (1 + \tau)) \cdot (Q / P) \cdot u$. In the neoclassical and BK models, r is the user cost of capital. By contrast, in this SPK model r is the macroeconomic profit rate, an index of expected future returns or, alternatively, a proxy for firms' available cash flow.

As it has already been discussed, savings are not automatically channelled into capital formation, so that investment has to automatically adjust to them. Rather, investment is predetermined by investors' long-term expectations and "animal spirits", which is an assumption to be deemed as attuned for the Palestinian economy, whose situation is dramatically volatile, burdened with high transaction costs. The territory is highly fragmented and investors have no secure access to large markets (both domestic and foreign). Therefore, the entrepreneurial activity is extremely weak, with very modest animal spirits to fuel the economy.

In fact, low investment rates in Palestine are not due to a lack of saving. The domestic financial system disposes of a large amount of resource to support domestic investments. Yet, these resources do not translate into a corresponding amount of domestic investments, because of insufficiently profitable investment opportunities.

The assumption of endogenous S_g is retained, so that the loss of revenues undergone by the PNA because of trade liberalisation is assumed not to be compensated by adjustments of other tax rates (a reasonable hypothesis if compared with reality).

⁷ It is calculated as the ratio between annual investment and annual increase in GDP. The measure is used for evaluating the efficiency of a country's level of production.

The results of the simulation are as follows:

	Benchmark	After the shock
Total Production	6998.28 ⁸	6906.91
Exports to Israel	663.56	648.04
Exports to RoW	84.54	82.1
Imports from Israel	2070.21	2034.77
Imports from RoW	656.37	648.433
Capacity Use	3.846	3.796
Profit Rate	1.892	1.867
Investment	1159.1	1109.19
Employment	1230.33	1214.27

A fall in tax revenues dramatically weakens the economy, worsening the PNA's position, which largely depends on them. Hence, the economy undergoes a shock which leads to a fall in demand and a recession in the whole economy, close to instability. The loss of tariffs drains important resources from the economy and output falls (for both domestic goods and exports). Please recall that this is a demand-driven system, so that there is no full employment of resources and demand is the driving force of the economy, determining the level of production (which is not predetermined by factors of production at disposal).

The decrease in output matches negative impact on imports. Moreover, if output falls, the degree of capacity utilisation (given capital stock K) decreases, which leads to a decline on behalf of the profit rate. This undermines investment. Finally, since the labour-output ratio is fixed in the short run (bear in mind that technology is of the Leontief kind), also employment declines.

This scenario has very little to do with the results provided by the NC model and it is completely different from the AD one. Different causal relations and the introduction of rigidities draw a new picture, in which full liberalisation has a substantially fully negative impact on the economy. There are no gains in welfare because of cheaper imports or reallocations via relative prices, but, rather, a general worsening of all the elements.

⁸ This value is different from the previous benchmark figure because of a different definition of output. In the SPK model, output does not compute domestically produced intermediate inputs.

3.3. A middle-way solution: the BK perspective

Here comes the BK CGE model, with the characteristics described in the first section. It refers to a demand-driven system in which investment mainly depends on the entrepreneurs’ animal spirits. However, the production side is modelled according to the neoclassical assumptions of CES and CET functions, in order to leave a certain degree of adjustment to the economy. Low elasticities and endogenous S_g are retained.

Running the simulation of a full liberalisation with countries other than Israel the results are the following:

	Benchmark	After the shock
Output	8250	8214.28
Production for the domestic market	7501.9	7478.76
Exports to Israel	663.56	653.43
Exports to RoW	84.54	82.96
Imports from Israel	2070.21	2079.85
Imports from RoW	656.37	660.61
Investment	1159.1	1092.37
Change of PNA’s welfare	-	-10.8%
Change of WB households’ welfare	-	+ 3.2%
Change of GS households’ welfare	-	+ 3.1%

As in the fully neoclassical system, cheaper imports lead to an increase in the demand for imports, which betters the households’ welfare. However, as in the SPK model, the loss of resources negatively affects output, so that production for both the domestic market and exports declines. Such decrease matches with a fall in the investment level.

As a consequence, combining the two approaches provides a scenario in which demands only increase for (cheaper) imports, which cause a “voracity effect” on the whole economy: in this demand-driven system, gains in the households’ purchasing power benefit the rest of the world and divert the economy from its objectives of growth and development. This can be considered as an example of the phenomenon of Dutch Disease, which has been often dealt with by the literature on the Palestinian economy. External sources of funding – i.e. donor aid, remittances and income payments from abroad – have been covering over time government and private

consumption, which have turned out to be the main components of the Palestinian GDP, at the expense of investment. This trend is confirmed by the elevated volume of imports and the systematically huge trade balance deficits recorded by the WBGS.

It is important to pay attention to the relation between the results and the theoretical assumptions. Choosing a compromise between the two schools of thought has led to a scenario which is not as dramatic as the one provided by the SPK model, but, nevertheless, is not the outcome of mere reallocating adjustments. In a demand-driven system, in fact, a remarkable loss of tax revenues negatively impacts output and investment, so that cheaper imports are not able to boost competition and foster efficiency.

4. Conclusions

The theoretical issue is to be taken as a challenge. The approaches discussed here have drawn different scenarios and, thus, implied different *ad hoc* solutions. Modellers and policy-makers have to choose which way is better, but they also always bear in mind that each decision is simply one option among many different approaches.

It is not claimed at all that one of these three CGE models is better than the other or that the AD model is to be thrown away in favour of one of the options presented here. The focus is on the relevance of being aware that different theoretical assumptions have different economic implications and, therefore, suggest different solutions. The only reasonable method is to assess each theoretical scheme with respect to the economy at stake, in order to build a reliable model.

Economies, in fact, are never entirely neoclassical or Keynesian or whatever. This is particularly true in the Palestinian case, with its war-like, burdened, economic relations and intrinsic instability. Effective development strategies require serious commitment toward analytical and quantitative instruments, going beyond the illusion of panacea solutions.

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It is well-known that Palestinian growth and development have been blocked by what happened as a consequence of the Second Intifada and 2006 Hamas electoral victory, namely the tough restrictions on both people and goods movements. However, there is much which remains to be understood.

In this different scenario, is the Paris Protocol the good framework to restart some process of Palestinian development? Provided that trade relations with Israel are inevitably less flourishing than they were before 2000, is a policy of unconditional trade openness towards the rest of the world the best response? What are the concrete constraints preventing those Palestinian entrepreneurs who could make investments from doing so? And what are the social and fiscal implications associated with the last, tremendously complicated years? Who is suffering the most? These are the issues this book tries to shed some light on. The last ten years dramatically changed the course of Palestinian development, and economists and other social scientists may use this book as a tool to start thinking about the challenge of giving a chance to a people who strongly deserve it.

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Theoretical and Practical Challenges

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The cover shows: *The Dome of the Rock and the Western Wall ‘behind bars’* by Giovanni Valensisi

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VOLUME II

VOLUME II

Section 4: Social and Fiscal Issues

Fiscal Decentralisation and Intergovernmental Fiscal Relations in Palestine

Adel Zagha[♦]

We should know over which matters several local tribunals are to have jurisdiction, and in which authority should be concentrated.

Aristotle, Politics 4.15

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1. Introduction

The local government in the West Bank and Gaza has its origins in the middle of the last century (UNDP-PAPP 2003). The design of the legal framework and administrative systems were based not on local needs but mainly on the requirements of the Ottoman Empire, British Mandate, Jordanian era in the West Bank, Egyptian military rules in Gaza Strip, and Israeli occupation all of which were concerned more with security than with developmental aspirations of its constituency. Local government laws were therefore designed mainly to maintain the central control and to provide the minimum of the public goods at the local level. Meaningful decentralisation in the sense of a democratic representation in local governance was not a policy objective until the Palestinian Authority (hereafter the PA) was established (Al-Araj 1998). The local government units, the Ministry of Local Government and the donor community show a growing interest on issues related to fiscal and administrative decentralisation. Many workshops have been organised in recent years to discuss different aspects of fiscal decentralisation, but to our knowledge none in-depth studies have been conducted.

In an earlier joint paper Fjeldstad and Zagha (2002) discussed the factors explaining the tax system in the PA. In this respect, it was found that the limited trustworthiness in the PA was closely linked to citizens' perceptions of the capacity of the PA to make credible commitments about the use of tax revenues and foreign aid, as well as its procedures for designing and implementing fiscal policy non-arbitrarily. Moreover, the study found that extensive and increasing corruption contributed to undermine popular confidence in the PA as a credible force in the struggle against the Israeli occupation. These findings have implicitly implications for policies to devolve fiscal and administrative powers. Local authorities are the branch of the government which is 'closest' to the citizens. Hence, it is perceived that the strengthening of local authorities represents an important building block in the peace process, as well as in the Palestinian state formation process. Political and administrative reforms are still underway in the PA (ARD 2000a, 2000b; C3 Management and Economic Consulting, Adam Smith Institute and Center for Continuing Education at Birzeit University: Project on Public Administration and Civil Service Reform 2003-2006). An important challenge facing these reforms is related to the resourcing of local authorities, including the establishment of credible and transparent intergovernmental fiscal relations. Sabri and Jaber (2006), pointed out that "(t)he relations between local governments and ministry of finance are the most significant issue in the Palestinian local authorities,

mainly the transfer of due funds from the ministry of finance to local authorities which is not operated in the right way."

Restructuring of governmental functions and finances between the national and lower levels of government has become an important part of the Reform Plan for the Palestinian Government (see PLC 1997; UNDP-PAPP 2003).¹ Various forms of fiscal arrangements between the national and lower levels of government determine the way in which taxes are allocated and shared among the various levels of government, and how funds are transferred from one level to another. Hence, intergovernmental relations, both vertical (between levels of government) and horizontal (within levels) are important for the development and operation of an efficient and effective public sector.

This paper addresses some of the key issues and concepts of relevance with respect to fiscal decentralisation and intergovernmental fiscal relations in Palestine. In general, the purpose of the study is three-fold:

First: To assess the local government in terms of legal status and actual functioning. In particular, the paper maps the functions assigned to the local government units (LGUs) and analyses how these are resourced. Moreover, the paper analyses to what extent the LGUs are given access to adequate resources to do the job with which they are entrusted.

Second: To study the possibility of a new relationship between LGUs and NGOs in a way that maximises the net benefits of fiscal decentralisation. Particularly, the paper presents arguments that while criticise the traditional theory of fiscal federalism on the one hand, it argues for the inclusion of NGOs in the concept of fiscal decentralisation. It is also important to explore the relations between the LGUs and NGOs, since many NGOs are actively involved in service provision at the local level (e.g., in health and education). How are the relations today between LGUs and NGOs with respect to service delivery? And what is the scope for constructive partnerships between these institutions?

Third: To analyse the constraints of devolving fiscal and administrative powers. An important question for this part of the study is how to secure a balance between the conflicting forces of centralisation vis-à-vis decentralisation? Moreover, a study of fiscal decentralisation and intergovernmental fiscal relations must take into account both the political constraints facing policy makers such as the strength of different municipalities

¹ Officially this is known as 'The 100 Day Plan'. The objective of the 100 days Plan is to bring substantial democratic improvements to the Palestinian public administration in order to improve the welfare for the Palestinian people and facilitate a final status solution to the Palestinian-Israeli conflict (UNDP-PAPP 2003).

and groups in political decisions, and economic constraints such as the economic structure and income levels.

The paper is organised around four questions that must be answered with respect to fiscal decentralisation and intergovernmental functions and finances in Palestine:

- 1) Who does what? This question is about assignment of functions between levels of government, including spending patterns and allocations to specific sectors.
- 2) Who levies what revenues? This question is about revenue assignment and the coherence of the revenue policies of various levels of government.
- 3) How to resolve the imbalance between the revenues and expenditures of sub-national governments? This question has to do with vertical imbalances between levels of government.
- 4) How to adjust for the differences in capacities and needs among different geographical areas? This question is about horizontal imbalances or equalisation.

The rest of the paper is organised as follows: section II discusses the theoretical aspects of decentralisation in light of fiscal federalism and presents the fiscal decentralisation index; section III presents the critique of the traditional theory of fiscal federalism and presents arguments for the inclusion of the NGOs in the concept of fiscal decentralisation. It is also important to explore the relations between the LGUs and NGOs, since many NGOs are actively involved in service provision at the local level (e.g., in health and education). How are the relations today between LGUs and NGOs with respect to service delivery? And what is the scope for constructive partnerships between these institutions? Section IV maps the functions assigned to the local government units (LGUs) and analyses how these are resourced. Moreover, the paper analyses to what extent the LGUs are given access to adequate resources to do the job with which they are entrusted; Section V maps the Palestinian NGO sector and discusses the role of the Palestinian NGOs in the economy; Section VI analyses the constraints of devolving fiscal and administrative powers. An important question for this part of the study is how to secure a balance between the conflicting forces of centralisation vis-à-vis decentralisation? Section VII concludes the study and suggests few policy recommendations.

2. Theoretical Aspects of Decentralisation

2.1. Theoretical Aspects

The question of what form of government promises the greatest success in resolving the allocation, distribution, stabilisation, and more recently coordination problems has been the centre of fiscal decentralisation issues. By itself, fiscal decentralisation, i.e. the devolution of taxing and spending powers to lower levels of government, has become an important theme of governance in many developing countries in recent years (Fjeldstad 2001, p. 1). Accordingly, restructuring of governmental functions and finances between the national and lower levels of government has entered the core of the development debate. In Latin America, after a long tradition of centralised government, most countries implemented decentralisation policies in the recent past (Burki *et al.* 1999).² But such trend is also to be found in Asia and Africa as well.

The main argument in support of decentralisation policies is that they bring decisions closer to the people. Information asymmetries, agency costs and problems of collective decision can be alleviated through decentralisation. However, decentralisation can also worsen the provision of public goods in the presence of positive spillovers, lack of technical capabilities by local governments, or capture of low-level administrations by local elites. The theoretical literature obtains trade-offs without universal superiority of either centralisation or decentralisation in the provision of public services. The problem needs to be analysed empirically (Galiani and Schargrodsky 2001, p. 1).

In Oates (1972), central governments produce a common level of public goods for all localities, while local governments can tailor public goods output to local tastes. He finds that local governments are preferable when the better match between local government outputs and local preferences is not outweighed by spillovers or economies of scale in central government provision. Lockwood (1998) and Besley and Coate (2000) allow for heterogeneous local provision but central policy making in which elected representatives bargain over public goods provision. With heterogeneous provision, the case for decentralisation has to be driven by political economy considerations, i.e.

² Recent studies analysing decentralisation processes in Latin America include Lopez Murphy (1995), Tendler (1997), Bird and Vaillancourt (1998), Fukasaku and Hausmann (1998), Savedoff (1998), and Willis *et al.* (1999). On Argentina, see Porto and Gasparini (1998), Grindle (2000), Tommasi, Saiegh, and Sanguinetti (2000), *inter alia*.

drawbacks in the political and legislative processes of centralised systems that may induce inequity, uncertainty, or excessive public spending.

In Tommasi and Weinschelbaum (1999), the advantages of centralised decision making (internalisation of externalities) are compared to those of decentralised decision making (increased control of agents by the citizens through lower information asymmetries, less free-riding and easier coordination). In addition, decentralisation may have the advantage of encouraging competition if citizens “vote with their feet” (Tiebout 1956).

Oates in his *Fiscal Federalism* (1972, p.13) summarises the economic desirable characteristics a decentralised public sector possesses.

First, it provides a means by which the levels of consumption of some public goods can be tailored to the preferences of subsets of the society. In this way, economic efficiency is enhanced by providing an allocation of resources that is more responsive to the tastes of consumers. Second, by promoting increased innovations over time and by providing competitive pressures to induce local governments to adopt the most efficient techniques of production, decentralization may increase both static and dynamic efficiency in the production of public goods. Third, a system of local government may provide an institutional setting that promotes better public decision-making by compelling a more explicit recognition of the costs of public programs.

Oates concludes (1972, p.19) that mix of centralised and decentralised forms of the government is the central theoretical problem of the subject of fiscal federalism, or in his own words “This [...] is the central theoretical problem of the subject of fiscal federalism: the determination of the optimal structure of the public sector in terms of the assignment of decision-making responsibility for specified functions to representatives of the interests of the proper geographical subsets of the society.” In the final analysis of this issue the selection of the proper level of government to provide a particular good or service is not an easy problem; there are typically a number of variables that figure in this decision, and in most instances, some form of trade off between welfare gains and losses is involved.

The principle of subsidiarity suggests that economic performances of the governments will be more responsive to consumer demands and to cost cutting pressures (i.e. more efficient) if services are provided by the lowest level of government possible. While foreign policy, defence, immigration, and international trade can be

best formulated and implemented by the national government, sub-national governments (SNGs) are able to carry out some important tasks for regional and local communities such as law, order and public safety, education, health policy, as well as very local issues such as street lighting system, local sewerage, garbage collection, and local paper deliveries, etc. Services provided by the national government are consistent with the law of subsidiarity when demand is at a constant level across various sub-national localities. However, when demand varies from location to location, national provision to a common standard leads to inefficient under-provision, in some areas, and inefficient over-provision, in other areas. In short, services provided by the national government assume tastes and preferences to be homogeneous across locations and for citizens within locations.

The advantages of having "policy closer to the people" may also be relevant in our context. The explicit reason for the school transfer in Argentina was to increase efficiency through proximity to demand and unification of management and control at the province level (Llach *et al.* 1999). Faguet's (2001) results on Bolivian decentralisation suggest that local government have better knowledge of idiosyncratic preferences. Eskeland and Filmer (2001) find a positive effect of school decision autonomy and parental participation on school performance for Argentina. Paes de Barros and Mendonca (1998) find no effect on test performance of school financial autonomy and school boards in Brazil, but register positive effects of decentralised director appointment. Decentralisation seems to lower citizens' costs of putting pressure on the schools to improve their services through voice and participation in El Salvador and Nicaragua (Jimenez and Yasuyuki 1999; King and Ozler 2000).

The traditional theory of fiscal federalism prescribes a very limited tax base for SNGs. The only good local taxes are said to be those that are easy to administer locally, are imposed solely (or mainly) on local residents, and do not raise problems of harmonisation or competition between subnational – local or regional - governments or between sub-national and national governments.³ The only major revenue source that usually passes these stringent tests is the property tax, with perhaps a secondary role for taxes on vehicles and user charges and fees. Since central governments are in any case generally reluctant to provide SNGs with access to more lucrative sales or income taxes,

³The classic tax assignment arguments are set out in Musgrave (1983). Recent restatements may be found in Oates (1998) and McLure (1999). Much of this section of the present paper is based on a more detailed review of the tax assignment issue in Bird (2000).

it is not surprising that this conclusion has become conventional wisdom. SNGs almost everywhere are thus urged to make more use of property taxes and user charges, and are criticised when they do not do so enthusiastically (Bird 2003, p. 1).⁴ We will point out later why property taxes might fail to generate sufficient revenues for LGUs in the context of developing countries.

2.2. Measurement of Fiscal Decentralisation

One of the difficult issues is to measure satisfactorily the degree of fiscal decentralisation across countries. Vo (October 2006) developed the fiscal decentralisation index (FDI) which accounts for both fiscal autonomy and fiscal importance (or economic dispersion) of sub-national governments. While the index is an advance on current practice, it is still not perfect as it assumes there is no dispersion of revenue and expenditure across regions.⁵

In essence, the greater the share of SNG expenditure funded from subnational own sourced revenue (“OSR”), the more fiscally decentralised a nation is. However, this is adjusted by the adjustment factor (“AF”) from two major influences: (i) total proportion of intergovernmental grants received that are “untied” (i.e. unconditional); and (ii) the extent of SNG fiscal autonomy in borrowing decision. As a consequence, the relative level of autonomy, which can be called “fiscal autonomy”, for SNGs can be defined as follows:

$$FA = \frac{\sum_{i=1}^N OSR_i}{\sum_{i=1}^N E_i} \times AF \quad [2.1]$$

⁴ International Tax Program, Rotman School of Management, University of Toronto. Bird’s article is a substantially revised and updated version of a paper entitled “Subnational Revenues: Potentials and Problems” originally prepared for the Annual World Bank Conference on Development in Latin America and the Caribbean, Valdivia, Chile, June 1999, and subsequently published in S.J. Burki and G.E. Perry, eds., *Decentralization and Accountability of the Public Sector* (World Bank: Washington 2000).

⁵ In response to this weakness, Vo (October 2006) developed fiscal entropy and fiscal inequality measures using information theory (Theil 1967). He shows us how fiscal inequality can be decomposed regionally and hierarchically. However, the issue of inequality lies beyond the purposes of this research and therefore we will not deal with it.

where OSR_i represents for the own sourced revenue for subnational region i ; E_i represents for the expenditure made by subnational region i ; AF represents the adjustment factor; and N is the number of subnational regions.

SNGs operate closely to local inhabitants so that they are the sole agents, who are in the best position to understand preferences, tastes and amount demanded. It is clear that levels of goods and services provided should not be exceeded the amount demanded by the community. This can avoid both under or overprovision of public goods and services. Moreover, a system of fees, users' charges can be considered useful and effective for the purpose of cost recovered (McLure and Martinez-Vazquez 2004). The larger the portion of the total public spending cake attributable to SNGs, the higher the degree of fiscal importance and the more likely it is that the benefits from the law of subsidiarity will be realised. Consequently, the relative level that represents the fiscal importance of SNGs is defined as:

$$FI = \frac{\sum_{i=1}^N E_i}{TE} \quad [2.2]$$

where TE represents total public sector expenditures of the whole economy (including both expenditures from the national government and all SNGs).

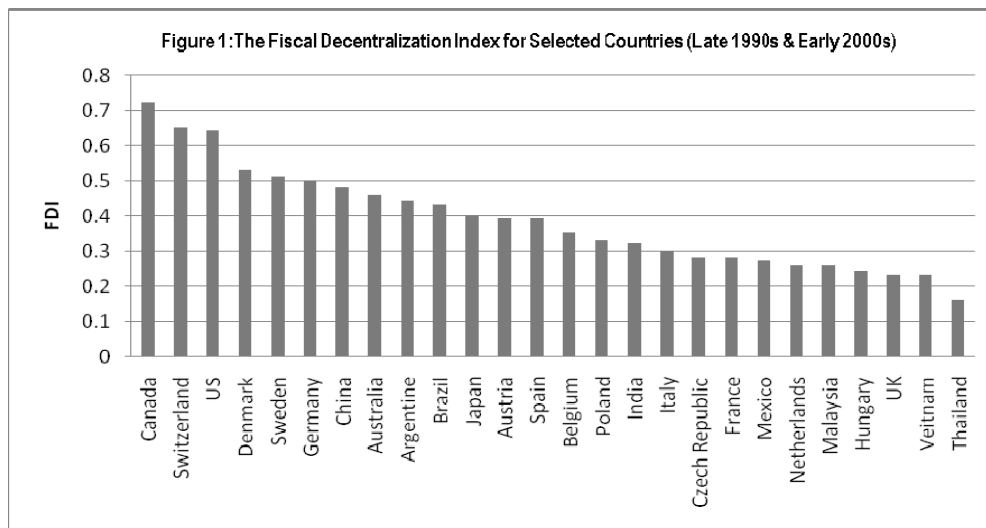
The notions of fiscal autonomy [equation (2.1)] and fiscal importance [equation (2.2)] of SNGs may need to be used simultaneously to establish a reliable index of fiscal decentralisation. Such fiscal decentralisation index, as developed in Vo (2005), is:

$$FDI = \sqrt{\left(FA = \frac{\sum_{i=1}^N OSR_i}{\sum_{i=1}^N E_i} \times AF \right) \times \left(\frac{\sum_{i=1}^N E_i}{TE} \right)} \quad [2.3]$$

(A)
(B)

where OSR_i represents for the own sourced revenue for subnational region i ; E_i represents for the expenditure made by subnational region i ; AF represents the adjustment factor for the country and $0 \leq AF \leq 1$; TE represents total public sector expenditures of the whole

economy (including expenditures from the national government and all SNGs); and N is the number of subnational regions. As components (A) and (B) are to be both positive fractions, and $0 \leq AF \leq 1$, we can conclude that FDI will also be a positive fraction. Also, the higher the value of FDI, the more fiscally decentralised is the country. **Figure 1** shows the FDI for selected developed and developing countries.



Source: IMF, Government Finance Statistic Yearbooks, selected years. Quoted in Vo, October 2006, p. 8.

The figure shows a tendency that developed countries have higher FDI than developing countries. However, some developed countries (China, Argentina, Brazil, and India) are proven to have more decentralised structure than some developed countries (France, Netherlands and the UK).

3. The Critique of the Traditional Theory of Fiscal Federalism

Bardhan (2002) suggested that the institutional context (and therefore the structure of incentives and organisation) in developing and transition economies is quite different from those in advanced industrial economies, and this necessitates the literature on decentralisation in the context of development to go beyond the traditional fiscal federalism literature.

Governance decentralisation has been at the centre stage of policy experiments in the last two decades in a large number of developing and transition economies in Latin America, Africa and Asia. The World Bank, for example, has embraced it as one of the major governance reforms on its agenda (many of the World Development Reports of recent years as well as other Bank documents² give the matter a great deal of prominence). On account of its many failures, the centralised state everywhere has lost a great deal of legitimacy and decentralisation is widely believed to promise a range of benefits. It is often suggested as a way of reducing the role of the state in general, by fragmenting central authority and introducing more intergovernmental competition and checks and balances. It is viewed as a way to make government more responsive and efficient. Technological changes have also made it somewhat easier than before to provide public services (like electricity and water supply) relatively efficiently in smaller market areas, and the lower levels of government have now a greater ability to handle certain tasks. In a world of rampant ethnic conflicts and separatist movements, decentralisation is also regarded as a way of diffusing social and political tensions and ensuring local cultural and political autonomy.

All around the world in matters of is the rage. Even apart from the widely debated issues of subsidiarity and devolution in the European Union and states' rights in the U.S. If one takes just the two largest countries of the world, China and India, decentralisation has been regarded as the major institutional framework for the phenomenal industrial growth in the last two decades in China (taking place largely in the non-state non-private sector); and India ushered in a fundamental constitutional reform in favour of decentralisation around the same time it launched a major program of economic reform.

Much of the fiscal federalism literature focuses on the economic efficiency of inter-governmental competition, which often starts with a market metaphor that is rationalised by the well-worn Tiebout (1956) model. In this approach, different local governments offer different public tax-expenditure bundles and mobile individuals are supposed to allocate themselves according to their preferences. The assumptions required for the Tiebout model are, however, much too stringent, particularly for poor countries. The crucial assumption of population mobility (fully informed citizens 'voting with their feet' in response to differential public performance) that enables governments in the Tiebout framework to overcome the well-known problem of inducing citizens to reveal their preferences for public goods largely fails in poor countries. In any case many of the public goods in question are community specific and it is often possible to exclude non-residents. Rural communities of poor countries, in particular, are often face-to-face, and

social norms sharply distinguish ‘outsiders’ from ‘insiders’, especially with respect to entitlement to community services.

Secondly, the information and accounting systems and mechanisms of monitoring public bureaucrats are much weaker in low-income countries. In the standard literature on decentralisation and “fiscal federalism,” the focus is on allocation of funds and it is implicitly assumed that allocated funds automatically reach their intended beneficiaries. This assumption needs to be drastically qualified in developing countries, where attention must be paid to special incentives and devices to check⁶ bureaucratic corruption – and thus the differential efficacy of such mechanisms under centralisation and decentralisation.

Third, even in the relatively few democratic developing countries the institutions of local democracy and mechanisms of political accountability are often weak. Thus, any discussion of delivery of public services has to grapple with issues of capture of governments at different tiers by elite groups more seriously than is the custom in the traditional decentralisation literature.

Fourth, the traditional literature on decentralisation, even though not impervious to issues of distribution, is usually preoccupied with those of efficiency in public provision. When a major goal of decentralisation in developing countries is to effectively reach out to the poor (or to diffuse unrest among disadvantaged minority groups), often in remote backward areas, targeting success in poverty alleviation programs is a more important performance criterion than the efficiency of inter-regional resource allocation. In the traditional discussion of decentralisation and federalism, the focus is on checks and balances, on how to restrain the central government’s power, whereas in many situations in developing countries the poor and the minorities, oppressed by the local power groups, may be looking to the central state for protection and relief. Stepan (forthcoming) has made a useful distinction between “coming-together federalism” like the United States, where previously sovereign polities gave up part of their sovereignty for to efficiency gains from resource pooling and a common market, and “holding-together federalism” like the multi-national democracies of India, Belgium and Spain, where the emphasis is on redistributive or compensating transfers to keep the contending polities together. In heterogeneous societies, such redistributive pressures sometimes lead fiscal

⁶ There are doubts about just how the Tiebout mechanism operates even in relatively mobile societies like that of the United States. For instance, very few poor people move from state to state in search of higher welfare benefits (Hanson and Hartman 1994).

decentralisation to allow for state and local borrowing that may be large enough to cause problems of macroeconomic stabilisation, as has happened in South Africa, Brazil and Argentina. Not all state-mandated redistribution, however, is inflationary or unproductive rent-creation, as is usually presumed in the traditional literature. Some redistribution to disadvantaged groups or regions (say in the form of decentralised delivery of health, education or infrastructural services) need not be at the expense of efficiency, and may even improve the potential for productive investment, innovation, and human resource development on the part of communities long bypassed by the elite or the mainstream.

Fifth, the fiscal federalism literature typically assumes that lower levels of government both collect taxes and spend funds, so localities can be classified as low-tax/low-service or high tax/high-service. This connection between local revenues and spending is rather tenuous. In most countries, much of the more elastic (and progressive) sources of tax revenue lie with the central government, and there is a built-in tendency toward vertical fiscal imbalance. Income is often geographically concentrated, both because of agglomeration economies and initial endowments of natural resources and infrastructural facilities. Thus, certain local areas will find it much easier to raise significant tax revenue than others. In addition, there are limits to interregional tax competition. In many low-income countries, the decentralisation issues discussed there are primarily about providing centrally collected tax revenue to lower levels of government, rather than seeking to empower lower levels of government to collect taxes. The focus is on public expenditure assignments, unaccompanied by any significant financial devolution.

Sixth, the decentralisation literature typically assumes that different levels of government all have similar levels of technical and administrative capacity. This assumption is questionable for all countries.⁷ On account of agglomeration economies in attracting qualified people, in most countries central bureaucracies attract better talent. But the problem is especially severe in many developing countries, where the quality of staff in local bureaucracies – including basic tasks like accounting and record keeping – is very low. Even their more professional and technical people suffer from the disadvantages of isolation, poor training and low interaction with other professionals. As

⁷ This paper will not have much to say on the impact of decentralisation on macroeconomic stabilisation. For a game-theoretic model of how decentralisation or local democratisation may increase the level of central redistribution to prevent spirals of regional revolt and how the macroeconomic consequences depend on the initial levels of cultural division and decentralisation, see Treisman (1999).

Bird (1995) puts it, information asymmetry thus works both ways: the central government may not know *what* to do, the local government may not know *how* to do it.⁸

As I tend to agree with these critiques I will also add one more point to them based on the Palestinian experience. This is namely the **exclusion of the NGO sector from the discussion of fiscal decentralisation**. This is so because of two main reasons:

- The Palestinian NGO sector grew and became a social mobilisation factor **even before** there was a central Palestinian national authority, and
- Secondly, the **collective power and economic importance** of the Palestinian NGO sector (**PNGO** for short) is much more than that of the local government units.

These points will become more evident as we move forward in the discussion below.

Up to this point, there is much to be said for the view that property taxes were the best taxes that LGUs can levy. Unfortunately, that point falls far short of the task facing SNGs⁹ in many countries for a number of reasons. First, the conventional case for user charges and property taxes is to some extent flawed. Property taxes, for example, are often costly and difficult to administer well, and such problems are greatly exacerbated as the tax burden increases. Moreover, in practice political realities mean that increases in property taxes are often concentrated primarily on those non-residential properties that most readily permit “tax exporting” (the shifting of taxes to non-residents), thus undercutting one of the principal arguments for local use of property taxes in the first place.

Second, even a well-administered local property tax cannot finance major social expenditures (education, health, social assistance) except perhaps to a limited extent in the richest (and usually largest) communities.¹⁰ Since, as discussed further later, it is desirable to the extent possible for governments to finance from their own revenues the services they provide, either local governments that are dependent on property taxes are essentially confined to providing “local” services (street cleaning, refuse removal, etc.), or they are inevitably heavily dependent on transfers from higher levels of government.

⁸ Of course, this problem is of differential importance in different services. Providing for street cleaning or garbage collection may not require sophisticated expertise, but power production and transmission, bulk supply of clean water and public sanitation do. Decentralisation to the local level will often work better in the former kind of services than the latter.

⁹ SNGs and LGUs are used interchangeably to mean the same thing.

¹⁰ User charges should be used only with caution in such social areas: for further discussion, see Bird (1976).

Even in developed countries, this pattern holds.¹¹ One should also add that property tax revenues depend on the assessment of the value of the properties. When such assessments are old and do not take into account the bonanza property owners get in the course of time as the values of their properties sharply increase due to urbanisation pressures and the shifting in production activities away from agriculture to housing construction. In such cases, the tax based is actually eroded due to outdated assessments.¹²

Third, the conventional argument does not take adequately into account the existence in many countries of important regional or intermediate levels of government and especially the fact that these governments often play a major role in financing social expenditures. Local governments may to a considerable extent be able to finance purely local services through property taxes and user fees on residents. Regional governments responsible for social services, however, cannot rely solely on this narrow base for financial support. The conventional approach to tax assignment has traditionally held that perhaps the best additional source of finance for regional governments would be retail sales taxes. Such taxes are usually assumed to fall mainly on residents – a desirable feature in a sub-national tax.¹³ Moreover, as the United States and Canada have long demonstrated, retail sales taxes can be administered at the regional level, at least in developed countries although this argument can obviously not simply be carried over to developing countries, which have universally found it impossible to administer such taxes even at the national level.

Given the recent move towards decentralisation in many countries around the world (Litvack *et al.* 1998) and the concerns frequently expressed about the resulting strain on

¹¹ Relatively few developed countries have significant local property taxes. In most OECD countries, to the extent local governments are not dependent on national transfers, they either impose significant direct taxes on business or levy surcharges on national income taxes (Bird and Slack 1991). Bahl (2002) shows that property taxes are even less important in developing and transitional countries.

¹² In a recent example, one of the daughters of a wealthy merchant and contractor in Ramallah inherited some wealth from her father. She bought with the some of the money a parcel of land in a nearby village in the early 1990s, particularly she paid 4 Jordanian Dinars (JD) per square meter. Now she is offered a price of 30 JD per square meter that will bring her 650% rent, or an annual of 45% rent. Land valuation for official calculations of property taxes would put the value of the land far below its market value. Many rich people or people with access to internal information were able to purchase parcels of lands for cheap prices and within few months were able to make a fortune due to the announcement of the development plan of a new city north to Birzeit to offer housing for some 30,000 people who are now commuting between the north of the West Bank and Ramallah where they could find lucrative jobs.

¹³ In reality, most "retail" sales taxes even in developed countries fall to a considerable extent on business inputs: one Canadian study, for example, found that between one-third to one-half of the retail sales tax base in different provinces consisted of such inputs (Kuo, McGirr, and Poddar 1988). The situation in the United States appears to be broadly similar (Ring 1999).

intergovernmental fiscal relations and the possibility of irresponsible behaviour by SNGs (Tanzi 1996), some rethinking of the appropriate revenue structure for regional and local governments seems needed.¹⁴

Both theory and international experience suggest that governments are more likely to spend responsibly the more they are responsible for raising the revenues they spend. While there will obviously always remain an important role for intergovernmental transfers, especially in countries with wide regional economic disparities, there seems no reason in principle why at least the wealthier regions (for example, larger urban areas) should not be able to raise and spend most of their budgets themselves.¹⁵ There are thus good reasons to strengthen sub-national tax regimes.

In principle, multi-tiered governments work best when taxes and the benefits of public spending are as closely related as possible – when, that is, citizen-voter-consumers residing in a particular political jurisdiction both pay for what they get from the public sector and get what they pay for (that is, benefit from the expenditures financed by the taxes they pay). Obviously, when citizens reside in several overlapping jurisdictions (local-region-nation) this so-called “principle of fiscal equivalence” (Olson 1969) suggests that they should pay taxes to each level corresponding to the benefits they receive from each jurisdiction.

In this framework, the only rationale for intergovernmental transfers is to restore this equivalence, for example, by providing a compensatory payment when some benefits flow from one jurisdiction to another or (negatively) when some taxes levied by one jurisdiction are in fact paid by persons residing in another jurisdiction. Such transfers would, of course, be horizontal, between regions or municipalities, and not between levels of government. In addition, however, considerations of administrative efficiency

¹⁴ Of course, in many countries, local and regional governments do not in fact utilise fully all the revenue sources at their disposal. While this question cannot be explored in detail here, this reluctance is sometimes understandable, given the political problems they may face in doing so and the relatively easier recourse they often have to transfer revenues. For a recent careful examination in one country (Colombia) of the disincentive to local revenue effort that may be created by poorly-designed transfers, see Sánchez, Smart and Zapata (2002).

¹⁵ For an earlier statement of this argument, see Bird (1993). An important implication of strengthening subnational “own revenues” is that the resources accruing to different states or provinces will obviously differ greatly, depending upon their access to the tax base in question. While transfer systems can in principle be adjusted as desired to prevent unduly penalising poorer regions, the extent to which such adjustments will in fact be made is always country-specific – compare, for example, the cases of Canada and the United States, and Germany and Switzerland (Bird 1986) – and the incentive effects of transfer design need to be considered with care. Although the critical interdependence of tax assignment and the design of transfer systems cannot be further discussed in this paper, some aspects of this problem are discussed further in Bird and Smart (2002).

and feasibility may require that higher (or lower) levels of government impose certain taxes or carry out certain expenditures, even when it is not appropriate to do on equivalence grounds. The vertical intergovernmental fiscal transfers found in most countries are motivated largely by this consideration. However, if as suggested here, more adequate sub-national taxes are made available, this "fiscal gap" (Boadway and Hobson 1993) argument for transfers disappears with respect to richer jurisdictions since the richer units of government at sub-national levels should be essentially self-sufficient. Any grants from higher levels of government that are made to the poorer sub-national units for reasons of regional equalisation should be clearly *inframarginal*, so that, as McLure (1999) notes, all SNGs, rich and poor alike, will face the full marginal tax price of the spending decisions for which they are responsible. Only in this way can the "hard budget constraint" critical to good intergovernmental fiscal and financial policy be achieved.¹⁶

Good sub-national taxes should thus in principle satisfy two main criteria. First, they should provide sufficient revenue for the richest sub-national units to be essentially fiscally autonomous.¹⁷ Second, they should clearly impose fiscal responsibility at the margin on SNGs. The simplest and probably best way to achieve this goal is by allowing those governments to establish their own tax rates with respect to at least some major taxes.

The most immediately important issue facing many larger countries, for example, is undoubtedly the need to develop a satisfactory revenue base for regional governments, that is, one for which those governments are politically responsible. One possibility is to permit regional surcharges on personal income taxes. Another potentially promising approach may be to establish sub-national value-added taxes. Such a tax already exists and works well in Canada (Bird and Gendron 1998), and it now seems that it may be feasible to implement it in some circumstances even in countries with less well-developed tax administrations.

Another key problem facing many countries is how to replace the various unsatisfactory state and local taxes on business that exist in most countries by some less distortionary form of taxation. Recently, a "business value tax" – in essence, a relatively

¹⁶ Bird (2001) spells out this argument in some detail. For a useful recent review of experience with hard budget constraints in a variety of countries, see Rodden, Eskeland and Litvack (2003).

¹⁷ Of course this objective does not preclude intergovernmental fiscal transfers not only to achieve the usual "spillover" objectives but also, in some circumstances, in order to ensure the adequate provision of certain services to "national standards": for a suggested design for such a system in Colombia, for instance, see Bird and Fiszbein (1998).

low rate flat tax levied on an income-type value-added base – has been suggested for this purpose.¹⁸ In contrast to the proposal mentioned in the previous paragraph, which is motivated mainly by the desire to provide more adequate “own” revenues to regional governments and hence to encourage greater fiscal responsibility and accountability, this proposal is aimed primarily at improving the allocative efficiency of sub-national revenue systems. Given the obviously lesser attraction of efficiency than of revenue as a political goal, better local business taxation may be less likely to find a welcoming political audience. Nonetheless, since revenue pressures may soon produce a proliferation of increasing, and increasingly distorting, sub-national business taxes many developing and transitional countries, it seems important to at least begin to think of some better alternatives.

In an illuminating study about “The Changing Role of Government” in China, Saich (August 2004, which is a background note for the World Bank Report on China’s 11th Five Year Plan) suggested that To satisfy citizens’ needs, government will have to further develop *alternative service providers*¹⁹ and form new partnerships. Local governments alone will not be able to provide the necessary services. His survey reveals that citizens view local government as less adapt at providing the kind of social support that needs to accompany the economic transition.²⁰

To resolve the problems of service provision, government will have to make more effective use of the market and not-for-profit-organisations. In recent years pluralism of service delivery has expanded with voluntary organisations supplementing state provision of basic services and with the expansion of private education and health institutions. The shift primarily resulted from the adoption of cost recovery as the main principle in determining service provision (Flynn, Holiday, and Wong 2001: 9). China has moved further down the road of privatisation, under its slogan of socialisation (*shehuihua*) than most OECD countries that have adopted a conscious policy to boost the role of markets in service provision. China has shifted from an emphasis on equality in social welfare provision to one based on efficiency and cost recovery. This has resulted in further delegation of responsibility to local governments and communities to provide welfare, as

¹⁸ The history of this idea, and various examples found around the world, are discussed in Bird (2003). An empirical application of this approach to Canada may be found in Bird and Mintz (2000) and Bird and McKenzie (2001).

¹⁹ The reference is made to NGOs here.

²⁰ During the discussion of the first draft of this research paper, Prof. Marco Missaglia suggested that I include the NGO sector in my discussion of fiscal decentralisation in a more profound fashion. I acknowledge his idea and therefore I added a subsection describing the Palestinian NGO sector and its relative importance.

well as an acquiescence regarding the emergence of alternate service providers. Effectively, those who can afford it enjoy greater choice while others have to get by with reduced services or with no help at all beyond the family (see Saich 2003).

One of the distinctive features of reform has been the expansion of non-government organisations (social organisations) and civilian not-for profit institutions (see Saich 2000). By the end of 2002, there were some 133,357 registered social organisations, defined as a community entities composed of a certain social group with common intention, desires and interests (Ministry of Civil Affairs 2003, p. 132). In addition, there are 700,000 civilian not-for-profit institutions, which are set up by enterprises, social groups or individuals to provide not-for-profit social services (Deng 2002: 26). This category includes private schools, hospitals, community service centres, vocational training centres, research institutes and recreational facilities (Meng 2002: 10).

To facilitate better use of the market and institutions of civil society, a discussion must be pursued regarding the kinds of public goods government should supply and those services that should be treated as a private good that need not be funded out of public revenues. One illustrative example of the latter is urban housing, which has been treated as a public good and offered at highly subsidised rates by state-owned enterprises and other state agencies. The privatisation of housing should be continued with profits raised used to reinvest in low-cost housing. Individual responsibility and the reduction of state provision have also occurred in the realm of healthcare. However, in such sectors, the picture is more complex and government must play a more active role. There is much to be gained from marketisation of services but change has come mainly by default rather than by design. Change has also produced unexpected outcomes with a precipitous decline in rural health care provision and a clear shift from preventive to curative care. In part this shift to more expensive, curative care is understandable as, with the exception of HIV/AIDS, communicable diseases have declined significantly and earlier immunisation programs have been successful. With the population now living longer, the diseases to be confronted are beginning to resemble more closely those of the urban, industrialised West. What is needed is better regulation of the health sector combined with adequate government financing for curative care and for poor areas.

A general conclusion emerging from this review of theoretical and empirical literature on intergovernmental fiscal relations is that the discussion on fiscal decentralisation has generally centred on four main areas: the assignment of expenditure responsibility; revenue assignment (taxing powers); intergovernmental fiscal transfers; and responsibility for sub-national borrowing. The discussion has emphasised that SNGs

need to be given access to adequate resources to do the job with which they are entrusted. At the same time they must also be accountable for what they do with these resources. Moreover, like all public policies, intergovernmental fiscal policies must take into account both the political constraints facing policy makers, such as the strength of different provinces and groups in political decisions, and economic constraints such as the stage of development of financial markets. A synthesis of the thesis of fiscal decentralisation and its critique is that the NGO sector should be included in the concept of fiscal decentralisation. One approach that may be promising is that the LGUs could contract the NGOs on competitive basis to provide the citizens of an LGU with “soft” social services while the LGU itself can concentrate on the provision of hard infrastructure within its jurisdiction. In tax matters, property taxes could be one important source of revenue to LGUs but more frequent valuation of property values should be made as basis for the tax liability calculation. Introduction of sales taxes while promising in some other developing context is not an option for Palestine because the Palestinian Authority (PA) has the value added tax system. What is needed in the Palestinian context is that PA should transfer part of the VAT revenues to the LGUs in order to empower them with enough resources to execute their duties with which they are entrusted.

4. Local Government Units (LGUs) in the Palestinian Territories

In 1995, following the Oslo Agreement signed between Israel and the PLO, the President of the Palestinian Authority (PA) issued the Transfer of Authorities Law²¹ according to which “all authorities and powers mentioned in legislation, laws, decrees, orders in force in the West Bank and Gaza before May 5 1994 shall be transferred to the PA”.²² The Transfer of Authorities Law²³ also authorised the President of the PA to enact new legislation with the consent of the PA council. All Jordanian laws and mandate/Egyptian laws²⁴ continue to be in force in the PA areas unless they have been replaced by new Palestinian laws. Below we will review relevant laws and regulations enacted by the

²¹ The Law Concerning Transfer of Authorities and Powers no. 5 of 1995 was issued on April 17 1995. *Palestinian Gazette*, no. 4 (May 6, 1994), p. 17.

²² Law no. 5 of 1995, article 1.

²³ *Ibid.*, article 2.

²⁴ Approved by June 5, 1967.

Palestinian Legislative Council (PLC), as well as relevant PA policies and practices that regulate and influence the relationship between the central government and the LGUs. Particular emphasis is given to legal issues that need to be resolved to safeguard the rule of law and facilitate the decentralisation of government.

The number of new laws enacted by the PA that pertain to local government issues is rather limited. A review of the *Palestinian Gazette* reveals that out of fifty-seven laws that have been enacted,²⁵ only two are directly related to the local government functioning. These are:²⁶ (a) the Palestinian Local Authorities Law of 1997, and (b) the Elections for Local Authorities Law of 1996.

4.1. The Palestinian Local Authorities Law of 1997

This law replaces the following two Jordanian laws that used to govern the West Bank prior to the PA: (a) Municipalities Law no. 29 of 1955 and (b) Administration of Villages Law no. 5 of 1954. It likewise replaces the following British Mandate laws in Gaza Strip: (a) the Municipalities Ordinance of 1934 and (b) the Administration of Villages Ordinance of 1944.

The Local Government Law (LGL) provides “a statutory framework for the functioning of the local government in the West Bank and Gaza Strip. It delineates the role of the elected councils of the LGUs and their relationship to the central government, primarily through the Ministry of Local Government.”²⁷ In order to comprehend the legislative solutions better, a review of the main provisions will be provided and the main legal and administrative issues will be examined.

4.1.1. Formations and Dissolution of LGUs

Upon recommendation by the Minister of Local Government, the Council of Ministers has a mandate to determine the establishment, structure and boundaries of LGUs.²⁸ However, there seems to have been some failures to comply with the details of the law.

²⁵ See the website at: <www.lawcentre.birzeit.edu>.

²⁶ *Palestinian Gazette*, no 16 (January 30, 1997), and no. 20 (November 29, 1997).

²⁷ ARD, Inc. discussion paper (April 2000), p. 7.

²⁸ Article 4 reads as follows: “1. In accordance with the provisions of this law, the structure, formation, and jurisdiction (boundaries of the Palestinian Local Bodies shall be organised and prescribed in a mandate issued by the Council of Ministers based on a recommendation by the Ministry.”

Such failures are found in the renaming of the city of Small Abasan to New Abasan in the Gaza Strip where the decision was taken by the President of the PA instead of the Council of Ministers. Another example involves decisions issued by the Minister to establish agricultural villages in the Gaza Strip in 1997 where there was no reference to the LGL, but only to the previous British Mandate Law.

4.1.2. Functions of the Authorities of LGUs

Similar to the 1955 Municipality Law, in the Local Authorities Law of 1997, Article 15(A) the “functions of the Council” are specified in a list of at least twenty-seven items including: town and street planning, building and construction permits, water supply and power supply.

The Municipal Council has the capacity to delegate some of its functions to contractors for up to three years with the Minister’s approval. The corresponding paragraph in the Jordanian Law extends this period to thirty years.

The Municipal council is authorised to set up regulations to enable it to carry out any duty or to execute any power as stated above, with the Minister’s approval [Article 15(b)].

Upon examining the degree of actual application of the above, the following findings were compiled:

- The Ministry of Local Government (MoLG) has prepared no fewer than sixteen regulations/bylaws based on article 15 of the LGL.²⁹ However, since the power to issue such regulations lies with the councils of LGUs – not with the ministry – their legality is questionable, as the court found them *ultra vires* (i.e., issued outside the scope of authority).
- None of these regulations has been published in the official *Palestinian Gazette*.

²⁹ Such as, Banana Fermentation Regulations no. 5, 1998; Entertainment Fees Regulations, 1999; Demolition of dangerous Buildings Regulation, 1999; and Regulations Concerning Local Authorities’ Chairpersons, 1998.

- Municipalities in the West Bank have not initiated regulations based on article 15 of the LGL since 1994. Also, no such regulations have been published in the *Palestinian Gazette*.
- On the other hand, the powers that article 15 grants LGU councils have been exercised by various municipalities in the Gaza Strip. Judging by the content of the *Palestinian Gazette*, the Jabalia Municipality seems to be one of the most active in this regard, having issued fewer than twelve sets of regulations on various topics.³⁰

On the other hand, the LGL does provide some powers to LGUs in requiring that, in a case where another governmental body is developing legislation related to an LGU function, it should coordinate with the MoLG, which, in turn, shall seek the opinion of the local council.

A further step towards empowering LGUs was to allow joint service councils (JSCs) to be established.³¹ The joint efforts of several adjacent LGUs could be a positive step towards strengthening local government activities. At least forty-nine JSCs have been established.³² Special regulations were issued in this regard “in order to improve the standard and quality of services in the local authorities, especially in the small ones”.³³ However, these regulations have not been published in the *Palestinian Gazette*.

It is worth noting here that the MoLG and the United Nations Development Programme (UNDP) have had a long-term program for developing rural areas since 1994. As part of this program, 17 micro-region planning committees (MRPCs) have been established, serving 210 LGUs.³⁴ However, despite these good intentions, there is no legal basis for establishing MRPCs under the current version of the LGL.

³⁰ Such as the Regulation Concerning Streets and Roads and Pavements and their Maintenance, 2000. Another example is Regulations Concerning Collection of Taxes, 1999.

³¹ LGL, Article 15, paragraph C.

³² Regulations Concerning Joint Service Councils no. 1 of 1998.

³³ MoLG Report of 2003, p. 63.

³⁴ *Ibid.*, pp. 56-59.

4.1.3. The Relationship between the MoLG and LGUs

The MoLG is required³⁵ to determine³⁶ and monitor the functions and structures of the councils, including budgetary, administrative, financial and legal oversight. Also, the law stipulates that the MoLG is to issue regulations “in order to perform its duties”. However, no such regulations have been issued thus far.

As for the LGUs themselves, the council is described as an “independent judicial body”.³⁷ The LGU is to be managed by a council – the size of which is to be determined in regulations issued by the Minister. The chairman and members are to be directly elected.

No elections have been held once since the LGL was issued and only after an amendment to the law requiring that the chairman be chosen by the elected members, rather be directly elected by the people. This is not in line in keeping with decentralisation and democratisation efforts. The local elections which were scheduled to take place in June 2010 were postponed indefinitely on political grounds to make some space to convince the Islamic Resistance Movement (Hamas) to participate in the elections as step towards reunifying Gaza Strip and the West Bank.

4.1.4. Fiscal Affairs

Selling, donating, mortgaging and renting of immovable property of the council for more than three years require the Minister’s approval.³⁸ This article of the LGL is almost identical to article 44 of the 1955 Municipalities Law.³⁹ Borrowing funds (loans) by a council is likewise subject to the Minister’s approval. Article 45 of the 1955 Municipalities Law imposes the same limitation.

The percentage of fees and fines collected in accordance with the Transport Law to be transferred to LGUs is 50% (45% net, after the central government deducts 55 as management fees). This is considerably higher than the 35% under Jordanian Law. However, the criteria for implementing this article are still unknown.

³⁵ LGL, article 2(1).

³⁶ “Delineate the general policy prescribed for Palestinian local councils”.

³⁷ LGL, article 3(1).

³⁸ LGL, article 20.

³⁹ According to this 1955 Municipalities Law, article 5, a municipality is created upon application by the inhabitants of a village with a population of at least 2500, where there has been a council for at last five years. If this application is approved, a committee appointed by the minister is formed to function as the municipal council for a two-year period, during which time elections for a new council take place.

The manner of fiscal transfers to LGUs of revenues collected by the central authority is regulated by article 26, according to which at least 50% of revenues collected by the central authority are to be transferred to local bodies from which they were collected. Transfer of the remaining revenues is to be decided by the cabinet as per recommendations of the Minister in light of the following considerations:

- The number of residents of the local body.
- The ratio of its participation in collecting the revenue.
- Whether it has a special or particular status.
- Whether it is entrusted to carry out duties beyond the local level, and
- Its essential needs according to its developing plans (as approved by the MoLG).

This article is very similar to the 1955 Municipalities Law, and the first four criteria are identical in the two laws. The fifth criterion in the LGL, however, is additional. The first criterion implies that distribution should be proportional to population, which might discriminate against small towns and villages. The second criterion is not clear, since the taxes in this regard are collected by the central authority and not by LGUs. The third criterion also lacks clarity and is determined by the ministry (e.g., according to the status assigned by the MoLG using, as at present, categories A, B, C, and D). The fourth criterion is understandable on the basis that the 1955 law allows a municipality to provide public toll services to local communities outside of its boundaries. However, there seems to be no such parallel provision in the LGL.

There are two main differences between the LGL and the 1955 Municipalities Law. First, revenues according to the latter are limited to customs, fees for road transport and transport fines, whereas article 26 of the LGL does not refer to particular taxes but to all revenues. Second, the LGL allocates at least 50% of the revenues to the LGUs, whereas the 1955 Law does not reserve any minimum percentage for LGUs. Thus the current legislation seems to have intended an increase in LGU revenues. On the other hand, the current law limits the revenue generation capacity of the LGUs.

In matters of deductions, payments, allotments and production of an annual budget, LGUs are required to obtain ministerial approval for their financial activities. In addition,

a final account report of the previous year must be submitted to the minister for approval within the first two months of the subsequent year.⁴⁰

The legislation on financial transfers to local authorities is articulated in article 26 of the LGL. It in fact constitutes the main new legal form in this regard. The same law provides that 50% of the fees and fines collected under the Transport Law shall be returned to the local authority within which they were collected, although details on implementation are lacking. The 1954 Property Tax law is still relevant within municipal boundaries. In addition, the legislation on Gaza still remains to be reviewed. The LGL provides that property tax shall be collected in accordance with the Property Tax Law within the Municipal Boundaries no. 11 of 1954. This means that the old system will continue to function under the new law. It is understood that the Ministry of Finance (MoF) has been retaining 10% of collected taxes to cover collection expenses and transfers the remaining 90% to the MoLG which, in turn, supposedly allocates the money to LGUs based on the criteria set forth in article 26 of the LGL.

4.1.5. Enforcement

A main deficiency of the LGL is the lack of a comprehensive set of enforcement tools to enable LGUs to carry out their responsibilities. The only enforcement tool provided by the LGL is article 27, which is based on the 1955 Law and titled “Collecting of Local Authorities Revenues”. According to this article, in cases where due taxes and fees are not paid within a fifteen-day period, the council of an LGU will send notification requesting payment within fifteen days. The legislation provides for legal remedies against the request; an objection may be filed in court. If the due sum is not paid by the fifteen-day deadline, the council may order the sequestration and sale of movable property to cover the debt. The council may also order the withholding of one-fourth of the taxpayer’s salary.

The issue here is that this provision deals with enforcement only in relation to property tax or fees. The LGL does not deal with enforcement of issues such as protection of landscape, parks, display of advertising, protection of the city or town’s appearance, prevention of health problems, food sale in designated areas and noise levels. Such issues

⁴⁰ See articles 28, 30 and 32 of the LGL.

are enforced under the 1966 Planning Law,⁴¹ which confers enforcement authority upon the regional or local committee. It is thus necessary to add a comprehensive set of enforcement tools to the LGL to ensure that the legislation is properly enforced.

In light of the above, it is reasonable to conclude that the LGL has introduced some positive changes in comparison with previous laws. Nonetheless, it is still accurate to say that, in general, “the system of local government provided for in the Law of Local Government is centralised and paternalistic, particularly with respect to financial and fiscal matters”.⁴² However, the law reflects a centralised view of local government, as a proportionally high number of local government actions are subject to ministry approval which include the following:

- The local council’s bylaws (article 15 (b)).
- The annual budget (articles 15 (a), 25, and 31).
- Contracting out services (article 15).
- Selling and renting of property (articles 15 (a), 20 and 26).
- Loans (article 21).
- Reduction or cancellation of taxes/fees owed to the local council (article 28(a)).
- Penalties (article 28(b)).
- Final balance (article 32).
- The annual report (article 36).
- Tax and fee changes.

The LGL lacks clarity with respect to many issues. Inter alia, it lacks clarity on how the MoLG is to determine LGU functions and power; on what basis “other governmental bodies” may carry out tasks that are the responsibility of local councils; on the relationship between the power given to the local council and the powers given to the “Local Committee”.

⁴¹ Articles 40-45 of the 1966 Planning Law.

⁴² ARD, Inc. working paper (February 2000), p. 5.

4.1.6. Functions of LGUs

Local government bodies increased after the establishment of the PNA from a total of 30 municipalities, 109 village councils before 1994 to 120 and 251 consecutively. Also there were no “project committees” before 1994 but 128 were added after that. A logical result of that was the increase in the number of employees at these bodies which increased from 5334 before 1994 to 11,745 persons after 1994. These LGU provide basic services which include electricity, tap water, and waste collection and disposal. The following table indicates the coverage of these services according to the LGU type.

The number of LGUs changed over time but it had increased substantially due to the establishment of the PA and their structure had become more diversified reflecting a movement towards more administrative decentralisation. Table summarises this trend.

Table 1: LGUs Historical Development

	Ottoman Period 1516- 1917	British Mandate 1917- 1948	Jordanian Administra- tion 1948- 1976	Israeli Occupation 1967-1994	1994- 1997	2000	2004	2010
Municipalities	22	62	25	28	86	95	121	132
Village Councils	0	0	87	87	197	212	252	235
Project Committees	0	0	0	0	98	111	128	115
Total	22	62	112	115	381	418	503	482
Joint Services Councils	0	0	0	0		42	86	86
Total	22	62	112	115	381	460	589	568

Source: Joint Services Councils Department, Ministry of Local Government. Ramallah, 2010.

The functions to be carried out by LGUs are specified in the 1997 LGL and are listed in the first Column of Table 1. The current laws (in particular the LGL and the Elections for Local Authorities Law) make no distinction between the different types of LGUs. Thus, all types of councils, including municipalities, local councils, village councils, and project committees are required to undertake the same functions. There is a clear need to differentiate among different functions to be carried out by different types of councils, and to amend the legislation accordingly. All of the listed functions are mandatory; the LGU is obliged to undertake the functions or at least monitor the situation and provide

any of the services that are lacking and not being provided by another agency. The last category if the table suggest that the mandate given to LGU is “open ended” (i.e., the LGU could also undertake other functions it deems necessary, or if required by the MoLG). Carrying out most of the listed functions requires a range of skills, as categorised in the table below. It is notable, however, that ten of the functions require mainly technical skills, while several functions cannot be clearly placed in one of the five skill categories. These functions are summarised below:

The functions of the LGUs are wide and summarised below:

- Town planning & road construction.
- Building licenses and control.
- Water supply, construction & management.
- Electrical supply, construction & management.
- Sewage management, construction & control.
- Public markets management.
- Licensing of trade and businesses.
- Public health; collection & disposal of solid waste.
- Public entertainment control.
- Public parks.
- Cultural & sport activities.
- Public transport (land & sea).
- Control of peddlers & open markets.
- Weights & measures control.
- Advertisement control.
- Building demolition.
- Control of beggars.
- Sale of closed roads.
- Cemeteries.
- Hotel operation control.
- Budget & LGU personnel.

- Management of LGU assets.
- Other functions & miscellaneous.

The interesting question is how these functions are resourced? To answer this question we need to look at both the revenue and expenditure sides of the LGUs. In a sample of 35 municipalities in the West Bank Sabri and Jaber (2007: 357) found that most of the problems faced by the LGUs are those related to the fact that citizens, who constitute the constituency of the LGUs, do not pay their duties. However, there are many problems related to the fact the central government does not transfer the funds accrued to the LGUs. Table 2 below summarises these problems ranking them from the most critical to least critical.

Table 2: Problems Faced by LGUs

Major Problem	Rank
Beneficiaries do not pay their dues from fees and taxes	1
Ministry of Finance does not transfer municipality dues	2
Beneficiaries do not pay their dues from water and electricity	3
Beneficiaries do not pay their dues from rents of stores	4
Unclear relationship with the Ministry of Finance	4
The absence of retirement law or unified service termination system for municipalities	5
The absence of the special data for citizen's payment regarding property taxes	6
Ministry of Local Government does not agree on modifying budget allowances	7
Delay from Ministry of Tourism and Antiquities in approving building licenses	8
Interference from the Ministry of Local Governments in the administrative recruitment for municipality	9
Delay from Ministry of Local Government in ratifying budget	10
The absence of cooperation of Ministry of Local Government Office in the Government	11
The absence of coordination with the Ministry of Planning concerning developmental projects	12
Sudden inspection for Monitoring Directorate by the Ministry of Local Government	13
Working under firm system Of supervision and monitoring by the Ministry of Local Government	14

Source: Sabri and Jaber (August 2006), Financial and Managerial Analysis of Palestinian Local Government, a research paper in the framework of the Reform Project of the Palestinian Public Administration and Civil Services, CCE of Birzeit University and C3 Management & Economic Consulting & Adam Smith Institute, p. 31.

Table 3: Distribution of Basic Services by LGU Type

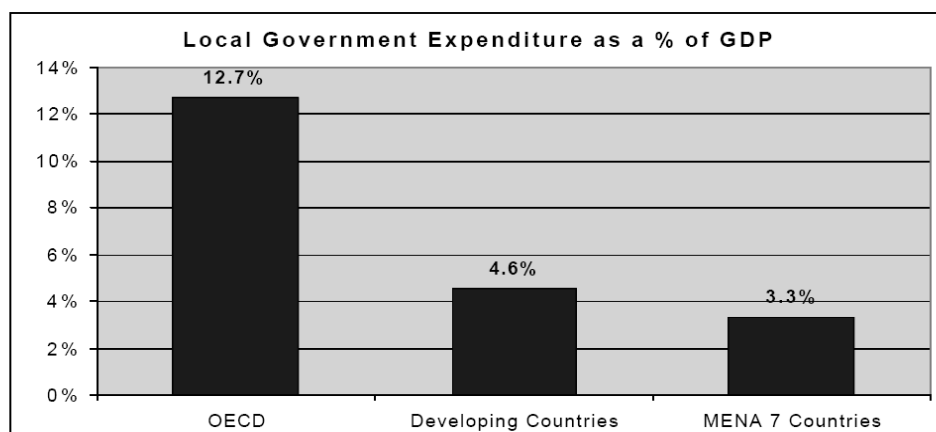
Service	Municipalities (M=120)		Village Councils (VC=251)		Project Committees (PC=128)	
	Number of M providing the service	(%)	Number of VC providing the service	(%)	Number of PC providing the service	(%)
Tap water	112	93%	199	79%	59	46%
Electricity	120	100%	238	95%	89	70%
Waste Collection & Disposal	120	100%	211	84%	56	44%

Source: Hussein A'raj, The Experience of Local Governments in Palestine, in The Challenges of Decentralization and local Government in the Arab World, the Lebanese Center for Studies 2005: p. 170.

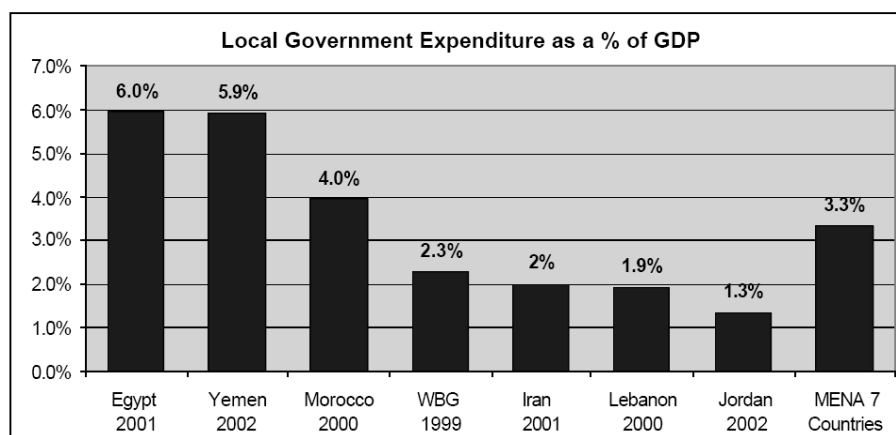
4.1.7. Assignment of Expenditures

Assigned responsibilities are closely linked to local infrastructure and capital outlays, which account for an estimated 40% of total development expenditures in the PA budget. Essentially all capital financing comes from international donors. This situation is unsustainable over the long run and highlights the urgent need for all Palestinian LGUs to move incrementally towards self-finance of their development investments.

Local government expenditures averaged at most 2.5% of GDP for 1999 and 2.8% for 2001. This should be compared with an average of 13% for OECD countries and 4.5% for a sample of developing countries. If compared, local and central government expenditures indicated that the ratio of local government expenditures to total PA expenditures in 1999 and 2001 stood at 12 and 11%, respectively, as compared to an average of 33% for high income OECD countries and 17.5% for less developed countries. However, their importance to the private business is higher than the central government as indicated by the business community. The coming four figures show these facts.

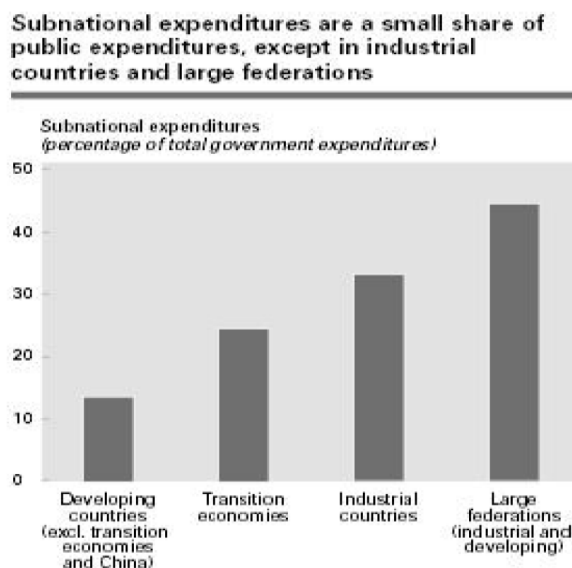
Figure 2: Local Government Expenditure as a % of GDP

Source: World Bank, West Bank and Gaza, Strengthening Public Sector Management 1999, Table A.3; World Bank, Municipal Management and Decentralization in the MENA Region 2004.

Figure 3: Local Government Expenditure as a % of GDP

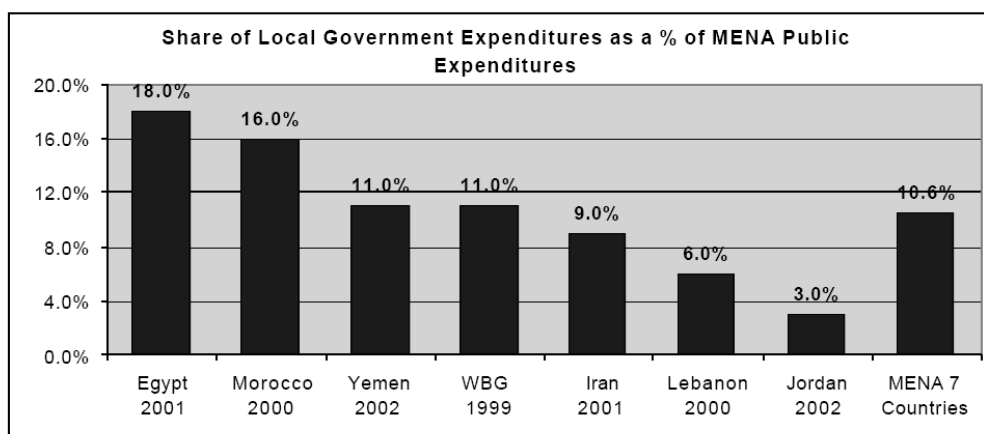
Source: World Bank, West Bank and Gaza, Strengthening Public Sector Management 1999, Table A.3; World Bank, Municipal Management and Decentralization in the MENA Region 2004.

Figure 4: Global Sub-national Expenditures as a Share of Public Expenditures



Source: World Bank, 1999/2000 World Development Report, Figure 5.1; and Municipal Management and Decentralization in the MENA Region 2004.

Figure 5: Local Government Spending as a Share of Total Spending in MENA Countries



Source: World Bank, 1999/2000 World Development Report, Figure 5.1; and Municipal Management and Decentralization in the MENA Region, 2004.

In summary, what the data show is that that governments in developing countries are much more centralised than those in industrialised countries, and governments in the MENA region are even more centralised than the average for developing countries. Local government is a small part of total government and of national economic activity in the Middle East region. The Palestinian case shows an average pattern of the Middle East and North Africa (MENA) region.

4.1.8. Financing of the LGUs

LGUs must have funds available to sufficiently meet their expenditure responsibilities. Within limits, LGUs should have control over user fees, tax rates and some tax bases. Typically, there are two main funding sources for LGUs: (1) self-generated revenues from taxes and/or user fees and (2) central government fund transfers, including any donor assistance. Revenue assignment to LGUs should help create an appropriate diversification of funding sources, while at the same time allow for the level of planned expenditures.

The 1997 LGL leaves LGUs little or no control over the fees and taxes they can charge. The MoLG must ratify all such fees and taxes before they are put into effect. This destroys much of the ability of LGUs to match local preferences, capabilities and willingness to pay. This centralised control by the MoLG also implies that the mix of taxes and fees is determined from top-down and takes no account of the unique social/political relationships that exist in each community. Finally, there is no provision in the law that requires LGUs to set user fees at a level that covers the cost of service or addresses the possibility of LGU insolvency. The types and weights of various funding sources utilised by Palestinian LGUs are shown in Table 4.

Table 4: Sources of LGUs Funding

Total LGU Current Revenues (Million USD)	120
Own Revenues	% of Total Revenues
(1) Utility-User Charges	55
(2) Non-Utility Revenues	
Shared Property Taxes	6
Shared Transportation Taxes	5
Shared Occupation Taxes	1
Building Licensing Fees	20
Other Local Fees	08
Total Non-Utility Revenues	40
Total Own Revenues	95
Fund Transfers from or via the PA	5
Total	100

Public utilities presently constitute the largest single item of revenue in most LGU budgets. Local utility accounts and local general government accounts are combined, however, and the financing of both functions is very much intertwined. Where municipal utilities exist, their gross revenues dominate local accounts, ranging from 50 to 80% of total revenues. Furthermore, utility net cash flow helps to support other municipal expenditures. In the sample of municipalities examined, net utility income provided between 17 and 45% of total revenue. This observation suggests that utility operations are economically feasible. For example, the Nablus Municipality earns a “gross profit” of about 30% from electricity sale revenues, and similar results are found for water supply services. However, other studies on “profitability” of utility supply (particularly for water) provide mixed evidence. A study of ten municipalities in the northern West Bank shows that only one municipality does not operate its water system at a loss (NORCONSULT). The study by RTI shows all but one of the twenty-three municipalities to have surpluses. The same study estimates cost recovery in solid waste disposal to be in the 20 to 50% range.

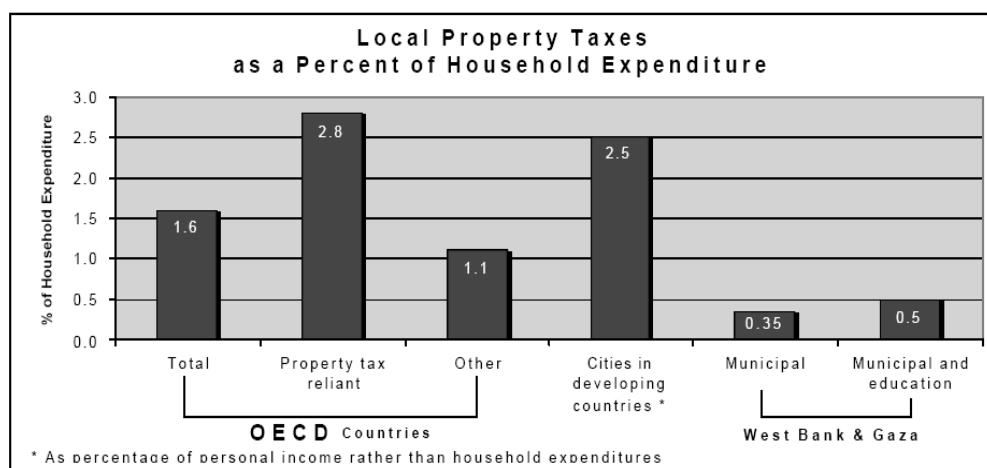
Nonetheless, net utility revenues are misleading when taken at face value for a number of reasons: Revenues may cover running cost of services, but they do so without provision for depreciation and maintenance. Thus, capital costs are not covered. This trend results from the fact that all Palestinian LGUs account for their transactions based

on the cash basis. Almost no LGU employs accounting or management practices to determine the true costs of services. Without good service costing, reasonable economic fees cannot be set. Finally, water and electricity operation surpluses, if any, represent a fairly unreliable source of funds since many municipalities are behind in their payments to suppliers, partly due to some residents' inability to pay or abstention from paying fees owed. As a result, local underpayments become a central government burden due to the fact that two Israeli corporations that supply most Palestinian LGUs with water and electricity have had their arrears paid by Israel's Ministry of Finance, which in turn, deducts them from the clearances of VAT and other taxes it collects for the PA Treasury.

However, the PA Ministry of Finance (MoF) has recently begun to offset these Israeli deductions against transportation and fuel taxes due to LGUs. MoF records show that the aggregate amount of water and electricity arrears cleared by the PA Treasury against LGU dues exceeded NIS 75 million over the 1998-2000 period (representing about 65% of total LGUs' dues collected by the MoF). A senior MoF official estimated that LGUs' total utility debt to Israeli companies might reach as high as NIS 750 million.

Unfortunately, revenues from property taxes are trivial and barely reach 1% of the revenues generated by the LGUs. This is to be contrasted with higher shares in more developed countries. **Figure 6** shows local property taxes as a percent of household expenditure in different countries. The funding of the LGUs, especially the larger units, depends more on utility projects such as water and electricity and most probably will remain so until better property valuation system is in place to account for the bonanza owners of land could get during high periods of urbanisation like the one we witness in the Palestinian territories.

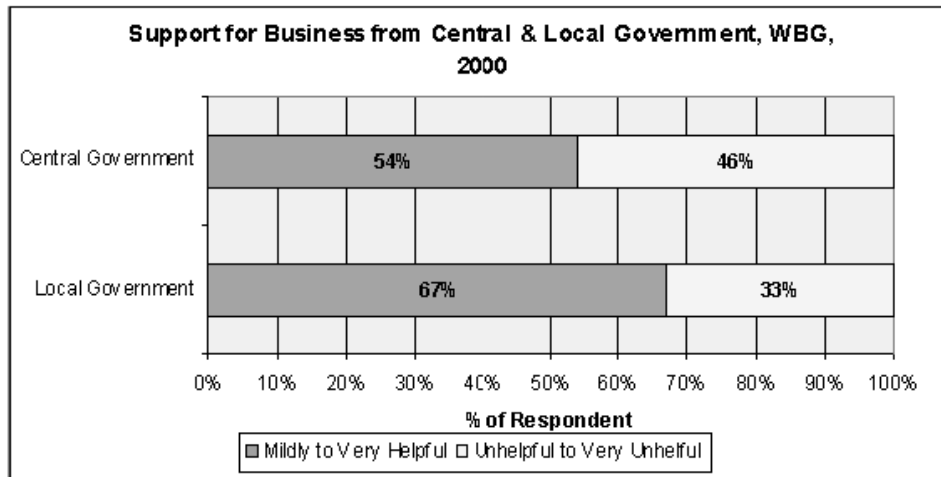
Figure 6: Local Property Taxes as a % of Household Expenditure



Source: West Bank and Gaza: Strengthening Public Sector Management, West Bank and Gaza Resident Mission, Jerusalem, 1999.

Assignment of more taxing power to the LGUs is supposed to play a critical role in enhancing their role to develop the local communities including creating the proper environment to support the development of the private sector and making it the core of employment for a growing labour force. **Figure 7** shows how LGUs are more helpful to the business community than the central government in the West Bank and Gaza Strip.

Figure 7: Business Opinion of Central and Local Governments, West Bank/Gaza



Source: Sewell (February 2004), *Decentralisation: Lessons from Other Middle Eastern Countries for Iraq*, p.9.

5. The Palestinian NGOs Sector

5.1. History, Role and Financing

For years, the Palestinian struggle in the West Bank and Gaza Strip took the form not only of popular resistance against the occupation but also of collective efforts to deliver, often free of charge, an array of relief and developmental services not provided by the Israeli government (Sullivan Spring 1996: 93-100). Even today, 14 years after the establishment of the Palestinian Authority (PA), Palestinian nongovernmental organisations (PNGOs) still account for the majority of services in the West Bank and Gaza Strip. Providing health care, education and training, agriculture extension, housing assistance, human rights and legal aid, charity/welfare, technical assistance, and so on, they are run by church groups, Islamic charitable organisations, voluntary associations, women's committees, political groups, and independents. Their diversity embodies a strong element of political pluralism and constitutes an important

component of emerging civil society. With the advent of the PA, however, the future of the PNGOs is less certain.

PNGOs began largely as welfare organisations in the 1920s and 1930s and developed as a full-blown sector after the Israeli occupation of the West Bank, East Jerusalem, and the Gaza Strip in 1967. This "third sector" (as contrasted with the governmental and private sectors) developed further with the onset of the Intifada in December 1987. By the mid-1990s, PNGOs provided up to "60% of primary health care services, nearly 50% of hospital care, and 100% of disability care"; nearly 100% of all agricultural extension, training, and research; and about 30% of educational services, including almost all kindergartens and day-care centres. The Palestinian NGO sector has as many as 1,500 organisations employing anywhere from a handful of workers to as many as three hundred, the average staff being twenty. In all, the NGO sector employs 20,000-30,000 people. In addition, there are some two hundred international NGOs (INGOs) providing a similar range of activities to Palestinians, usually in cooperation with PNGOs. It is worth mentioning that even if we take the lower estimate of employment by PNGOs, the figure is still double the figure of people employed by all LGUs.

Over 40% of PNGOs are concentrated in the Ramallah-Jerusalem-Bethlehem area, but many of these provide services to communities throughout Palestine. For example, two primary NGOs located in or near Jerusalem, the Palestinian Agricultural Relief Committees and the Union of Agricultural Work Committees, provide agricultural extension services to Palestinian farmers throughout the West Bank and Gaza Strip. Similarly, the Early Childhood Resource Center, headquartered near Bayt Hanina, trains preschool, kindergarten, and day-care teachers in villages and refugee camps throughout the West Bank (but not in Gaza due to Israeli restrictions). Most of the PNGOs are almost entirely dependent on foreign aid from a range of sources, including the European Union and various individual European states, Japan, the United States, UNICEF, United Nations Development Program, and INGOs such as Oxfam, Christian Aid, the Welfare Association (a Geneva-based Palestinian organisation), and the Arab Trust Fund (Kuwait). Almost all of this aid is now threatened or already has been stopped because donors are shifting resources to the PA.

While many of the PNGOs are well-staffed and efficient operations, others are criticised by colleagues for lack of professionalism and non-accountability; a number of them do not have a general assembly or board of directors to which to report. Another problem in the NGO sector is duplication, often caused by factionalism. Internal divisions

within the Palestinian national movement were replicated in the occupied territories, with the various factions-the Democratic Front for the Liberation of Palestine, the Popular Front for the Liberation of Palestine, Fatah-and other secular parties, not to mention the Islamic organisations, all having their own NGOs, resulting in some communities having a plethora of NGOs engaged in similar activities. Partially mitigating the tendency toward duplication is a large number of NGO networks and unions. Most of the PNGO activity in health is managed by two medical unions, the Union of Health Work Committees and the Union of Palestinian Medical Relief Committees; in addition there are three other primary unions for health care. The Union of Voluntary Women's Societies, one of eight unions for women's activities, groups some fifty-five women's organisations. Other unions and networks include, but are not limited to, two unions for education, two for agriculture, one primary network for the aged, one also for the disabled, one for conflict resolution, a new one dedicated to local NGOs monitoring the electoral process, and one consortium "for the right to live in Jerusalem."

Cross-sectoral coordination is one of the goals of the General Union of Charitable Associations in Palestine, which traditionally has been a primary conduit of economic assistance from the PLO and Arab donors to its 385 members, almost a third of all PNGOs. Originally organised in Jordan in the 1960s, the union moved its headquarters to Jerusalem in 1991 and has regional branches in Jerusalem, Hebron, and Nablus. (Attempts to establish a branch in Gaza have been prevented by Israel, apparently on the grounds that it could become dominated by Hamas.) Member organisations provide extensive services ranging from literacy and vocational training and financial aid (grants and loans) to running sports clubs, orphanages, day-care centres, and health clinics.

5.2. PNGOs Functions and Characteristics

PNGOs encompass a wide variety of issues which include agriculture, business development, children and youth, community development, consumer protection, counselling and mental health, culture, democracy, research, media & communication, education, elderly people, environment, health, human rights and legal aid, special needs, and women. Some of these are politically affiliated to the wide spectrum of Palestinian political map. But affiliation does not necessarily mean the same level of activity. The Islamist movement, as well as the People's Party have limited number of NGOs but they contribute more than what the sheer number of organisations may reveal. In Nablus, Islamic-affiliated NGOs do not exceed more than 25% of the NGOs in the district. Yet

they are responsible for approximately 80% of all NGO activities through the provision of a range of services to their constituents, including health care, kindergartens, and day care facilities. More significantly, these NGOs also run factories that provide income generating activities, including a yogurt factory as well as medicine and medical equipment companies. Hamas' presence in Hebron is even stronger than in Nablus in the non-governmental sector. Its charitable societies also run income-generating projects, such as bakeries, restaurants, shoe factories, and sewing and textile facilities. While Fatah-affiliated NGOs account for the majority of organisations in most districts, they are largely inactive and poorly funded. Table 5 shows the number of PNGs according to different studies. The most recent estimation is that of the NGO Mapping Project which is more accurate than other estimates.

Palestinian NGOs are characterised by the following facts:

- 1) They actively coordinate community volunteering activities.
- 2) Vocational training is central to the function of NGOs in multiple sectors.
- 3) The majority of NGO employees work for a minority of organisations. Volunteer-based NGOs are often the organisations with the largest constituencies.
- 4) NGOs focused on social service activities are also effective promoters of democracy and civic participation.
- 5) A key deficiency among these NGOs is the lack of permanent infrastructure to sustain activities in communities.

Table 5: Number of NGOs in the West Bank per District

District	UNSCO	MAS	NGO Mapping Project
Bethlehem	89	128	228
Hebron	72	151	210
Jenin	52	116	77
Jericho	57	20	19
Jerusalem	124	81	130
Nablus	93	138	112
Qalqilya	18	33	31
Ramallah	145	166	285
Salfit	23	27	22
Tubas	-	25	13
Tulkarem	41	66	69
Total	714	951	1196

Source: Center for the Study of the Presidency (May 2008). The NGO Mapping Project: A New Approach to Advancing Palestinian Civil Society, p. 8.

There is a high, though declining confidence in the Palestinian NGOs. Table 6 reveals this fact. However, it is obvious that these organisations still have the largest proportion of confidence when compared to other institutions of the PA.

Table 6: Confidence in Palestinian Institutions

Rate of Palestinians that declared their confidence in the following institutions		
Institution	September 2000	February 2003
PNA institutions (in general)	42%	32%
PLC	41%	34%
Security Establishments	49%	38%
NGOs	53%	47%

Source: Nader Said, Indicators of Good Governance within the Palestinian set-up, Workshop. Proceedings, Good Governance and Participation in General National Guidelines, Ramallah 2003.

5.3. Assessment of the Relative Importance of the PNGOs

To assess the economic value added of the NGOs sector in the Palestinian Territory, I referred to the PCBS data. The data reveal that the value added by the social and community activities including those of the NGOs increases steadily from \$20.4 million in 1994 to \$69.9 million in 2007, i.e. an annual growth of 9.7% and raising their share in the GDP from 0.68% to 1.54% in the remaining West Bank and Gaza Strip (i.e. excluding East Jerusalem for the data stagnated and not collected after 2000). The growth of these activities was more pronounced in the Gaza Strip (18.4%) as compared with the remaining West Bank (6.9%). These are conservative estimates as the average of annual salary at these NGOs is about \$6000. Taking the lower estimate of employed persons at these NGOs, which is 20,000 persons, the value added by them can be put at \$120 million, i.e. their share in the GDP could rise to about 3%. These calculations indicate that the FDI might increase by 3.4 percentage points in 1994 and 6.2 percentage points in 2007 if the NGOs expenditures were added to the expenditures by the local governments.

6. Conclusions and Policy Implications

Based on the Palestinian experience in fiscal decentralisation the following conclusions are in order:

- The traditional theory of fiscal decentralisation has to be adapted to the conditions of the developing countries as many assumptions of the theory do not hold in their conditions.
- The question is whether fiscal decentralisation is “coming together” or “holding together”. These two directions are in conflict as the poor and minorities look for the central government as the protector. Therefore, economic considerations of efficiency are overruled by consideration of political economy.
- Moreover, fiscal decentralisation has to include the NGO sector which will have implications for the measurement of fiscal decentralisation but above all will require a new approach to their inclusion in the public financing schemes and division of expenditure among them and the LGUs.
- The best division of these expenditures is to leave infrastructure projects to the LGUs while leave the delivery of other “soft public services” to the NGOs.

Fiscal decentralisation in the Palestinian context is far behind the administrative decentralisation that had taken place after the creation of the PA. This means that the PA should empower the LGUs with more tax assignment to bring the assignment of expenditure in line with the assignment of tax. The PA should allocate more of the VAT taxes it collects to the LGUs to make this balance of expenditure assignment with tax assignment. However, two more important policy implications are to be considered in this balancing act:

- There should be more frequent update of property valuations upon which property taxes are levied and paid to LGUs.
- The PA should allocate more revenues of fuel taxes to LGUs to enable them maintain the roads and expand them according to approved structural plans.
- The LGUs should contract the NGOs on competitive basis and according to well-specified TOR to provide soft public services. In other words, we should remember that provision does not necessarily require that these soft services be produced by the LGUs. Alternative and more efficient providers should be considered.

Decentralisation after all is a comprehensive concept and is more complex than paying lip service to it. It is all about bringing the power near to the people to decide about what to do with the taxes they are liable to pay. A balancing act between fiscal decentralisation and administrative decentralisation should be developed to ensure that the process is compatible with its true meaning.

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Issues, Performance and Trajectories of the Micro Finance Sector*

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Introduction

Over the last two decades the success of various micro credit programs, mainly although not exclusively in the Indian sub-continent, made micro finance a subject with growing popularity among economists and policy makers.¹ Although substantial disagreement still exists on most of the issues surrounding micro-lending, in particular on the key problem of whether it should be provided by non-profit organisations on a non-market basis or by commercial institutions charging market-level interests, consensus seems to have emerged on the strong potential that micro finance has as a device to foster economic growth and reduce vulnerability and disparity among populations.²

Despite the growing interest in the topic, still very little academic research, if anything at all, exists for the Palestinian case. Our preliminary survey of the literature has revealed that available studies do not go further than an MA dissertation published by the University of Uppsala in 2008 and some descriptive works, largely at micro level.³

This is surprisingly given that Palestine is a very interesting case study for at least two reasons. Firstly, the lack of academic attention for this subject stands at odds with the fact that Palestine's micro credit is in fact a vibrant and developing industry,

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The usual disclaimer applies.

¹ See, among many others, Bounman (1989) and Yunus and Weber (2007).

² See Burritt (2003) and Hardy *et. al.* (2002) for international institutions perspective on the issue

³ Abuznaid (2005), Abukarsh (2005), and Fridell (2008).

characterised by the presence of a high number of very diverse institutions. Over the years, dedicated organisations have found their ways to address issues of relative lack of financial deepening and of widespread credit rationing from “high street” banks, in a context where endless military conflict and political and economic instability exacerbated these problems. On top of the natural interest that such a dynamic sector is supposed to stimulate, the study of micro credit in Palestine is interesting for another reason. Developing more direct participation in, and stronger responsibility for the economy among less affluent and often cut-off members of the society is considered one of the main aim of micro finance. Such development of stake-holding is important in every developing country, but it is particularly relevant in economies where the availability of a disproportionate amount of external loans and donations risks to ingenerate passive if not parasite attitudes. In this regard Palestine is a very good case in point; as stressed for example by the *Israel/Palestine Centre for Research and Information*, empowerment and direct participation in the lending process characterising micro finance projects might help to break the vicious circle between dependence on foreign aid – lack of entrepreneurship and stake-holding – further dependence on external support. Thus the effectiveness of micro credit to develop stake-holding, for example by using peer pressure as a way to enforce collective loans contracts, is worth some investigation.

Using data from the Palestine Monetary Authority and qualitative documentations provided by micro credit organisations, this chapter provides an overview of the current role played by the micro finance industry in Palestine, and of the opportunity and constraints for further development.

The paper is structured as follows; Section 1 provides an overview of the institutional characteristics of the credit market in Palestine, by looking at both the ordinary banking sector and at micro credit institutions. Section 2 covers some theoretical issues concerning the estimation of demand for micro credit. Using aggregate data, section 3 looks at the actual extent of the potential market for micro finance in Palestine and at the amount, directions, and characteristics of supply. Section 4 narrows the perspective on supply by looking at performance indicators, showing some of the problems characterising micro credit delivery in Palestine. Section 5 concludes.

1. The Palestinian credit market: institutional background

Before going deeper into the analysis of the aims, efficiency and effectiveness of Palestinian micro credit, a rapid overview of the main institutional characteristic of the credit market is in order.

The Palestinian banking system consists of the Palestine Monetary Authority (PMA) which performs some of the regulatory and monitoring functions of the central bank, twenty foreign and domestic licensed banks, plus various moneychangers and micro credit institutions. By August 2009 twenty different banks operated in Palestine, ten of which foreign (eight Jordanian, one Egyptian, and HSBC bank). Their total equity amounted to about \$893.8 million, with a paid-up-capital of about 77.6%. Banks conduct business through a network of 205 branches, 159 located in West Bank and 46 in the Gaza Strip (Table 1).

Table 1: Number of banks and branches in Palestine

Number of Banks		Number of bank branches		
		<i>West Bank</i>	<i>Gaza Strip</i>	<i>Total</i>
2001	21	89	35	124
2002	20	89	36	125
2003	20	94	37	131
2004	20	96	37	133
2005	20	101	38	139
2006	21	111	40	151
2007	21	119	41	160
2008	21	144	46	190
August 2009	20	159	46	205

Source: Palestinian Monetary Authority, 2009.

Notwithstanding the extraordinary risky conditions under which it operates, the Palestinian banking system still retains a high degree of confidence among its clients, as showed by the increasing volume of total deposits. Data show that between the end of 2007 and August 2009, deposits increased by 22.8% to reach the level of about \$6.3

billion. The increase in the supply of credit facilities paralleled the rise in deposits; by August 2009 total credit facility have reached the level of about \$2 Billion with an increase of more than 17% vis-à-vis the value at the end of 2008. However, as section 3 below shows, still Palestinian banks operate a very prudent ratio between deposit and supply of loans, as well as charging very high interest rates.

The micro finance industry in Palestine is dominated by ten major institutions grouped under the umbrella of *The Palestinian Network for Small and Microfinance institutions* (PNSMF). Within this group, four associations (Faten, Acad, Asala and Unrwa) had, in 2007, about half the total number of active clients⁴ (below we provide a brief description of their main activities, policies, and institutional features.

1. Palestine for Credit and Development – FATEN

FATEN has been active since 1998, and begun to offer loans one year later, in March 1999. Faten is the biggest micro credit association in Palestine and operates with an explicit efficiency and self-sustainability target. Faten offers a wide range of loans, from individual to group, and of various sizes; although it mainly targets women, this is not the exclusive market.

2. Palestinian Business Women Association – ASALA

Asala has been active since 1997 and contrary to Faten, it specialises on women customers. This institutional feature means that the efficiency target is somehow constrained by other goals, in particular empower of Palestinian women. Asala has two types of lending programs: micro lending program (group and individual loans) and small lending program. Micro lending program is conceived as a device to allow a woman or a group of low-income women to start an economic activity; loan size varies from about \$100 to \$5000. Small lending are not only more conspicuous in size (\$5000 to \$20000) but also subject to more controls and guarantees. However, the aim is still to allow women entrepreneurs to start or expand a business.

⁴ Source: The International Finance Corporation and The Palestinian Network for Small and Microfinance Institutions (2007).

3. Arab Centre for Agricultural Development – ACAD

ACAD is a non-profit, non-governmental organisation that has been officially registered in Jerusalem since 1993, and registered by the Palestinian Authority since 2001. It offers services to established low-income-generating business or to entrepreneurs-in-the-making in order to promote self sustaining employment and income-generating projects. Like the other organisations, Acad provides differed kind (and size) of loans. Acad serves both male and female customers.

4. United Nations Relief and Works Agency – UNRWA

The micro finance program of UNRWA started credit operation in 1991. The original aim was to create employment through capital-investment loans in existing business and start ups. By 1994 the focus shifted from the support to small and medium scale enterprise to microfinance. This change was even more visible after the 2000-2001 *second Intifada* when most resources were channelled towards the support of poor people in Palestine.

2. Estimating potential demand: theoretical issues

The first theoretical issue concerning the functioning of micro finance institutions in Palestine is the definition of their potential market. Although Burritt (2003) assumes that potential demand for microfinance services seems to be infinite if we take into consideration demand for a wide array of financial services beyond loans, including savings, insurance and remittances, still a more precise definition needs to be provided. In theory the potential market for micro credit institutions depends on two factors: on the one hand the amount of population able to express actual demand for financial services and, on the other, the share of such demand satisfied by ordinary commercial banks. In theory the clients of microfinance institutions are low-income self-employed entrepreneurs, both in cities and in the countryside. Rural clients are expected to be small farmers or other individual engaging in small-scale activities such as food processing and petty trade. Potential urban clients are a more diverse group including shopkeepers, service-providers, artisans, street vendors and others. Both classes of entrepreneurs demand financial services either to start or to enlarge their activity, but low level of income generation makes them very expensive clients for ordinary banks. Thus the scope

for micro credit depends, in theory, on the number of such potential clients, but also on the extent to which ordinary banks are or are not interested in this market.

To determine the dimension of the potential market for micro credit, a mainstream approach consists in dividing the active population into groups depending on their income. Visually this approach can be represented by the pyramidal graph 1 below. Various segments of the market can be described as:

A: rich individual who are served by ordinary financial institutions and are not interested in microfinance loans;

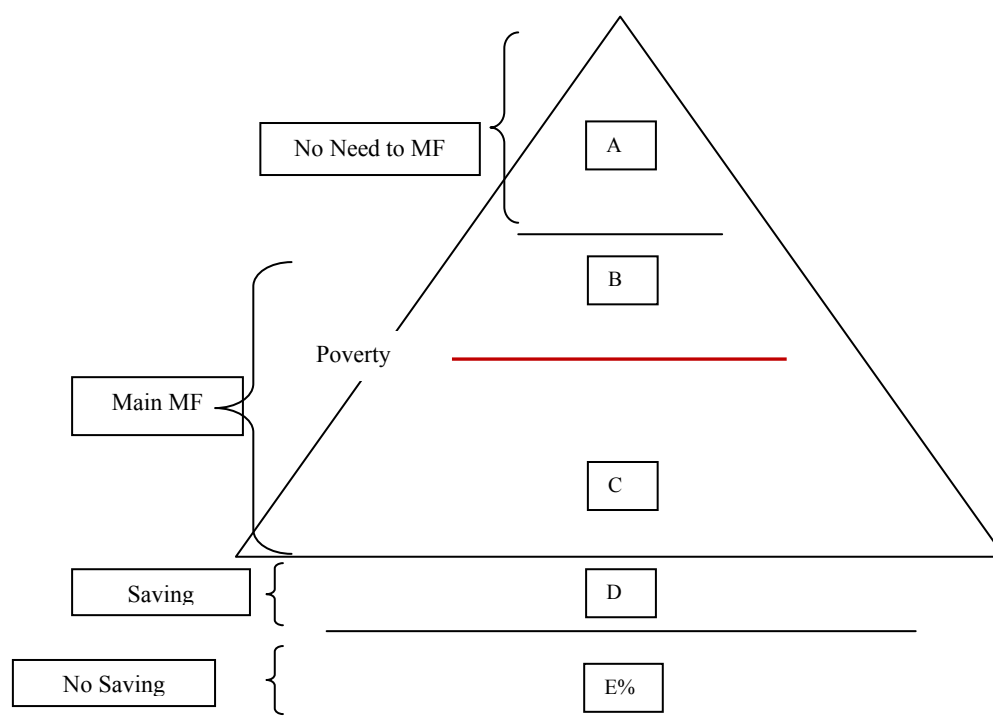
B: relatively affluent individuals (or at least above the poverty line) who might or might not have alternatives to microfinance institutions depending on banks' approach;

C: poor individuals who are classified below the poverty line but still having saving capacity; this is usually the main target for microfinance institutions;

D: individuals who are just above the classification of "poorest of the poor" and still have some level of saving capacity;

E: the poorest of the poor, with no saving capacity at all.

Figure 1: micro credit market segmentation



Source: Bedoya (2006)

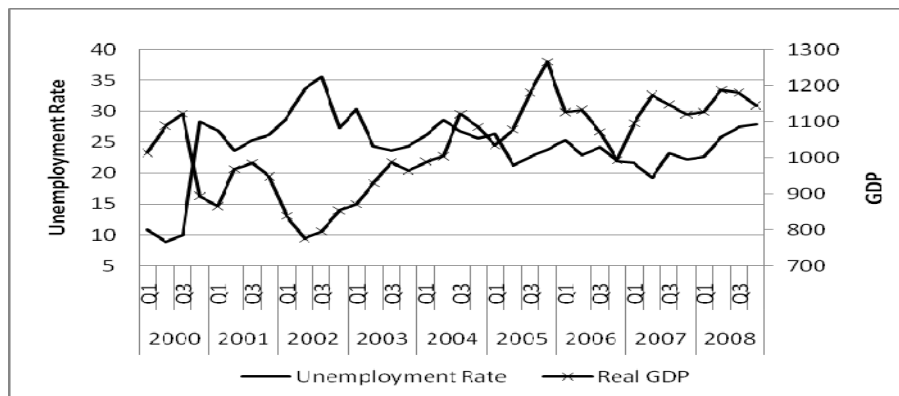
Potential demand for micro credit can be thus defined as the sum of *B*, *C* and *D*, although *C* is the main target. However, exactly how low or high income is supposed to be in order for potential clients to be considered either by ordinary financial intermediaries or micro credit institutions varies according to many factors. For example how much of the *B* segment is going to be considered by ordinary credit institutions depends on their risk-taking attitude as well as on the availability of alternative investment opportunities. On the other hand, from the point of view of micro credit institutions serving or not the *E* segment depends on whether they want to engage only with self-sustained market-based investment, or whether for political/ideological reasons they also want to target the segment of population (the very poor with no saving capacity) that could never become part of the official credit market.

3. Actual demand and available supply

Although a precise analysis of the attitudes and policies of various kinds of banking institutions is behind the scope of the paper, a brief analysis of aggregate statistics suggests that the potential market for micro credit in Palestine is significant. This is because the amount of population that can be classified as being part of the *B* to *D* segments is large (if not increasing), but also because by general standards ordinary banks seem to have a rather conservative approach.

A rapid overview at general macroeconomic conditions in Palestine indicate that after substantial increase between 2002 and the end of 2005, from 2006 real GDP declined while the rate of unemployment stabilised around 20-25% (*Figure 2*).

Figure 2: Real GDP vs. Unemployment rate (2000Q1 – 2008Q3)

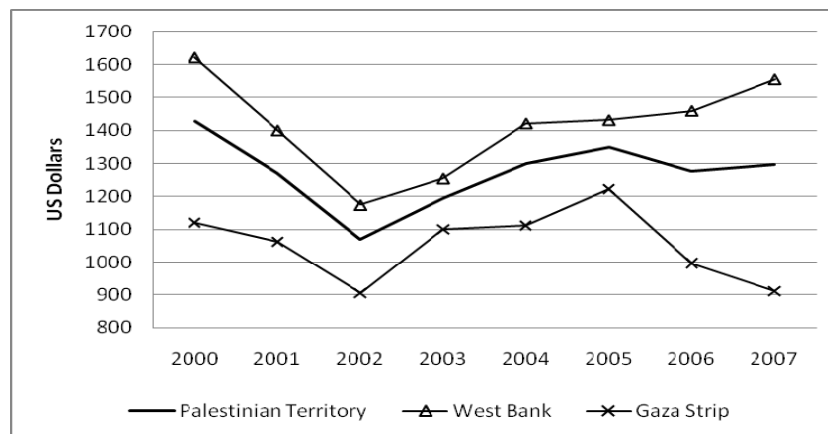


Source: Palestinian Central Bureau of Statistics (2009).⁵

A closer investigation, however, shows that increasing poverty at national level paralleled growing inequality between different geographic areas. In particular a large discrepancy is evident between West Bank and Gaza Strip. *Figure 3*, shows that after 2006 GDP per capita in the Gaza Strip declined sharply, while it increased in the West bank even if, by the end of 2007, it was still below the 2000 level.

⁵ 1997 is base year for real GDP during 2000-2003, and 2004 is the base year for 2004-2008.

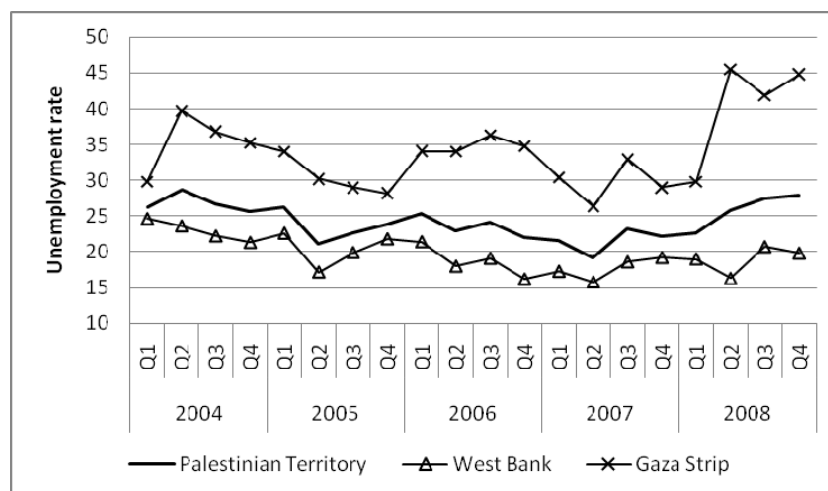
Figure 3: Real GDP per Capita



Source: Palestinian Central Bureau of Statistics (2009).

This picture finds its parallel in the different patten of the rate of unemployment in the two areas (*Figure 4*).

Figure 4: Unemployment Rate in Palestinian Territory



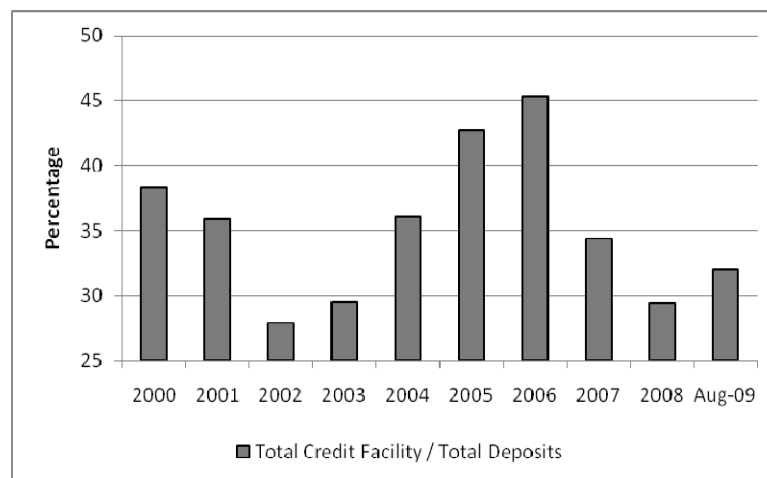
Source: Palestinian Central Bureau of Statistics (2009).

This process of growing inequality at geographic level went hand in hand with an increase in the unevenness of income distribution. By the first half of 2006 The Gini coefficient indicated that inequality of income distribution was about 64%.⁶ Meanwhile by the end of 2006 the number of people considered as “poor” in Palestinian Territory increased by 13.6% as compared to the end of 2005, reaching the level of 2.1 millions.⁷

Given that poorer people have less access, if any, to bank loans, changes in the macroeconomic conditions of Palestine seemed to have increased the potential market for micro finance.

On the other hand, by examining the ratio between the level of deposits and amount of total facilities offered by commercial banks in Palestinian Territory in the last few years we can see how prudent the approach was. During the mentioned period, the average ratio of total facilities to deposits was only 33.8%, and while a growing trend is noticeable up to 2006, the following years the tendency inverted (*Figure 5*).

Figure 5: Ratio of total credit facilities to total deposits



Source: Authors' elaboration from The Palestine Monetary Authority (PMA) 2009.

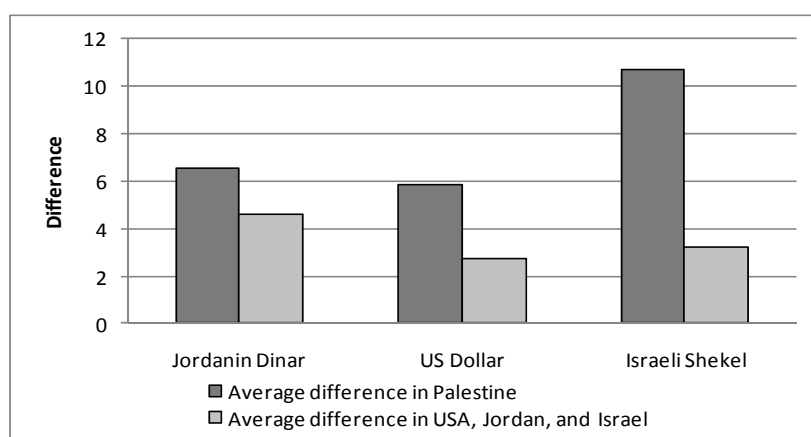
⁶ Source: Palestinian Central Bureau of Statistics (2006).

⁷ Source: PCBS (2007). The Palestinian Central Bureau of Statistics (PCBS) and the Institute Universitaire d'Etudes du Développement (IUED), define poverty line to be \$2.7 per day, and very poor line is \$1.35 per day.

In general terms, this conservative lending policy is due to the unstable political environment and the weak legal system; as a matter of facts, it is certainly not a coincidence that the ratio of total facilities to deposits began to decrease after the mid of 2006, following the electoral victory of Hamas, the freeze of the international donations, and the consequent salary crisis. However, on top of the generic political instability, the Palestinian credit market also suffers from a number of other structural problems. Firstly, given the absence of a proper national currency, Us Dollars, Israeli Shekels, and Jordanian Dinars are used in parallel. This means not only that neither the Palestinian government nor the Palestinian monetary authority can implement any meaningful monetary policy, but also that inter-banking lending is difficult if not impossible. In addition, the large dependence of the Palestinian government on foreign aids and custom clearances revenues collected on their behalf by the Israeli government creates further uncertain and an high-risky environment which force banks to adopt a conservative lending policies. Furthermore, the dominance of foreign banks over the domestic one implies that savings collected in Palestine are often invested elsewhere.

The same problems leading to a particularly conservative approach on the part of the Palestinian banks, also explain their relative inefficacy measured in terms of spread between passive and active interest rates. *Figure 6* below shows how such difference, disaggregated by currency in which deposits are collected and loans offered, is much higher than in the countries where the same currencies are used.

Figure 6: spread between active and passive interest rates (2000 – 2009Q1)



Source: Authors' elaboration from The Palestine Monetary Authority (PMA), 2009.

If the spread vis-à-vis the US probably surprises nobody, and the one vis-à-vis Jordan is not that remarkable, on the other hand these data show how dramatic is the difference between operating in Israel and Palestine.

The declining economic conditions of vast sectors of the population, combined with limited amount of credit supply from ordinary banks (or credit supplied at very high interest rates), suggests that over the last few years the potential market for micro finance in Palestine grew. The idea that in Palestine a substantial potential for the expansion of the micro credit sector exists is also supported by results of various empirical surveys. According to a survey conducted in 2005, the number of potential clients, estimated in about 30,000 in 2005, was supposed to have increased up to 100,000 in the following 4-6 years.⁸ However a subsequent survey dating May 2007 showed how such a development had remained largely on paper, partly because of the unwillingness of small entrepreneurs to demand for funds, but also because of the inability of the credit market to respond to demand when it surfaced. Micro credit institutions, although less rigid in their attitude than ordinary banks, proved to be partially guilty as well.⁹

Data from a more recent survey (Table 2) corroborate this idea. In particular while the feeling in 2005 was of a potential rapid increase in the number of clients data show that, in fact, the number declined, while other indicators confirm a pattern of stagnation if not decline.¹⁰

⁸ Israel/Palestine Centre for Research and Information (2005).

⁹ The International Finance Corporation and The Palestinian Network for Small and Microfinance Institutions (2007).

¹⁰ These numbers represents the following seven micro finance institutions representing more than 80% of the market in terms of number of active clients, active borrowers and portfolios: ASALA, CHF/Ryada, FATEN, PARC/SLA, PDF/SLU, REEF and UNRWA/MMD.

Table 2: Development of Microfinance institutions, borrowers, and clients

	2004	2005	2006	2007	2008Q1	2008Q2	2008Q3
Net Loan Portfolio (thousands US\$)		37,738	28,540	25,086	32,771	33,697	37,577
Nbr. of branches	38	46	50	53	53	53	56
Nbr. of staff	264	340	320	315	294	332	306
Nbr. of active borrowers	16,787	24,848	22,017	18,124	15,422	19,943	22,224
<i>Male</i>	6,774	12,065	10,668	9,016	6,674	10,398	11,696
<i>Female</i>	10,013	12,783	11,350	9,108	8,748	9,545	10,528
Nbr. of active clients	20,165	28,862	26,410	23,057	22,083	25,134	27,298
<i>Male</i>	6,774	12,059	10,656	8,994	8,568	10,376	11,677
<i>Female</i>	13,391	16,803	15,755	14,063	13,515	14,758	15,621

Source: The Palestinian Network for Small and Microfinance Institutions (2008).¹¹

4. Supply: Goals and performance

On the basis of the evidence provided in the previous section it is clear that Palestine has a substantial potential for expansion of micro lending. However the impression is that such expansion might have been frustrated by relatively poor performance in credit allocation. In order to understand the extent of this problem it is worthwhile to analyse some key performance indicators provided by the same 2008 survey described above.

¹¹ Notes:

- Data for quarter one is estimated based on updated numbers for 6 MFIs and projected numbers for one MFI.
- Number of active borrowers: The numbers of individuals who currently have an outstanding loan balance with the MFI or are responsible for repaying any portion of the gross loan portfolio. This number is based on the individual borrowers rather than the number of groups.
- Number of active clients: the number of individuals who are active borrowers, depositors or both. Individuals who have multiple loans or accounts with the MFI are counted as a single client. Depositors apply only to deposits that are held by the MFI, not to those deposits held in other institutions by the MFI's clients (i.e. facilitated savings). In the Palestinian case, PARC is the only MFI among Sharakeh members that accept deposits (saving) by its member. The difference between the number of active clients and number of active borrowers is explained by PARC depositors.

The overall picture is that although some positive results can be noticed, still substantial problems persist, the main one being the decline in productivity which is indirectly reflected in the increase of the cost per individual loan (Table 3).

Table 3: Aggregate measures of performance/efficiency of the main micro credit institutions

	2005	2006	2007	2008Q2	2008Q3
# of loans per Loan Officer	125	134	121	110	120
# of loans per Staff member	73	70	58	60	72
Cost per loan in US dollar	184	338	397	381	394
Average disbursed loan size US\$	1,352	1,486	1,569	2,257	2,090
Yield on portfolio	13.5%	11.5%	11.2%	16.2%	16.7%

Source: The Palestinian Network for Small and Microfinance Institutions (2008).

Indicators of self-sustainability (Table 4) show a positive trend but, overall, they reveal a similarly disappointing picture.

Table 4: Aggregate measures of sustainability of the main micro credit institutions

	2005	2006	2007	2008Q2	2008Q3	World Average 2001
ROE (donations excl.)	-1.6	-11.2	-4.5	4.4	4.6	15.5
ROA (donations excl.)	-1.5	-10.2	-4.1	4.0	4.0	5.1
OSS (Operational self - sufficiency)	88.2	63.7	81.5	100.9	101.4	

Sources: The Palestinian Network for Small and Microfinance Institutions (2008) for Palestine; Tucker and Miles (2004) for world average 2001.

ROE, for example, despite being positive for the first time in 2008 is still very distant from what the world average was in 2001. Furthermore it is unclear how much of this result comes from improvements in the macroeconomic scenario rather than from any increase in the quality of the managerial process. On top of this, it must be noticed that results drop once donations are taken into account. In other words Palestinian micro finance institutions are still far from self-sustainability.

On the other hand, over time loans became less risky although also in this case whether or not this should be seen as the consequence of improved managerial practices remains a matter of debate. Whatever the causes, according to data presented in Table 5, the risk on the portfolio of the microfinance institutions included in the survey (and representing more than 80% of the market) dropped from 40.8% in 2006 to 12.0% in the third quarter of 2008.

Table 5: Aggregate measures of risk of the main micro credit institutions

(Par 30 international standards: 5% or below)

	2005	2006	2007	Q2 2008	Q3 2008
PAR >30 days	9.40%	40.80%	23.20%	14.80%	12.00%
PAR >180 days	3.90%	18.00%	15.60%	9.90%	7.90%
Write-off index	18.20%	5.20%	57.20%	2.90%	2.50%

Source: The Palestinian Network for Small and Microfinance Institutions (2008).

This drop, however, is far from putting Palestine in line with international standard, as about 12% of late repayment is more than double what international agencies consider as a safe indication (5% or below). This means that even in this are according to general standards performance is not high.

5. Concluding remarks

The case of Palestine is a typical example of micro credit in a conflict zone and, as such, requires caution when using concepts such as risk (and costs) and efficiency.¹² This not only because war, by definition, increases the former and reduces the latter, but also because during conflicts micro credit can also be used with wider purposes, for example as a device to reduce social desegregation, or lack of any incentive to start economic activities. When this happens the concept of efficiency cannot be measured only in narrow economic terms. This said, an agreement seems to exist in the most recent

¹² See, for example, Manalo (2003).

literature that although operating in an area of conflict changes opportunity and constraints, nonetheless issues of structural financial viability should not be abandoned. In other words, micro credit institutions can still be self-sufficient and financially viable even when embracing a wider set of objectives and operate in a particularly difficult environment.

With these considerations in mind, Palestine thus appears to be a promising market for micro finance. This not only because of its potential size and opportunities for viable businesses, but also for the possible beneficial effects of micro credit in terms of stakeholding in a country whose economic development seems to suffer from passive overdependence on external aid. However micro finance institutions are still struggling to penetrate the full extent of the market, and they still show relatively disappointing performance in terms of managing aggregate risk. Clearly the two issues are linked together, but disentangling the cause from the effect is neither conceptually nor empirically easy. While some of the determinants of high risk are exogenous, for example, when it comes to invest in the Gaza strip rather than in the West Bank, others, however, depend on managerial choices. In particular embarking into deeper “market orientation” might be capable *per se* of reducing risk, although the literature is still divided on whether more extreme “commercialisation” of micro credit is the only or even the best way forward.¹³ In the scenario of a being conflict area, this question applies to Palestine in a particularly urging way. Eventually selecting customers on the basis of market-based features and impact on risk comes at the cost of cutting-off the most vulnerable segment of the population, and this is a decision that cannot only emerge out of mere concerns for the health of balance-sheets, but must be motivated on ideological, moral and political ground too. On the other hand, maybe alternatives exist. For example, maybe pushing more energetically towards that direction and exploiting the combination of peer and religion-based pressure as enforcement mechanisms might allow to reduce aggregate risk without impacting too much on the moral component of micro credit mission.

¹³ See, in particular, Campion (2002) and Olivares-Polanco (2005).

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The Effect of the Israeli-Palestinian Conflict on Child Labour and School Attendance in West Bank

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Abstract: This paper studies the impact of the Israeli-Palestinian conflict on child labour and school attendance of Palestinian children in West Bank. We use a novel dataset obtained by matching the quarterly Palestinian Labour Force Survey with a separate dataset on children (10-14 years). We consider the period between the beginning of the Al-Aqsa Intifada (September 2000) and 2006. We find that an increase in the number of days of closure of borders imposed by Israel increases child labour while it (marginally) reduces school attendance. We also provide evidence on different possible channels through which the closure of borders could have affected children's status. Our results suggest that the conflict-induced worsening of the local labour market conditions is the most relevant channel in increasing child labour and reducing school attendance in West Bank.

Keywords: Palestine, Israel, child labour, school attendance, conflict, closure days

JEL Classification: J13, C35

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1. Introduction

The existence of child labour naturally raises a number of ethical, social and economic issues. While the dimension of the phenomenon is well known, there is still no consensus concerning its main determinants. This is not surprising considering that – as recent research indicates – child labour is a more varied, country and context-specific phenomenon than usually believed. This paper contributes to the literature on the determinants of child labour and school attendance examining the effect of a conflict on child's status.

Most of the literature on the economic impact of conflicts looks at their aggregate effects (Abadie and Gardeazabal 2003; Miguel and Roland 2006) while only recently microeconomic analysis are becoming available (see for instance Blatmann and Annan, 2010). The number of papers analysing the effect of a conflict on children is even smaller. Most of them focus on the effect of conflict on school attendance or achievement (see for instance Shemyakina, 2006; Akresh and de Walque, 2010) but they do not consider child labour.

The Palestinian Territories are a unique setting to study the microeconomic effect of a conflict given their peculiar historical and economic features. Starting from the Six-Day War in 1967, West Bank and the Gaza Strip have been occupied by Israel. Since then, periods of conflict of different intensity followed one after another. After a decade of (relative) amelioration of the economic and political situation during the 90's, the situation had dramatically worsened since the beginning of Al-Aqsa Intifada (also called second Intifada, September 2000). In response to re-surge of the conflict, Israel started increasingly imposing on Palestinians a number of mobility restrictions through different security measures: closures of borders, curfews and sieges. In particular, the military decision to impose the daily closure of borders made impossible for Palestinian workers employed in Israel to reach their workplaces.¹ Given that those represent a relevant share of Palestinian workers, closures turned out to strongly affect the whole Palestinian economy.

In this paper we analyze the effect of closures on child labour and school attendance of Palestinian children 10-14 in West Bank between the beginning of the Second Intifada and the end of 2006. There are different reasons for which the conflict may affect

¹ Closure consists of banning the movement of labour and goods between the Occupied Territories and Israel, as well as between, and within, the West Bank and the Gaza Strip.

children's status. First, closures are expected to affect children belonging to households whose father is employed in Israel: the closure of borders causes a sudden and unanticipated drop in the household earnings. According to the luxury axiom (Basu and Van, 1998) the reduction in the household income should increase child labour and reduce school attendance. But closures are also expected to affect children's status through the modification of the local labour market conditions. Repeated incidence of closure encourages returning workers to look for local jobs reducing local (and regional) market wage. From a theoretical point of view, a change in latter is predicted to have two opposite effects on child labour (and school attendance): the income and the substitution effect. It is an empirical question which of these effects prevails. The conflict situation thus implies that households – either directly or indirectly affected by the mobility restrictions – may decide to have their children working and leaving school. Obviously this would be more likely the less the household is able to cope with the worsening of the economic conditions or to smooth consumption during temporary shocks.

Our results show that the intensity of the conflict – measured by the number of closure days – increases the probability of child labour and marginally reduces school attendance. These results are robust to the inclusion of a number of controls and also to alternative econometric specifications. The magnitude of the effect is not negligible: a 10 days increase in the quarterly number of closure days increases the probability of child labour by 11%. We also provide some evidence on the possible channels through which the conflict affects child labour and school attendance. Our estimates indicate that an increase in the number of closure days decreases local market wages, household income and the probability of father being employed in Israel while it increases the number of unemployed in the household. While all of them are possible channels through which the conflict increases child labour and decreases school attendance, our results suggest that the worsening of the local labour market condition is the most relevant one.

Two are the main contributions of our paper to literature. To the best of our knowledge, this is the first paper that describes the determinants of child labour and school attendance in West Bank. In doing so, we use a unique dataset obtained by merging information from the Palestinian Labour Force Survey and separate data on 10-14 years old children, both provided by the Palestinian Central Bureau of Statistics (PCBS). As far as we know, it is also the first paper to study the effect that a conflict may have – through its impact on the local economic conditions – on child labour. Our results indeed suggest the existence of additional (probably unintended) social costs related to

the Israeli-Palestinian conflict that are not usually accounted for in evaluating the effects of this military measure implemented by the Israeli Army.

The paper is structured as follows. The next section reviews three strands of literature that are related to our paper. Section 3 presents the estimation strategy and the econometric model. Section 4 describes the dataset and the characteristics of child labour and school attendance in West Bank. Section 5 presents the estimation results and a number of robustness checks. Section 6 concludes the paper.

2. Literature

Our paper is closely related to the growing literature on the impact of negative shocks on both child labour and school attendance. Among the shocks considered in the literature there are: the decline in crop income (Jacoby and Skoufias 1997; Beegle *et al.* 2006), the job loss of the household head (Parker and Skoufias 2005; Duryea *et al.* 2007) and a variety of natural disasters (Guarcello *et al.* 2010). While the magnitudes of the estimated effects differ across studies, in general results indicate that a negative shock increases the probability of child labour and decreases school attendance. Some other papers have analyzed the impact of macroeconomic shocks and political instability on children's status (see for instance Lim 2000; Skoufias and Parker 2001). Duryea and Arends-Kuenning (2003) document that during the years of economic crisis, the substitution effect (i.e. child labour increases with the market wage) is reduced while the effect of household income on the probability of child labour and schooling does not change. Actually the exposure to a violent conflict can be considered as another type of negative shock affecting the household and the child. Most of research on the impact of conflict on children concerns how it affects school attendance or attainment.² The received empirical evidence on the effect of armed conflict on children's schooling is mixed. Some studies find that conflicts have small impacts on the outcomes of interest (for instance Chen *et al.* 2008). Others tend to find long-term negative effects of violent conflict on school attendance, school attainment and also school drop-out (inter alia Akresh and de Walque 2010, for Rwanda; Chamarbagwala and Morn 2010 for Guatemala; Leon 2009 for Peru; Shemyakina 2006 for Tajikistan; Swee 2009 for Bosnia and Herzegovia). As far as we

² The paper of Estevan and Baland (2007) provides a model that links exposure to a conflict (mortality risk) with household choice concerning schooling and child labour.

know, Rodriguez and Sanchez (2009) is the only paper that analyze the impact of the exposure to armed conflict on child labour. Using data for Colombia, they show that the conflict affects child labour by reducing (local) economic activity, life expectancies and school quality.

The Israeli-Palestinian is one of the longest and politically most relevant conflicts. Recently researchers have started analysing its impact on different dimensions of the Palestinian economy and in particular on the labour market. Indeed, the Palestinian labour market is quite peculiar: domestic unemployment and wage have, for long, strongly responded to job opportunities and wage dynamics in Israel (Angrist 1996; Kadri and MacMillen 1998).³ This is not surprising considering that by the late 1990s – under conditions of relatively open but controlled borders – more than one-fifth of the Palestinian labour force was commuting daily to Israel (Ruppert Bulmer 2003).⁴ After the beginning of the Second Intifada, closures of borders (together with a number of other measures) have been increasingly used to prevent the movement of all Palestinians – including authorized workers, between the Palestinian Territories and Israel. While closures are intended to be a security measure taken in the presence of surges, or expected surges, in the conflict, their effects turned out to be much more pervasive, affecting the whole Palestinian economy and in particular the labour market (B'Tselem 2007; OCHA 2007; PCBS 2001; United Nations 2002; World Bank 2003). Ruppert Bulmer (2003) studies of the effect of changes in the Israeli border policy on daily Palestinian labour flows to Israel, unemployment and wages. The calibrated model predicts that closures would raise total unemployment in Palestine, increasing domestic employment with decreasing wages. The latter effect is the result of the downward pressure caused by the return of workers previously employed in Israel. Aranki (2004) and Miaari and Sauer (2010) both estimated the effect of closures on the Palestinian labour market using data from the PCBS Labour Force Survey. Their results suggest that closures increase the probability of being unemployed and decrease the monthly earnings of Palestinian workers regardless of their work location (Israel or Palestinian Territories). Al Kafri (2003) finds that between 2000 and 2001 (i.e. before and after the Second Intifada began) child labour increased for male while school attendance decreased for female. However,

³ See also Farsakh (2002), Shaban (1993).

⁴ Until the late 1980s, Palestinians and Israelis could move freely between each other's territories. Israel introduced permit requirements in 1991 to control the movements of Palestinian workers. After the 1993 Oslo Accords permit controls and other mobility restrictions (i.e., temporary border closures) were started to be strictly enforced

his analysis does not include the number of closure days, the market wage and the household income as explanatory variables, nor it is able to identify the channels through which the conflict may affect children's status.

3. Estimation strategy and econometric model

We study the effect of changes in the intensity of the conflict on child labour and school attendance in West Bank (WB) exploiting the within year variation in the quarterly number of closure days. Our estimation strategy is based on the fact that the number of closure days our measure for the intensity of the conflict – is exogenous to the Palestinian labour market conditions. The next section is devoted to provide evidence on this point.

Following Duryea and Arends-Kuenning (2003), we assume that the decisions to attend school or to work cannot be considered independently. Accordingly, we use a bivariate probit model to estimate the probabilities of child labour and school attendance. Let cl_i^* and sc_i^* denote two latent variables underlying the work and schooling decisions, respectively, for child i . We represent the decision making process as follows:

$$cl_i = g_{i1}(\cdot) + u_{i1} \quad (1)$$

$$sc_i = g_{i2}(\cdot) + u_{i2} \quad (2)$$

where $[u_{i1}, u_{i2}] \approx BN(0, 0, 1, 1, \rho)$ and BN stands for the bivariate normal distribution.

The index function for child i has the form:

$$g_{il}(\cdot) = \alpha_l + district + year + \theta CD + X'_{ij}\phi \quad \text{with } l = 1, 2 \quad (3)$$

where α_l is the constant, *district* and *year* are fixed effects, respectively. *CD* is the variable which captures the intensity of the conflict: it is the quarterly number of days the borders between Israel and Palestinian Territories remained closed (closures). The

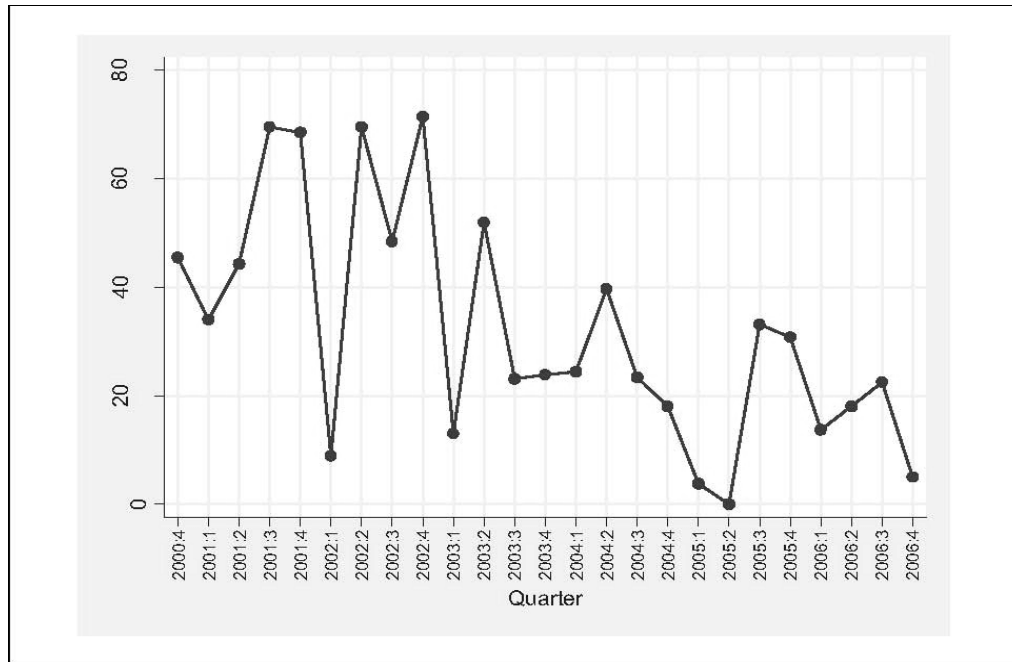
associated coefficient measures the impact of the within-year variation of the intensity of the conflict on child's status. X_{ij} is a vector of control variables that account for individual (i) and household (j) characteristics.

3.1. Number of closure days and the evolution of the labour market in West Bank

During closure days, the borders between the Palestinian Territories and Israel are closed and the movement of workers and goods between the two is forbidden. Our data on the number of closure days comes for the Ministry of Labour of the Palestinian Authority. In our analysis we use the quarterly number of effective closure days which is given by the number of comprehensive closure days in the quarter minus the number of Saturdays, half the number of Fridays⁵ and the number of days of Jewish and Muslim holidays. *Figure 1* shows the number of effective closure days imposed by Israel on the West Bank in each quarter between September 2000 and the end of 2006. Since the beginning of the Second Intifada, the number of closures days – while characterized by a long-term tendency to decrease – has fluctuated with a rather high variance during the period under consideration.

⁵ Labour and commercial flows are at about half their normal workday level on Fridays.

Figure 1: Number of closure days (quarterly) between the beginning of the Al-Aqsa Intifada and 2006, (2000:Q4-2006:Q4)

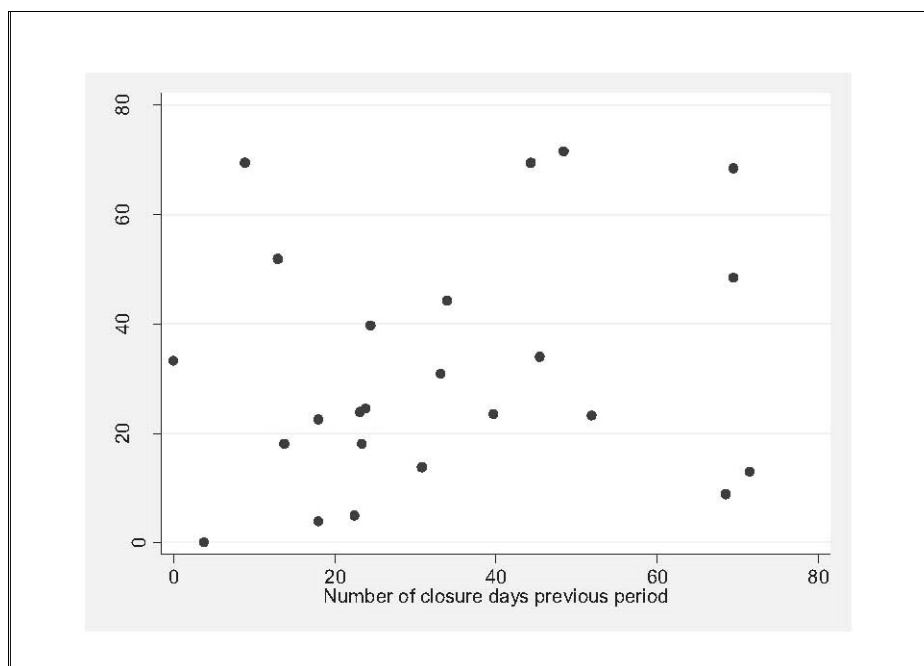


Note: Quarterly number of effective closure days.

Source: Palestinian Ministry of Labour.

In our analysis, we use the quarterly number of closure days to capture the effect of the conflict on our dependent variables (child labour and school attendance). For our estimation strategy to be valid, the number of closure days has to be exogenous with respect to the evolution of the labour market in West Bank. We now present some suggestive evidence that corroborates this hypothesis. As a first piece of evidence, we show that the number of closure days is not systematic across quarters. In *Figure 2*, we plot the number of closure days against the number of closure days in the previous quarter. The data show that the short-term change in the number of closure days is random.

Figure 2: Number of closure days (quarterly) against closure days in the previous quarter (2000:Q4-2006:Q4)



Source: Palestinian Ministry of Labour.

As an additional check, in order to exclude that the number of closure days is determined by the labour market conditions in West Bank, we regress the number of closure days in a given quarter on a set of labour market indicators referring to the previous period. The results are reported in Table 1. In regression (1) to (4) we separately regress the number of closure days on the average wage in WB, the rate of unemployment in WB, the low-skilled wage in WB and number of closures days in the previous period. In regressions (5) to (7) we progressively include all these variables. The results show that the number of closure days in a quarter is not influenced by the previous period average wage, rate of unemployment, average low skilled wage or by the number of closures in the previous quarter. In all regressions, the coefficients of these variables are not significantly different from zero.

These results confirm the view expressed in Miaari and Sauer (2010) that the decision of (temporary) closing the borders between Israel and the West Bank is not related to the evolution of Palestinian labour market or to the economic situation in the

West Bank, but it is mainly led by the military consideration by the Israeli Army. If this is the case, one may expect the number of closure days to respond to an increase in the violence between the two opponents. This implies that, for our estimation strategy to be valid, we also need to exclude the possible endogeneity between the number of closure days and the rate of school attendance. The reason is – as pointed out by Rodriguez and Sanchez (2009) – that in a context of conflict being a drop out may increase rebellion and violence in the child. Similarly, it is very likely that if being out-of school is positively correlated with the child involved in the confrontation with the Israeli Army, it would also influence the number of closure days. To check the existence of this mechanism (the number of closure days being a response to the increase in the violence by children who are not attending school), we compute the correlation between the rate of school attendance and the number of closure days, which is our proxy of the intensity of the conflict. The results (not reported) show that correlation between the number of closure days and the rate of school non-attendance is small and statistically insignificant. Based on this evidence, we thus exclude the possibility of reverse causality between the number of closure days and school attendance.

Table 1: Labour market conditions in West Bank and the number of closure days

Number of closure days	(1)	(2)	(3)	(4)	(5)	(6)	(7)
average wage in WB (previous quarter)	1.60 (1.16)				1.67 (1.23)	2.08 (1.33)	1.67 (1.47)
unemployment rate in WB (previous quarter)		0.26 (1.62)			0.41 (1.69)	0.57 (1.71)	0.41 (1.55)
average unskilled wage in WB (previous quarter)			-0.63 (0.85)			-0.92 (0.90)	-0.91 (0.93)
no.closure days (previous quarter)				-0.36 (0.21)			-0.33 (0.22)
F-test	0.028	0.026	0.006	0.003	0.074	0.022	0.016
R ²	0.52	0.49	0.51	0.56	0.52	0.55	0.61
# observations	24	24	24	24	24	24	24

Note: In all specifications the dependent variable is the quarterly number of effective closures days. Effective closure days are comprehensive closures net of Saturdays, half the number of Fridays and Jewish and Muslim holidays. OLS regression, robust standard errors in parenthesis. All regressions include a constant and year fixed effect.

4. Data

This paper uses individual level data from the quarterly Labour Force Survey carried out by the Palestinian Central Bureau of Statistics (PCBS). The survey collects quarterly data on employment and socio-economic characteristics of individual household members aged 15 years or more. Each round of the survey consists of a nationally representative sample of 7,600 households in Palestinian Territories (West Bank and Gaza Strip). We merged this dataset with separate quarterly data on 10-14 years old children, also provided by the PCBS. The present analysis is based on children between 10 and 14 years old for whom full information on schooling, work and a number of parents' characteristics is available.⁶ We consider only male children for our analysis since observations for female working children are very few. A child is considered working if he worked and was remunerated for at least one hour during the reference week of the survey or was working as an unpaid family member. We restrict the analysis to West Bank since the data on child labour in the Gaza Strip do not seem to be reliable.⁷ We consider the period between the beginning of the Second Intifada (September 2000) and 2006, which is the last year for which the survey is available.

Table 2 presents descriptive statistics for our sample. The first Column presents the characteristics of the total sample. The second and third columns present the distribution of child, parental and household characteristics for working children and non-working children respectively. The fourth and fifth Column describe the characteristics for school participants and school non-participants.

Our analysis is based on a sample of 41,789 observations. The percentage of working children is 3.6% and the school participation rate is 97.6%. The sample consists of 62% in the 10-12 years group and 38% in the 13-14 years group. The percentage of working children is higher in the older group while school participation is higher in the younger one. We observe a considerable variation in terms of parental characteristics. Father's education is the highest for children attending school. Interestingly, unemployed

⁶ The Palestinian Labour Law, effective since mid-2000, prohibits the employment of children before they reach the age of 15. The Chapter on Juvenile Labour in the Palestinian Labour Law defines boys between 15-18 years as working juveniles and accordingly allows them to work but prohibits their employment in industries hazardous to their safety or health, in night work, or on official holidays (Birzeit University Development Studies Programme and UNICEF 2004).

⁷ The figures on child labour in Gaza Strip in our dataset are quite different from the ones in the 2004 Child Labour Survey conducted by the PCBS in 2004. Results from the analysis of child labour and schooling decision for Palestinian children in the Gaza Strip are available upon request from the Authors.

father is more prevalent for children attending school than for working children. Mother's education is lower for working children than for school participants. On the contrary, the percentage of children with employed mother is notably higher among the working children as compared to children attending school. As for household characteristics, it is interesting to note that the number of male adult unemployed is lower for working children than for school participants.

The last group of descriptives gives the district and year level break down of the sample. Three districts – Hebron, Ramallah and Nablus – represent around half of the sample. The schooling in Ramallah appears more than the sample proportion and child labour in Nablus and Hebron appears less than the sample proportion. The last block of numbers shows the composition of the sample in terms of year of survey. It shows that considerable variation exists in the pool in terms of the year of survey and children's status.

Table 3 presents the distribution of the four states that are observable for a child, namely both work and school, only work, only school, and neither. The first row shows that 3% children are engaged in both work and school in West Bank. Less than 1% is involved in only working and 1.7% in neither work nor school. A difference between the 10-12 years and 13-14 years groups is that the percentage of *studying only* is higher among the younger group. The last block of the table shows the yearly pattern of these four states for children. Looking at the *studying only* column, we note that schooling has increased until 2002 to then decrease. While *working only* has remained almost constant over the period, child labour (the sum of child working only and working and studying) followed a U-shaped path over the years with an intermediate peak in 2003, and then reaching the 8.3% in 2006. The percentage of children attending school has gradually increased over time, from 96.4% in 2000 to 97.8% in 2006 but the percentage of *studying only* is lower at the end of the period than it was before the Second Intifada began.

While the percentage of child labour in WB is not large, the high variation across years suggests that some interesting mechanisms may be at work. In the following we offer an explanation of these patterns based on the effects of changes in the number of closure days imposed by Israel.

Table 2: Sample descriptive statistics

	Total Sample	Working	Non Working	School Participants	Non-School Participants
All (%)	100	3.6	96.4	97.6	2.4
Child’s characteristics (%)					
Age (%)					
10-12 years	62.2	36.1	63.1	63.0	229.2
13-14 years	37.8	63.9	36.9	37.0	70.8
Father’s characteristics (%)					
Education					
No education	3.3	5.1	3.2	3.1	9.4
1 to 4 years	6.9	9.1	6.9	6.8	14.1
5 to 8 years	33.1	34.6	33.1	32.9	43.6
9 to 12 years	37.1	34.5	37.2	37.4	24.2
More than 12 years	19.6	16.6	19.7	19.9	8.7
Employment status					
Unemployed	24.6	9.2	25.2	24.5	31.9
Self employed	39.0	64.8	38.0	38.9	41.9
Wage earner	36.4	26.1	36.8	36.7	26.1
Mother’s characteristics (%)					
Education					
No education	8.5	12.9	8.3	8.2	19.5
1 to 4 years	9.3	12.3	9.2	9.1	17.5
5 to 8 years	35.1	37.0	35.0	35.1	34.9
9 to 12 years	37.8	32.0	38.1	38.2	25.0
More than 12 years	9.2	5.8	9.4	9.4	3.1
Employment status					
Unemployed	78.0	37.3	79.5	78.0	77.9
Employed	22.0	62.7	20.5	22.0	22.1
Household’s characteristics					
Number of children: 10-14 years	2.2	2.4	2.2	2.2	2.3
Number of children: 15-17 years	0.8	0.9	0.8	0.8	0.9
Number of unemployed adults	0.4	0.2	0.4	0.4	0.5
Size	6.3	6.6	6.3	6.3	6.8
District (%)					
Jenin	9.7	12.0	9.6	9.7	7.9
Tubas	4.2	4.3	4.1	4.2	3.7
Tulkarm	6.5	7.7	6.4	6.6	3.9
Nablus	10.8	18.3	10.6	10.8	11.7
Qalqilya	5.4	5.9	5.4	5.4	4.6
Salfit	4.8	4.8	4.8	4.7	5.2
Ramallah	11.5	5.5	11.7	11.5	11.8
Jericho	3.4	2.5	3.5	3.4	4.9
Jerusalem Est	9.2	2.2	9.4	9.2	8.8
Bethlehem	9.5	1.9	9.8	9.6	7.6
Hebron	25.1	34.9	24.7	24.9	30.0

Year (%)					
2000a	4.0	5.3	4.0	4.0	6.1
2001	15.6	7.0	15.9	15.5	19.5
2002	13.4	4.1	13.7	13.4	13.1
2003	17.7	15.5	17.7	17.7	16.2
2004	16.4	11.1	16.6	16.5	14.7
2005	16.4	19.2	16.3	16.5	13.8
2006	16.5	37.9	15.7	16.5	16.6
Sample size (N)	41,789	1,501	40,288	40,806	983

Note: a Data refers only to the 4th quarter. Source: Authors' elaboration based on data from PCBS.

Table 3: Child labour and school attendance rates by age group and year

	Working and studying	Working only	Studying only	Neither	Child labour (1)+(2)	School attendance (1)+(3)
Total sample	3.0	0.6	94.7	1.7	3.6	97.6
Age (%)						
10-12 years	2.0	0.1	96.9	1.0	2.1	98.9
13-14 years	4.6	1.5	91.1	2.9	6.1	95.6
Year (%)						
2000	3.4	1.3	93.0	2.3	4.7	96.4
2001	1.0	0.6	96.0	2.4	1.6	97.1
2002	0.6	0.5	97.1	1.9	1.1	97.7
2003	2.5	0.7	95.4	1.5	3.1	97.8
2004	1.9	0.6	96.0	1.5	2.4	97.9
2005	3.6	0.6	94.4	1.4	4.2	98.0
2006	7.5	0.8	90.2	1.6	8.3	97.6

Source: Authors' elaboration based on data from PCBS.

5. Estimation results

5.1. The effect of closure days on child labour and school attendance

Table 4 reports the estimation results for the biprobit model described in Section 3. In Column 1 we estimate the effect of the number of closure days on child labour and school attendance controlling for the age of the child, the parents' education level and for district

and time fixed effects.⁸ The result shows that the number of closure days increases the probability of child labour while it seems not to affect school attendance. The effect is highly significant and its magnitude is non negligible. A 10 days increase in the quarterly number of closure days increases the probability of child labour by 11%. In Column 2 we include as additional control variable the interaction between the number of closure days and the distance of the household's place of residence from the Israeli border.⁹ We will refer to this as our preferred specification. As expected the coefficient of the interaction is negative and highly significant. The result indicates that closures increase child labour but their effect on the probability of the child working is smaller for households living further from the Israeli border. Controlling for the border-distance, the effect of the number of closure days on child labour significantly increases: a one standard deviation increase in the number of closure days in a quarter increases child labour by 33.2%. This is a very large effect considering that, for instance a one standard deviation increase in father's and mother's education decreases child labour by 8.5% and 19%, respectively.

⁸ This allows us to control for all the unobservable but constant characteristics related to the place in which the child resides and also for all the time-varying unobservable characteristics that are common to all districts.

⁹ Since the survey does not include the information about the household's village of residence, for each household we use the distance between the nearest Israeli border and district capital.

Table 4: The effect of closure days on child labour and school attendance in West Bank

	(1)		(2)	
	Child labour	School attendance	Child labour	School attendance
number closure days	0.004*** (0.001)	-0.000 (0.001)	0.006*** (0.002)	-0.002 (0.002)
number closure days × distance			-0.000* (0.000)	0.000* (0.000)
age	0.203*** (0.010)	-0.192*** (0.013)	0.203*** (0.010)	-0.192*** (0.013)
father education	-0.008** (0.004)	0.043*** (0.005)	-0.009** (0.004)	0.043*** (0.005)
mother education	-0.022*** (0.004)	0.030*** (0.004)	-0.022*** (0.004)	0.030*** (0.004)
Constant	-4.038*** (0.156)	3.701*** (0.190)	-4.084*** (0.158)	3.774*** (0.191)
Observations	41,789		41,789	
F-test	0.000		0.000	
ρ	-.479 (0.021)		-.464 (0.021)	

Note: Results from the biprobit model described by equations (1) and (2). ***, **, * stand for significant at 1%, 5% and 10% level, respectively. Weights used. Standard errors (in parenthesis) are robust. Year and district fixed effects are included in all regressions.

The last line of Table 4 reports the error correlation ρ between child labour and school attendance decision which is around -0.47 for both specifications. The negative sign indicates that the unobservable factors affect household decision about child's status in opposite direction, i.e. there is a trade off between the two outcomes. The relatively high value of the parameter indicates that in WB child labour and schooling are indeed not independent decisions.

5.1.1. Robustness checks

Table 5 reports the results of some robustness checks on the effects of the number of closure days on child labour and school attendance. In Column 1 we estimate our preferred specification (Column 2 of Table 4) including a dummy variable for the summer period to control for a possible cyclical component in the child labour supply related to school holidays. The summer variable turns out to be significant for child

labour while all other variables maintain their sign and significance. The magnitude of the effect of closures is slightly reduced but still highly significant. In Column 2, we estimate the same specification as in Column 1 but we also include the households from Jerusalem Est in our estimation sample.¹⁰ As expected, both the coefficient of the number of closure days and the interaction between distance and closures increases their significance. Finally, in regression (3) we estimate our preferred specification including a number of additional household control variables. These are the number of siblings 10-14 and 15-17 years old in the household, the ratio of female children in the household, the household size and the place of living of the household (rural, urban, or refugee camp).¹¹ The results confirm also in this case the positive and significant effect of the number of closure days on child labour. In addition, this specification shows that, even if the coefficient is only marginally significant, the number of closure days decreases the probability of school attendance. Yet the sign of the interaction term indicates that effect is reduced for household living further from the border.

We also perform a series of other robustness checks (results not reported).¹² To take into account the observation in Moulton (1990), we considered alternative ways of correcting standard errors. While in our main estimation we used robust errors, as robustness checks we clustered errors around the district market wage, district unemployment and household income. Results do not change. We also considered alternative econometric models. First, we consider the case in which work and school attendance decision are assumed to be independent. To this end we run two separated probit regressions -one for child labour and one for school attendance, in which we also included household fixed effects. This is a particularly important robustness check, since the inclusion of time, district and household fixed effects rule out a number of possible omitted variable issues. While point estimates are slightly different from the ones obtained with our model – since the probit model does not account for the trade-off between the two outcomes results confirm the significant effect of closure days in increasing child labour. Results do not change even including school attendance (child labour) as control variables in the child labour (school attendance) probit regression. Finally, we also estimated a tobit model for

¹⁰ East Jerusalem was annexed by Israel in 1967. Despite the annexation, East Jerusalem is considered an important commercial and cultural center that serves Palestinians living in the rest of the West Bank. The Palestinians living in that area have a rather peculiar status with respect to the ones in other districts in West Bank. While Palestinians living in East Jerusalem do not carry an Israeli nationality, they do not need a work permit to commute to Israel.

¹¹ Note that these variables are all likely to be exogenous to child's status.

¹² Detailed results are available upon request

the hours of child work, for the (smaller) sample for which this information is available. We find that the number of closure days increases the number of hours worked.

Table 5: The effect of closure days on child labour and school attendance in West Bank: robustness checks

	(1)		(2)		(3)	
	Child labour	School attendance	Child labour	School attendance	Child labour	School attendance
number closure days	0.004** (0.002)	-0.002 (.002)	0.004*** (0.002)	-0.002 (0.001)	0.004** (0.002)	-0.003* (0.002)
number closure days x distance	-0.000* (0.000)	0.000* (0.000)	-0.000** (0.000)	0.000* (0.000)	-0.000* (0.002)	0.000* (0.002)
age	0.204*** (0.010)	-0.192*** (0.013)	0.204*** (0.010)	-0.194*** (0.013)	0.205*** (0.002)	-0.194*** (0.002)
father education	-0.009** (0.004)	0.043*** (0.005)	-0.009** (0.004)	0.043*** (.005)	-0.011** (0.002)	0.043*** (0.002)
mother education	-0.021*** (0.004)	0.03*** (0.004)	-0.021*** (0.004)	0.032*** (0.004)	-0.023*** (0.002)	0.034*** (0.002)
summer	0.251*** (0.031)	0.053 (0.039)	0.247*** (0.031)	0.053 (0.039)	0.257*** (0.002)	0.054 (0.002)
household children gender ratio					0.015 (0.060)	-0.063 (0.069)
household no.children 10-14					0.114*** (0.017)	-0.036* (0.020)
household no.children 15-17					0.011 (0.020)	0.018 (0.023)
household size					-0.020** (0.008)	0.006 (0.009)
urbana					0.198*** (0.058)	0.092 (0.057)
rurala					0.221*** (0.056)	0.178*** (0.053)
constant	-3.999*** (0.159)	3.755*** (0.190)	-4.006*** (0.159)	3.753*** (0.190)	-4.329*** (0.175)	3.668*** (0.205)
Observations	41,789		42,934		41,789	
F-test	0.000		0.000		0.000	
P	-0.484 (0.21)		-0.482 (0.21)		-0.487 (0.21)	

Note: Results for the bipoibit model described by equations (1) and (2). ***, **, * stand for significant at 1%, 5% and 10% level, respectively. Weights used. Standard errors (in parenthesis) are robust. Year and district fixed effects are included in all regressions. (a) the reference category is refugee camp.

Although these are reduced form results and they do not indicate through which mechanism(s) closures could give rise to an increase in child labour, they are nonetheless interesting per se. They suggest that the conflict has a (probably unintended) negative effect on the Palestinian economy which should be taken into account in the analysis of the long run cost of the Israeli-Palestinian conflict.

5.2. Possible channels

There are many possible channels through which the conflict may cause an increase in child labour. Previous empirical evidence suggests that not only the child and household characteristics but also the features of the labour market may play a role in determining the level and dynamics of child labour. It follows that, if the local labour market is an important determinant of child labour, any factor that modifies the functioning of the former impact on the latter too. This is especially true for weak and fragile developing countries whose labour market is directly affected by a conflict. Our results suggest that this is indeed the case of the Palestinian Territories.

In the spirit of Kuha and Goldthorpe (2009), we seek to quantify the importance of different possible mediating channels through which closure may affect child labour and school attendance using a two stage procedure.¹³ While we are not able to empirically identify the separate effect of each channel on child's status, the idea is to compare their relative contribution in explaining the effect of closure days on child's status. At the same time, this approach in any way implies that the impact of closure days on child's status is exhausted by the effects through the channels considered here.

We run a set of (first stage) regressions of labour market and household level economic indicators on the number of closure days controlling for year and district fixed effects.¹⁴ The predicted value of each regression is then plugged into the bivariate model for child labour and school attendance (second stage regression), controlling for the

¹³ In their study of inter-generational social mobility, they examine the indirect effect of parental social status on adults social status through the channel of education. A similar approach is adopted in Rodriguez and Sanchez (2009) to study the effect of conflict in Colombia on the accumulation of human capital.

¹⁴ As a robustness check, in all first stage regressions we also included the interaction between the distance from the border and the number of closure days. In all cases, the level of significance of the number of closure days does not change. So we choose to stay with the more conservative results keeping only the number of closure days in the first stage.

variables included in the full specification (i.e. Column 3, Table 5).¹⁵ This approach allows for the possibility of different channels being simultaneous at work. The magnitude of second stage coefficient thus only gives an indication of the relative impact of different channels.

We begin our analysis considering the effect the number of closure days on four aggregate level labour market indicators: the average market wage and unemployment rate in WB and the average (low-skilled) wage and unemployment rate at the district level. Results reported in Table 6 show that the number of closure days has a significant effect only on the (low-skilled) district average market wage (lower panel of Column 3, Table 6). The latter is a measure of the tightness of the labour market and a proxy for the child's opportunity cost of not working.¹⁶

The first stage coefficient thus captures the effect of the conflict on the local labour market: the average low-skilled wage decreases with the number of closure days. From a theoretical point of view, a change in local average market wage is predicted to have two opposite effects on child labour (and school attendance): the income and the substitution effect. The former prevails when a lower market wage increases child labour. This is the case when the child works for reaching a given level of consumption. On the contrary, the substitution – or own price effect – prevails when an increase in the market wage – the opportunity cost of not working – induces the child to work more. As shown in the upper panel of Table 6, the lower the (low-skilled) district average market wage the higher the probability of child labour. The result clearly indicates that in West Bank the income effect prevails, with children working as a response to a worsening of the economic conditions induced by the conflict. In addition, closures also marginally reduce school attendance.

Next we consider four household-level channels through which a change in the intensity of the conflict may have an impact on child labour and school attendance.

¹⁵ The predicted value from the first stage regression is a measure of the explained component of the second stage regressor due to variation in the number of closure days. The predicted value is correlated with the number of closure days but not with the unexplained component of children's time allocation choice. Hence the effect on children's status can be thought as due to changes in the second stage regressor induced by the variation in the number of closure days.

¹⁶ To measure the child's opportunity cost of not working, the obvious candidate would be the average child wage at the district level. This was not possible due to the extremely low number of observations on child wage in our dataset. Instead we use the average wage of private sector workers with less than 7 years of education. Note that the average father's years of education in our sample are 10. Wages are in constant 1996 New Israeli Shekels (NIS), obtained by deflating nominal wages by the Consumer Price Index in West Bank provided by the PCBS.

Results are reported in Table 7. Column 1 shows that the number of closure days reduces household income, and that the latter in turn is negatively correlated with child labour. We also find (Column 2) that the number of closure days increases the number of male unemployed in the household. In conjunction with the result (Column 3) that the closure days reduces the probability of the father being employed in Israel, this is convincing evidence that the closure have drastically modified the conditions of the Palestinian domestic labour market. Results in the upper panel of the Table show that child labour indeed increases in response to an increase in the unemployment at the household level and to a reduction in the probability of the father being employed in Israel induced by the closures of borders between Israel and the WB.¹⁷ The last column shows that while the father being self employed is indeed highly correlated with the probability of child labour (Edmonds 2008), this relationship is not influenced by the number of closure days.

Among all the channels considered, we find that the strongest is the change in the local labour market condition: a 10 day increase in the number of closure days in a quarter induces a reduction in the local market wage that increases child labour by 9.6%.

5.2.1. Discussion of the results

Our results show that the number of closures days may affect child’s status through different channels. But it is also possible that the same channel may impact households differently. For instance, closures are expected to have a stronger effect on households having the father employed in Israel since their income suffer a sudden drop due to the closure of borders. To test the existence of this difference, we first estimate our preferred specification separately for the households with the father employed in Israel and for the ones with the father employed in West Bank. Results (not reported) show that for both samples closures increase child labour but the effect is much larger for households with the father employed in Israel.¹⁸ Then, to test if the household income channel affects in a different way the households depending on where (Israel/West Bank) the father works, we run the second stage in Column 1 in Table 7 separately for the two samples. Results (not reported) show that effects of closure days on household income is significant only for the former.

¹⁷ Note that the average wage of workers employed in Israel is higher than the domestic wage in West Bank.

¹⁸ Note that this larger effect is not due to a selection bias since the average income of households with the father employed in Israel is higher than the average income of households with the father employed in West Bank.

Confirming previous research, our results also suggest that child labour is affected by changes in the opportunities provided by the local labour market (see for instance Manacorda and Rosati 2007; Edmonds *et al.* 2009). Empirical evidence from developing countries suggests the substitution effect to dominate the income effect (Wahba 2006; Kruger 2007). On the contrary, our results show that in the case of West Bank the income effect prevails and the worsening of the economic condition increases child labour. This latter result indicates that indeed the effect of closure is not restricted to households whose father is employed in Israel. On the contrary closures affect children's time allocation decision by modifying the functioning of the West Bank economy as a whole. Interestingly this result is in line with the model presented in Epstein and Kahana (2008). The model predicts that, in a Basu-Van setting, the emigration of fathers – inducing an increase in the domestic local wage – is able to move the economy from an equilibrium with child labour to an equilibrium without it. Our results indicate that in West Bank the reverse situation takes place: the return of fathers – caused by the closure of borders – increases child labour in the economy. The result about the effect of closures on the district market wage is in line with this interpretation.

Finally our results highlight that child labour and school attendance decisions are interdependent but they may be affected by the conflict in different ways. For instance, while school attendance appears to be only marginally influenced by the number of closure days we cannot exclude that other military measures may have a large impact on human capital accumulation in WB as well. We also speculate that an analysis of the determinants of school attendance would probably require additional information on the quality of education, the accessibility or the cost of education, etc. Further analysis and data collection is needed on this important aspect.

**Table 6: Two stage biprobit regression results (1)
Regional and district level variables**

variable	(1)		(2)		(3)		(4)	
	Child Labour	School attendance	Child Labour	School attendance	Child Labour	School attendance	Child Labour	School attendance
average wage in WB	-0.193*** (0.075)	0.112 (0.072)						
average unemployment in WB			-0.595*** (0.215)	0.346 (0.222)				
average district (low-skilled) wage					-0.036*** (0.012)	.021* (0.012)		
average district unemployment							-0.492** (0.190)	0.286* (0.171)
#	41,769		41,769		41,769		41,769	
<i>F</i> - test	0.000		0.000		0.000		0.000	
Wald test	<i>Chi2</i> (56) = 2581.48		<i>Chi2</i> (56) = 2397.80		<i>Chi2</i> (56) = 2525.76		<i>Chi2</i> (56) = 2962.52	
ρ	-0.535 (0.019)		-0.535 (0.019)		-0.535 (0.017)		-0.535 (0.018)	
First Stage								
no.closure days	-0.021 (0.031)		-0.007 (0.038)		-.109** (.048)		-0.008 (0.031)	
#	25		25		264		275	
<i>F</i> - test	0.000		0.000		0.000		0.000	
<i>R</i> ²	0.77		0.71		0.46		0.51	

Note: ***, **, * stand for significant at 1%, 5% and 10% level, respectively. The first stage weighted OLS regression for (1) and (2) includes a constant and year fixed effects. The first stage for (3) and (4) includes a constant, year and district fixed effects. Robust standard errors are in parenthesis. The second stage biprobit model (see equations 1, 2 and 3) includes all the controls in column (3) Table 5. Bootstrap standard errors (200 replications) in parenthesis.

Table 7: Two stage biprobit regression results (2)
Household level variables

variable	(1)		(2)		(3)		(4)	
	Child Labour	School attendance	Child Labour	School attendance	Child Labour	School attendance	Child Labour	School attendance
household income ^a	-0.004** (0.002)	0.001 (0.002)						
household level unemployment ^b			21.282*** (7.921)	-12.370* (7.056)				
father works in Israel					-7.206*** (2.497)	4.189 (2.663)		
father self-employed							-129.203** (49.947)	75.100 (47.199)
#	18,697		41,769		41,769		41,769	
<i>F</i> - <i>t</i> est	0.000		0.000		0.000		0.000	
Wald test	<i>Chi</i> 2(56) = 1018.02		<i>Chi</i> 2(56) = 2622.57		<i>Chi</i> 2(56) = 2471.62		<i>Chi</i> 2(56) = 2880.32	
<i>p</i>	-0.512 (0.036)		-0.535 (0.020)		-0.535 (0.017)		-0.535 (0.020)	
First Stage								
no.closure days	-1.222** (0.572)		0.000*** (0.000)		-0.001*** (0.000)		-0.000 (0.000)	
#	28,271		41,769		41,769		41,769	
<i>F</i> - <i>t</i> est	0.000		0.000		0.000		0.000	
<i>R</i> ²	0.04		0.03		0.03		0.02	

Note: ***, **, * stand for significant at 1%, 5% and 10% level, respectively. The first stage weighted OLS regression includes a constant, time and district fixed effects. Robust standard errors in parenthesis. The second stage biprobit model (see equations 1, 2 and 3) includes all the controls in column (3) Table 5. Bootstrap standard errors (200 replications) in parenthesis. a Household income is household wage income net of child wage income. b Number of adult male unemployed in the household

6. Concluding remarks

In this paper we analyzed the effect of the Israeli-Palestinian conflict on child labour and school attendance of Palestinian children (10-14 years) in the West Bank between the beginning of the Second Intifada and the end of 2006.

Our main result is that an increase in the number of closure days increases the probability of child labour and (weakly) reduces school attendance. We also considered some possible regional, district and household level channels through which the conflict may have affected children's status. The evidence suggests that the increase in the number of closure days reduces households' income and the probability for the father to be employed in Israel while it increases the number of unemployed in the household. All these outcomes are in turn positively correlated with the probability of child labour. We also have documented that the negative effect of closures on children's status is not limited – as one may expect – to households with the father being employed in Israel. Indeed, our analysis indicates that the worsening of the local labour market conditions induced by the closures of borders tends to increase child labour and reduce school attendance independently from the household's characteristics. When choosing which security measure to implement, one should take into consideration all its (intended and unintended) effects if the social costs of the conflict have to be minimized.

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Assessing the Causes of Inequality in Health Care Delivery System in Palestine

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Abstract: Income-related inequalities and horizontal inequities in health care utilisation have recently been widely studied using *linear additive models of decomposition*. This paper applies new methods of decomposition “by factors”, based on *microsimulation technique*. Besides avoiding the “unavoidable price” of linearity restriction that is imposed by the “standard” method, the *microsimulation-based decomposition* enables to duck the potentially contentious role of heterogeneity in *genuine individuals’ behaviour* in the analysis of inequality, as well as the institutional features and practices driving inequity. The decomposition method is applied to *two-stage utilisation* (the probability of usage and the conditional usage – using the combined *Logit-zero truncated Negbin models*) for three levels of health care delivery: primary, secondary and tertiary, particular to the specific context of the two occupied territories of Palestine (OPT): the West Bank (WB) and Gaza Strip (GS). The data are taken from the first national survey on health care use and expenditure, which provide detailed information about utilisation and morbidity. Our empirical results suggest that the worse-off *do* have disproportionately greater need for all levels of care, but with the expectation of primary-level, access to – and utilisation of – all levels of care appear to be significantly higher for the better-off. The *incremental* examination through microsimulation has made it possible to separately identify the relative contributions of factors driving such pro-rich patterns. While much of this inequity appear to be caused by omnipresent socio-economic inequalities (by income), detailed analysis attributes a non-trivial part (*circa* 30% of the observed *horizontal inequities*) to *heterogeneity in behaviour* with respect to the rank of individuals in the income distribution.

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The latter finding, which cannot be explicitly envisaged by the *standard* decomposition, corroborates earlier evidence on the importance of considering such axis in order to provide a more convincing decomposition, and for judging equity performance of health system. Several *policy-relevant factors*, which have to be taken into account for any future attempt aiming at limiting the existing inequalities in the current health care delivery systems of the OPT are discussed and identified.

Keywords: Health care utilisation; Two-part models; Microsimulation; Concentration index; Horizontal equity; Bootstrap Methods; Developing countries; occupied Palestinian territory.

1. Introduction

Although huge literature has been accumulating over the last two decades to assess inequalities in access to – and utilisation of – health care services in the context of developed countries (Wagstaff, Van Doorslaer *et al.* 1991; van Doorslaer, Wagstaff *et al.* 1992; van Doorslaer, Wagstaff *et al.* 2000; Waters 2000; Wagstaff, van Doorslaer *et al.* 2003; van Doorslaer and Masseria 2004; Wilkinson and Pickett 2006), little efforts were devoted to assess inequalities in health care delivery in the context of developing countries. In addition, the very few studies (e.g., Baker and Gaag 1993; Pannarunthai and Mills 1997; Cissé, Luchini *et al.* 2007) that attempted to incorporate this endeavour have resorted to a “classical” approach that serves, at its best, to provide aggregate “descriptive” results on the degree of inequalities prevailing in a given distribution, with no attempts being made to unveil the latent factors that may possibly contribute to these inequalities. Furthermore, while the available literature offers a variety of tools and methods for assessing inequalities in health care delivery (e.g., van Doorslaer, Wagstaff *et al.* 1992; Wagstaff and van Doorslaer 2000b; Waters 2000; Gravelle 2003; Huber 2006; van Doorslaer, Masseria *et al.* 2006), the variability of available approaches, the inconsistency of presented results, and the controversial policy debates characterising this field of research, all call for more attention to identifying and endorsing the appropriate approach for studying inequalities in health care delivery.

Undeniably, the variability in the approaches used may be due, in large part, to the diverse dimensions chosen to appraise inequalities, the specific indicators used to apprehend these dimensions, and the different theories of “distributive and social justice” underpinning the adopted approach (Gauthier 1983; Mooney 1987; Le Grand 1991; Culyer and Wagstaff 1993; Gerdtham, Johannesson *et al.* 1999; Macinko and Starfield 2002). Indeed, considerable disagreement exists among economists (cf. Wagstaff and van Doorslaer 2000a, for a review) on how inequalities in health care utilisation can be identified, measured and valued, something which resulted in an ample amount of theoretical and empirical literature – originated for most part from developed countries – however, with few consistent findings. These findings suggest possible pathways by which inequality in health care use might be generated and perpetuated (Macinko and Starfield 2002). The extent of inequalities in access to – and utilisation of – health care services has shown to differ according to the measurement of need (e.g., subjective self-reported vs. objective indicators of ill-health), the types of health care services (e.g., medical specialists vs. general practitioners), and due to the inclusion or not of potential

confounding factors related to demographic and socioeconomic characteristics of users (Gakidou, Murray *et al.* 2000; Shi and Starfield 2000; van Doorslaer, Wagstaff *et al.* 2000; van Doorslaer, Masseria *et al.* 2006). Yet, in spite of such divergence, recent empirical studies conducted in the context of developed countries continue to demonstrate persisting inequalities in health care delivery (van Doorslaer, Koolman *et al.* 2004). Moreover, such inequalities have been recorded in several European countries, where the majority of health care services are channelled on the basis of some “egalitarian” principles that entail health services allocation based on needs rather than abilities-to-pay (van Doorslaer and Wagstaff 1993). This finding was frequently attributed to some contextual characteristics and systemic features (Navarro 1999; Gravelle and Sutton 2001; van Doorslaer and Masseria 2004).

It is, on the other hand, true that even if all obstacles (financial and non-financial) to access health care were completely removed, there would be no guarantee for inequalities in health and health care use to be completely removed; i.e., achieving perfectly equal distribution of health care (Bole and Bondeson 1991; McIntyre and Mooney 2007). This is because another reason behind the omnipresent inequalities can be related to alternate individual behaviour vis-à-vis health and health care that might result from disparate genuine preferences and choices (Le Grand 1987). Therefore, defining and operationalising the notion of Horizontal Equity (**HE**), i.e., equal treatment for equals,¹ without taking into account potential confounding factors related to the individual’s own characteristics would result in inconsistent findings (Gravelle 2003; Schokkaert and van de Voorde 2004). Indeed, those individual characteristics are known to influence the preferences of individuals, and hence, are reflected in their behaviour in demanding health care; over and above the additional role played by the intrinsic characteristic of the health care system in influencing individual demand. Consequently, observed behaviours can be the direct result of genuine individual preferences rather than an inequality feature embedded in the system. The latter two factors as related to the demand and supply sides of the health care market were usually not taken into account in the current literature on assessing horizontal inequity in health care demand.

Ideally, one would like to study equity in health care use by taking into account individual preferences that are explained by utilitarian economic theory (Stiglitz 1982), or through placing the full empirical analyse in the context of a social welfare maximisation

¹ In this context “equals” is defined in terms of “need” exactly, prompting the elaboration of the distinction between *equality* and *equity*.

models (Gravelle, Morris *et al.* 2006), however, without opposing distributional egalitarian objectives (Culyer 1980; Kaplow and Shavell 2002). The equity literature contains, at least on the face of it, some useful pointers in this respect (Culyer, van Doorslaer *et al.* 1992; Wagstaff and van Doorslaer 2000a). One explanation commonly put forward is that, unlike efficiency, equity is a value-laden concept, and therefore, not easily amenable to positive economic analysis (Le Grand 1984; Le Grand 1987). In effect, the difficulty of drawing an explicit link between positive analysis of the distribution of health care and equity as a normative objective has frequently been translated into a conceptual and measurement system for Horizontal Inequity (**HI**), whereby individual preferences are assumed not to influence the use of health care. As stated by Culyer (1980): “[...] the source of value for making judgment about equity lies outside, or is extrinsic to, preferences” [p. 71]. Accordingly, equity in health care delivery is interpreted independently of individual utility and refers distinctly to “normative principles” of “what ought to be”: health care ought to be allocated according to need, and “what an individual ought to have as of right”: equal access to health care for a given health status. This implies that an equitable health care distribution is the one that would reflect exactly the health care needs across different groups of population (Wagstaff and van Doorslaer 2000a). The latter, so conceived, should serve towards reducing inequalities of health, though irrespective of individuals’ preferences vis-à-vis health and/or health care consumption (Mooney 1987; McIntyre and Mooney 2007).

The methods developed by ECuity group (cf. e.g., van Doorslaer, Wagstaff *et al.* 1992; van Doorslaer, Wagstaff *et al.* 2000; Wagstaff, van Doorslaer *et al.* 2003; van Doorslaer and Masseria 2004), and later extensively used in inequality literature (e.g., Hosseinpoor, Doorslaer *et al.* 2006; van Doorslaer, Clarke *et al.* 2006; Lu, Leung *et al.* 2007), are based on the concept of Concentration Curve (**CC**) and the associated Concentration Index (**CI**). The proposed index of inequality is thus the one that measures inequality in the distribution of health variable relative to individual incomes – a measure of socio-economic status (SES). This index has appropriate properties and can be decomposed in a linear way (Clarke, Gerdtham *et al.* 2003; Koolman and van Doorslaer 2004). Two aggregate (summary) measures of **HI** are proposed: the **HI_{WVP}** index (Wagstaff, Van Doorslaer *et al.* 1991) and the **HI_{WV}** index (Wagstaff and van Doorslaer 2000b), which utilise similar conceptual foundation (standardisation through regression technique), however, with the latter index being advocated on the grounds that the use of direct standardisation, upon which the former is constructed, requires the use of grouped data, which loses precision if individual data have to be grouped. More recently, an

elaborated decomposition method was advanced to disentangle inequality of health, as captured by the **CI**, using a linear arrangement of factor components (Wagstaff, van Doorslaer *et al.* 2003). The proposed decomposition allows **HI** to be both measured and explained in a convenient way. The method involves disentangling the overall inequality into a set of **CI**'s that can be associated with a selected number of explanatory variables. The above is approximated through an explanatory model specified as a single-linear equation model that is estimated using a standard OLS regression technique. The procedure culminates in a decomposition of observed inequality into two main components, reflecting the part of inequality attributed to differences in need for health care, and hence, deemed “justifiable”, and the part due to ‘other’ non-need characteristics (or policy-relevant variables), and hence, deemed “unjustifiable.

Although more illuminating than the aggregate (summary) measures; e.g., **HI_{WV}**, the decomposition method – as currently employed – may reveal incomplete and suffer from several limitations. Firstly, the linear character of decomposition is far from being consistent with the peculiar nature of health care use data, commonly in the form of number of visits (integer or discrete variable with skewed distribution – both implies intrinsically the use of non-linear models. Indeed, it has been shown (van Doorslaer, Koolman *et al.* 2004) that while it is practically feasible to use non-linear specifications, the nature of proposed decomposition necessitates a re-linearisation of the model through approximation, which, in turn, introduce a bias due to approximation errors. Secondly, complication may also arise because of the single-equation model upon which the proposed decomposition is advanced. The probability and count interpretations of data on health care use may better be specified by a model of two-equation (e.g. a TPM). Indeed, while the latter specification is shown (Green 2000; Jones 2000) to be more appropriate and enables estimating the total (unconditional) amount of use within a single-model, the above decomposition can only be performed in terms of single-equation of the model; i.e., by decomposing separately the probability of use (estimated by probit or logit), the conditional use (estimated by OLS or GLM) and the unconditional amount of use (estimated by zero-inflated or generalized negbin models). Such a practice may raise serious concerns about the robustness of the decomposable results. Given the variant modelling used in each step of analysis and the re-linearisation imposed for each of which, there would be no guarantee of the coherence of the results, nor would it be possible to ensure that the fraction of inequity due to a certain factor can be partitioned into a part due to participation behaviours and another due to conditional consumption behaviours (Huber 2006). Thirdly, the proposed decomposition involves estimates over

the entire population, calling for potential “masking effect”, where the behaviour of some classes of the population would cover that of others; i.e., resulting in aggregate results that might not reflect the reality associated with certain sub-groups. In effect, the decomposition of inequality into its justifiable and unjustifiable parts is interpreted in terms of average behaviour; i.e., the use-need mean relation as observed over the entire sample. The inter-personal variations in use are thus assumed to derive solely from variations in its (non-need) determinants, where the model implicitly presumes, given (non-need) estimates, the amount of care that ought to be allocated on average for that need; provided that average behaviour being regarded as if it was a norm (van Doorslaer, Clarke *et al.* 2006).

An appealing method of decomposition is the one based on microsimulation technique (e.g., Harding 1996; Gupta and Kapur 2000; Dormont, Grignonc *et al.* 2006; Huber 2006). While it offers a way out to overcome the above shortcomings of the standard methods, such approach proves to provide several conceptual and practical advantages over the commonly used ECuity group methods. First, it allows (the unconditional) use of an appropriate regression model specification of health care utilisation. Therefore, it avoids the linearity restriction or the “inevitable price... for the linear approximations” (O’Donnell, van Doorslaer *et al.* 2007) that is imposed by the standard decomposition method. In fact, the latter was essentially developed for a single-linear additive model (Wagstaff, van Doorslaer *et al.* 2003), which is not directly amenable to an analysis of health care utilisation. However, despite being conceptually unsatisfactory, linear specification based on OLS technique was advocated (van Doorslaer and Masseria 2004), and implemented (e.g., van Doorslaer, Clarke *et al.* 2006; Lu, Leung *et al.* 2007) for the measurement of inequality in health care utilisation, on the grounds that these measures are not, particularly, sensitive to linear OLS specifications. Otherwise, linear approximations to the non-linear models, using the “marginal effects evaluated at the means”, was proposed (van Doorslaer, Koolman *et al.* 2004) as a way to deal with the inherent non-linearity problem in health care utilisation. Though this solution has the advantage of using appropriate specifications (such as TPM combining a logit and a truncated negbin) the proposed decomposition, which remains only an “approximation”, with a bias due to approximation error, was computed separately for each single equation of the model – i.e., by decomposing separately the **CI** of participation, conditional consumption, and the unconditional consumption. By contrast, the microsimulation technique applied in the present study, while allowing the use of TPM specifications, the relative importance of each explanatory factors as per

participation and conditional consumption are disentangled within a single-model explaining the total consumption of health care. It, therefore, avoids the limitation to “single-equation” decomposition. Besides convenience, the advantage of this is that it enables to identify the contribution of each explanatory factor to the overall inequality in utilisation, while ensuring that the fraction of inequality due to a certain factor can be partitioned into a part due to participation behaviour and a part due to conditional consumption behaviour.

Secondly, the microsimulation-based decomposition allows for estimating separately a model of health care utilisation for each socio-economic status (SES) groups (e.g., income quintile). As result, it enables for a more transparent and convincing decomposition, whereby the relative contributions of heterogeneity in behaviours – as captured by differences in parameters across SES groups – to the observed inequality are revealed. Indeed, differentials in behaviour by income quintiles was early shown (Oaxaca 1973) to be of inherent interest, as they enable to duck the potentially contentious role of genuine individuals’ preferences, which may indeed be related to the rank of individuals in the income distribution. In fact, while the measurement of **HI** in health care utilisation was essentially examined and statistically tested by comparing the behaviours of SES groups – i.e., differences in the regression coefficients (cf. van Doorslaer, Wagstaff *et al.* 1993), such a feature was absent in the standard decomposition method where the explanatory model was only estimated for the entire sample population, and thus, individuals’ preferences were neglected. By contrast, the adapted microsimulation-based horizontal inequity (**HI**) index presented here depends on both the distribution of variables (z_k) by income and the heterogeneity in parameters (β_k) with respect to income (or SES). This method provides, therefore, a way of detecting patients’ preferences as well as providers’ behaviour, which is not possible with the standard decomposition.

While microsimulation method has been recently deployed and successfully applied for the decomposition of health expenditure growth (e.g., Dormont, Grignonc *et al.* 2006), they have hitherto not been used to fully disentangle the sources of inequality in the health care delivery. To our knowledge, only one similar study (Huber 2006) has been done earlier to examine inequalities in the context of French health care system. This essay attempts, therefore, to apply the above methodological advances and to illustrate how these developments can significantly help clarifying debates about health care policies in the context of developing countries, using the particular case of the Occupied Palestinian Territory (OPT). First, we use data from a recent household health use and expenditure survey (the HCEU-2004). The survey, which was carried out by the

Palestinian Central Bureau of Statistics (PCBS), covered a national representative sample of Palestinian households residing in the West Bank (WB) and Gaza Strip (GS), and provide detailed information on households' incomes and expenditures, individuals' health care seeking behaviours and morbidity patterns, insurance coverage, and other relevant socioeconomic characteristics. Consequently, the survey offers a unique opportunity to assess, for the first time, inequity features of health care delivery system proper to the OPT. Second, we present separately disaggregated results for three levels of health care: primary, secondary and tertiary care. This allows us to examine whether patterns of inequality differ across the levels of health care. Finally, we perform statistical inference based on bootstrapping (BTS) methods. The latter provides the statistical basis for testing for inequality dominance between concentration curves in order to reduce the risk of biased interpretations due to sample structures.

The report is organised as follows: Section 2 reviews the main institutional and contextual features of health care delivery in the OPT, which are of relevance to understand the functioning and the characteristics of the specific health care system under consideration. Section 3 sets out the methods used to measure and decompose inequality. This is followed by describing the data requirements, the variables used, in addition to the model choice and estimation procedures (Section 4). Section 5 presents the results of the analysis. The penultimate section discusses the results and the value-added of methodological developments, as well as study limitations (Section 6). We end with conclusions and policy recommendations in the last section (Section 7).

2. The Palestinian health care system: geopolitical context and organisation

2.1. Structure and Distribution

Four health care providers are currently responsible for the provision of health services for the population residing in the OPT: the public sector (the Palestinian MoH), the UNRWA, a group of Palestinian not-for-profit organisations (PNGOs), and a rapidly developing private for-profit sector (PNA-MoH 2008). Despite the variable nature of the four health care providers, a certain degree of “complementarity” has been identified (Hamdan, Defever *et al.* 2003). For instance, following the political predicament and economic hardships resulting from military closures, bantustanisation, and

impoverishment, there have been substantial patient transfers from one provider to another (Mataria, Khatib *et al.* 2009). As elsewhere, health care provision in the OPT follows a pyramidal structure, with primary care at the bottom level, secondary and tertiary care at the middle and top levels, respectively. Each of the four providers operates its own facilities at almost all the three levels. Primary-level represents the first level of contact for the individuals, family and community with the health care system (WHO/UNICEF 1978), and refers to basic health care that is provided by physicians (general practitioners – GP) trained in family practice, internal medicines, or pediatrics, or by nonphysicians such as nurses. Secondary-level refers to care provided by speciality providers (e.g., urologists and cardiologists) who generally do not have the first contact with patients. These providers usually see patients after referral from a primary or community health professional. Tertiary-level refers to care provided by highly specialised providers (e.g., neurologists, cardiac surgeons, and intensive care units) in facilities equipped for special investigation and treatment (Schoenbaum, Afifi *et al.* 2005).

The Primary health care (PHC) was considered as the backbone of the Palestinian health care sector, and a strategy towards the achievement of affordable and accessible health care for the entire population (NHP 1994; NSHP 1999b). In the context of the OPT, PHC services comprise public health activities,² reproductive health and front-line diagnosis and treatment. These are provided by a pool of PHC centers and a number of sole and group medical clinics (MOH-MHIS 2002). Following the establishment of the Palestinian MoH, the number of PHC centers in the OPT has increased from 454 in 1994 to 654 in 2005 (+44.1%). Today, the OPT count about 1.9 PHC center per 10,000 individuals (MOH-MHIS 2002). Table 2.1 summarises the distribution of PHC centers between the WB and GS, as stratified by the type of provider. On the other hand, secondary and tertiary care services are provided through a limited number of general and specialised hospitals, mainly, located in the urban areas. There is clear shortage in tertiary health care services, with those available being concentrated in inaccessible Jerusalem areas, due to Israeli restrictions prohibiting Palestinian from accessing the holy city (HPU 2008b). Hospitals distribution by region and type of provider are also summarised in Table 2.1. Beside these three levels of health care provision, a number of general and specialised medical and paramedical practices, pharmacies, and diagnostic units – e.g., medical laboratories, radiology and imaging centers – are also available and distributed

² Immunisation, childcare and health education are mainly provided by the MoH and UNRWA free of charge.

across the WB and GS. The role played by each of the four health care providers is summarised below.

Table 2.1: Distribution of Health Care Services by Regions and Providers, 2005

	MoH		UNRWA		NGOs		Private		
	WB	GS	WB	GS	WB	GS	WB	GS	Total
Primary Care Centers*	360	56	35	18	130	55	--	--	654
Secondary and Tertiary Hospitals**	12	10	1	0	20	10	21	2	76
Hospital beds per provider**	1,316	1,499	63	0	1,196	485	432	34	5,025
Market share based on number of visits***	46.1%		19.7%		12.8%		21.4%		100%
Rate of utilisation as percentage of total patients ****	47.0%		24.6%		11.7%		16.7%		100%

*Ministry of Health. Health Status in Palestine, 2005 Annual report, Palestine, October 2006 (p.14)

** Ministry of Health. Health Status in Palestine, 2005 Annual report, Palestine, October 2006 (p.34, 38)

*** PCBS. Health Care Providers and Beneficiaries Survey-2005, Main Findings, June 2006 (p.57)

**** World Bank, BCRD. The Role and Performance of Palestinian NGOs in Health, Education & Agriculture, December 2006 (p.46)

-- Reliable data about the private for-profit sector is lacking, however, it is estimated that there are about 370 self-employed GP clinics in the WB, and about 80 in the GS (MOH 1999)

2.1.1. The Public Sector

The public sector comprises the MoH and the Military Medical Services (a network of basic health services reserved for employees of the Palestinian security services) (Hamdan, Defever *et al.* 2003). Currently, the MoH is the main provider of health care for the Palestinian population in the WB and GS (MOH-MHIS 2002). It owns and manages the majority of PHC centers, with a total of 416 centers, representing about 63.6% of all PHC centers scattered all over the WB and GS (Tables 2.1). In 2004, about 46.1% of total health care visits took place at Ministry of Health facilities, 21.4% in the private for-profit

sector, with the remaining 32.5% shared between UNRWA and non-governmental organisations (PNGOs) in a ratio of 60:40, respectively (PCBS 2006). Lately, the share of the MoH in overall service delivery has risen significantly, mainly due to the extension of GHI coverage after the outbreak of the second Intifada (end 2000), and the accompanying massive impoverishment of the population (HPU 2008a).

Of the 76 hospitals in the OPT (1.3 beds per 1000 capita: 1.2 in the WB and 1.4 in GS), the MoH operates 22 hospitals with a total of 2,815 beds, representing 56.03% of total hospital beds. Most of MoH hospitals are over-utilised, with average occupancy rate of 80%. Consequently, the MoH hospitals frequently have to reject cases due to the “full occupancy” (Mataria, Khatib *et al.* 2009). The average number of patients admitted to hospitals per year is estimated by 11% of the total population and this is a high percentage for a young population of which the percentage of the population over 65 years old is around 3% (PCBS 2006). The high rate of admissions to hospitals and short length of stay may indicate either unnecessary admissions or early discharge (Mataria, Khatib *et al.* 2009). It is important to indicate that the MoH does not operate any health services in the Palestinian East Jerusalem, contrary to other health care providers, since Israel considers it as part of its State, taking control of health care in that area. On the other hand, the MoH is outsourcing specific tertiary health care and advanced diagnostic services with local and overseas providers. The total number of referred cases for hospitalisation (57.5% of the cases) and consultation (42.5% of the cases) amounted up to 10,764 cases in 2001 (MOH-MHIS 2002). Patients are mainly referred to other local providers, including PNGOs and the private sector (61.6% of the cases), and to Egypt, Jordan and Israel with 17.6%, 12.3% and 8.5% of the cases, respectively (MOH-MHIS 2002).

2.1.2. The United Nations Relief and Works Agency (UNRWA)

UNRWA provides a variety of social services of education, health care, and social relief and support to registered Palestinian refugees in the WB and GS (including East Jerusalem), as well as, in the neighbouring Arab countries (UNRWA 1995). The existence of the organisation depends on reaching a solution to the Palestinian refugees’ problem. Today, UNRWA counts 4.1 million of registered Palestinian refugees of which 1.6 million living in the WB and GS (about 45% of the OPT population). Consequently, almost half the OPT population should be, in principle, entitled to UNRWA services. However, only a segment of the registered refugees receives health services at UNRWA

facilities, while the rest seek health care elsewhere (Hamdan, Defever *et al.* 2003). UNRWA primarily focuses on basic health services, such as disease prevention and control, primary care, family health, health education, physiotherapy and psychological support and environmental health (Schoenbaum, Afifi *et al.* 2005). UNRWA’s health services are provided through a network of PHC centers throughout the WB and GS; 35 centers in the WB and 18 in GS, representing about 8.1% of all PHC centers in the OPT (Table 2.1). In addition, UNRWA provides some secondary care services – for which patients must pay 10-25% of the cost – through a limited number of contractual agreements for hospital care with NGOs providers, besides its hospital in the WB (63 beds).

2.1.3. The Private not-for-profit Sector (NGOs)

The private not-for-profit sector is represented by a network of Palestinian Non-Governmental and private voluntary organisations (PNGOs). PNGOs had a central role in providing health care before the creation of the Palestinian MoH in 1994. Currently, there are about 49 non-governmental not-for-profit health societies providing health services for the Palestinian population (Hamdan, Defever *et al.* 2003). PNGOs contribute to the provision of all levels of health care, and have a tendency to provide PHC services to communities under-served by the other agencies, especially in rural areas of the WB. The number of PHC centers run by PNGOs fell from 242 in 1992 to 177 in 1994 (Barghouthi and Lennox 1997), and from 214 in 2004 to 185 in 2005, which represent about 28.3% of the total PHC centers in the OPT (Table 2.1). While the decline in recent years was attributed to a new classification system (MoH-PHIC 2006), the early decline following Oslo accords was mainly due to abrupt changes in donors’ aid policies and the PNA budget allocation strategy (Barghouthi and Lennox 1997). It is important to note that this decline was more than made up for by the increase in the number of the MoH’s PHC centres, where about 170 new PHC facilities were opened (mostly in the WB) in under 13 years (HPU 2008a). The average population per facility has, however, grown from 5,294 persons per facility in 2000 up to 5,752 persons per facility in 2006 (HPU 2008a). It is noteworthy that some facilities’ services have been integrated and coordinated between the MoH and some non-governmental organisations, where joint clinics are now available (HPU 2008a). In addition to PHC centers, the non-governmental sector operates some 1,681 beds in 30 hospitals (representing 33.5% of the total beds). Compared with those run by the MoH, the non-governmental hospitals are found under-utilised, with

substantial part of their working load being cases referred by the MoH (Mataria, Khatib *et al.* 2009).

2.1.4. The Private for-profit Sector

A wide range of private practices including those of self-employed physicians and dentists, hospitals, diagnostic centers, and pharmacies represent the “for-profit private” health care sector. The private sector has expanded rapidly in the past few years, with phenomena such as group practices and private health insurance schemes beginning to develop. However, the extent to which its practices are monitored and regulated, as well as, the implications of its rapid growth for the public sector remain unclear (Giacaman, Abdul-Rahim *et al.* 2003). A comprehensive system of adequate and reliable data about the private for-profit health sector is lacking. Table 2.2 summarises some of the available figures on the different kinds of these practices. A prominent aspect of the private for-profit services is their concentration in the urban areas of the WB.

Table 2.2: Private for-profit Health Practices by Type of Services and Region, 2005

Type of Services	Region		OPT	
	WB (%) *	GS (%) **	#	%
General Clinics	15.0	3.3	372	11.4%
Specialist Clinic	33.2	53.3	1,273	39.3%
Dentist Clinic	34.6	28.1	1,031	31.8%
Medical Labs and Others **	16.4	14.9	537	13.6%
Specialist Hospital	0.8	0.4	25	0.8%
Total	100	100	3,238	100

* Figures represent percentage distribution of sampled health institutions.

** Include radiology and imaging centers; physiotherapy centers; dental labs; optics centers and midwives.

Source: PCBS. Health Care Providers and Beneficiaries Survey-2005, Main Findings, June 2006

2.2. Availability, Accessibility and Quality of Health Care Services: A Portrayal

Availability of, and accessibility to, various types/levels of health care services are key elements in analysing equity in health care delivery in a given country (Mooney, Hall *et*

al. 1991). Availability refers to the extent to which various types of health care services do exist, and if so, whether the distributions of these services throughout the different areas in a country are appropriate, an issue related to the supply side of health care market (Nia and Bansal 1997). Accessibility to health care is concerned with the ability of a population to obtain a specified set of health care services; i.e., the degree to which individuals are able to contact/reach the needed health services (Hamdan, Defever *et al.* 2003). In this context, geographic accessibility, referred to as spatial or physical accessibility, is concerned with the complex relationship which exists between the spatial separation of the population and the supply of health care facilities (Ebener, Morjani *et al.* 2005). Therefore, accessibility reflects the appropriateness of the distribution and organisation of health care in a country. It is mainly affected by the way in which health care is delivered (the structure of service, the physical allocation, means of transport, etc.), and funded (insurance coverage, ability to pay, etc.), as well as by socioeconomic elements (Ebener, Morjani *et al.* 2005). A number of recent studies commenting on the delivery of health care in the local context of the OPT raised serious concerns about both issues of availability and accessibility to health services (Hamdan, Defever *et al.* 2003; Heilskov, Kjaeldgaard *et al.* 2006; Mataria, Khatib *et al.* 2009). The following subsection provides a brief review of the concerns raised by these studies.

2.2.1. Spatial Distribution of – and Physical Accessibility to – Health Care

Overall, the distribution of health care facilities between and within the two Palestinian regions: the WB and GS, was described as inappropriate and inadequate in terms of the number, level and type of services (Hamdan, Defever *et al.* 2003). In fact, the special-inequalities in the distribution of health care are, especially, pronounced in the case of secondary and tertiary health care services rather than the primary services, which are almost available throughout different areas. For instance, of the 22 hospitals in GS, 14 are located in Gaza City, with the others located in the remaining 4 areas. Similarly, while the centre of the WB has 20 hospitals, the Northern and Southern areas include 18 and 16 hospitals, respectively (HPU 2008a). The unequal distributions of health facilities in favour of the central areas can be better marked in terms of number of beds per capita: while Ramallah district and Gaza City have 1.1 and 2.1 beds per 1000 capita, respectively, Salfeet district in the WB and Rafah City in the GS have only 0.2 and 0.5 bed per 1000 capita, respectively (HPU 2008a). Overall, the GS possesses 1.4 beds per 1000 capita whereas the WB has 1.2 beds per capita. This contradicts with the

distribution of PHC facilities, where the number of population per PHC facility in the GS is much higher than in the WB: 11,106 versus 4,692 individuals per PHC facility (HPU 2008a).

While the above patterns indicate unequal distribution of secondary and tertiary facilities in favour of the centre areas in both regions, and in favour of the WB in case of PHC facilities, special-inequalities can, in fact, matter more – as a factor that contribute to inequity in the health sector – in the context where the country's area is rather large and transportation are costly or unavailable (Fortney, Rost *et al.* 2000). Overall, the OPT is a combined area of 6165 km², divided into two geographically distinct territorial regions: the WB (5800 km²) and the GS (365 km²), separated throughout by areas of Israeli jurisdiction (PASSIA 2005). In principle, therefore, since the country is rather small and transportation is available, services are within rather easy access. For instance, most of the population, especially in GS, live within a short distance of the health care services. Yet, the problematic issue is the physical accessibility to the available services. Indeed, when considering the current geopolitical realities, the special distribution of health care can be a significant factor, given the imposed discontinuity between the “autonomous” Palestinian agglomerations, which were attributed as a “mosaic of islands” (Pourgourides 1999), and today are further enclosed by the separating wall.

In effect, there is limited physical accessibility to health care due to mobility restrictions imposed by multiple manned and non-manned military checkpoints and the separation wall that prevent patients and medical staff, and sometimes ambulances, travelling from rural to urban localities and between urban centres from accessing needed care (Giacaman, Khatib *et al.* 2009; Mataria, Khatib *et al.* 2009). A national survey (PCBS 2004) conducted at the end of 2003 reported that the number of people needing an hour or more to reach the appropriate health facility was increased tenfold by Israeli restrictions on travel (4.0% vs. 0.4%). The compromised access to health care has led to the introduction of a network of mobile clinics to cater for the needs of people living in remote and isolated localities, the adaptation of many PHC centres to provide more than basic services, and the increase in the number of referrals for treatment abroad, with a consequent additional cost burden for both the system and the patients (Mataria and Khouri 2008). Despite that the unavailability and the limited physical accessibility to the needed health care have been recently documented in several studies (Miranda 2004; Qato 2004; Horton 2007; ICRC 2007), and in a series of reports prepared by the WHO's mission in the WB and GS (WHO 2007; WHO 2008b). All showing an emerging lack of medications, medical supplies and functioning equipments, particularly, during 2006 and

2007. For instance, “At the end of July 2007, 77 drugs related to reproductive health care were depleted in GS including those for antenatal care, safe delivery and management of risk factors such as hypertension for pregnant women, and maternal outcomes are likely to be threatened” (WHO 2007). Besides, the lack of anaesthetic gas needed for surgery in some hospitals (WHO 2007), a recent WHO report documents the cases of 32 patients who died while between October 2007 and March 2008 due to denied permission to access specialised referral health services from outside the GS (WHO 2008a).

3. Methodology

The method we adopt in this report to measure and decompose inequality in health care utilisation involves several steps. First, an appropriate explanatory model of health care utilisation (demand) is specified, and estimated for the entire sample population, and for each specific SES group. Regression parameter estimates are, then, used in conjunction with the sample means of the variables – for which we want to control for – to simulate various distribution of health care utilisation. Finally, for each simulated distribution, a **CI** is estimated. This allows us to identify the contribution of each factor to the overall degree of inequality observed for the variable of interest. These steps are fully illustrated in the following subsections.

3.1. Model Specifications

Regression analyses based on the two-part model (TPM): a logit model for the participation decision followed with a GLM for the frequency of the visits, are attempted. If y_i represents the number of visits and z_1 and z_2 represent two sets of explanatory variables: medical-need (m_j) and non-need (x_j) variables, then the TPM could be specified as follows:

$$P_i = I_{P_i^*} > 0 \ \& \ E(P_i) = G(z_1 \gamma_1) \quad \text{with} \quad G(p) = \frac{1}{1 + e^{-p}} \quad (1)$$

$$y_i = I_{(P_i=1)} \cdot [y_i^*] \ \& \ E(y_i^* / P_i = 1) = F(z_2 \gamma_2) \quad \text{with} \quad F(p) = e^p \quad (2)$$

$$\text{and } E(y_i) = E(P_i) * E(y_i / P_i = 1) \quad (3)$$

Eq. (1) describes the decision to use health care; Eq. (2) quantifies the level of conditional use – being specified as a zero-truncated negative binomial distribution with a log link relation, and Eq. (3) provides the unconditional usage (Buntin and Zaslavsky 2004). Hence,

$$E(P_i) = G(x_{1,i}b + m_{1,i}d) \quad (4)$$

$$E(y_i / P_i = 1) = F(x_{2,i}\beta + m_{2,i}\delta) \quad (5)$$

$$\hat{y}_i = \underbrace{G(x_{1,i}\hat{b} + m_{1,i}\hat{d})}_{\text{participation}} * \underbrace{F(x_{2,i}\hat{\beta} + m_{2,i}\hat{\delta})}_{\text{conditional use}} \quad (6)$$

where the parameters $(\hat{b}, \hat{\beta}, \hat{d}, \hat{\delta})$ represent the average behaviour of the population. In order to take into account potential heterogeneity in behaviour across the income groups, Eq. (6) can be re-estimated for each SES group (g) as follows,

$$\hat{y}_g = \underbrace{G(x_{1,i}\hat{b}_g + m_{1,i}\hat{d}_g)}_{\text{participation}} * \underbrace{F(x_{2,i}\hat{\beta}_g + m_{2,i}\hat{\delta}_g)}_{\text{conditional use}} \quad (7)$$

where g could represent different income-quintile (Oaxaca 1973; Benham and Benham 1975).

Since our parameters are estimated using nonlinear functions, the decomposition methods proposed by the ECUity group cannot immediately be applied. Therefore, we opt to employ an incremental approach of decomposition using microsimulation technique – see below.

3.2. Microsimulation Technique

The microsimulation-based decomposition technique involves simulating various distributions of health care utilisation that would emerge under different *hypothetical* scenarios. For each simulated distribution, a CI is estimated using convenient covariance methods (Lerman and Yitzhaki 1989), and tested using bootstrap methods (Abu-Zaineh, Mataria *et al.* 2008). The technique takes as its starting point the notion of perfectly equal distribution of health care utilisation. This is defined as the counterfactual distribution of health care that would be observed if all individuals (groups) in the population, irrespective of their SES, had the same medical and nonmedical characteristics, with similar effects on participation and conditional consumption behaviours. Hence, if $\forall i, \forall j: x_{j,i} = \bar{x}_j$ & $m_{j,i} = \bar{m}_j$ – where \bar{x}_j and \bar{m}_j are the sample’s means – and if $\forall g: b_g = b; d_g = d$ & $\forall g, \beta_g = \beta; \delta_g = \delta$ – then,

$$\forall i, \hat{y}_i^0 = \underbrace{G(\bar{x}_1 \hat{b} + \bar{m}_1 \hat{d})}_{\text{participation}} * \underbrace{F(\bar{x}_2 \hat{\beta} + \bar{m}_2 \hat{\delta})}_{\text{conditional use}} \quad (8)$$

This distribution whose CI is necessarily zero constitutes the baseline with which a one-by-one comparison of each explanatory factor is carried out so as to identify its contribution to inequality. The first distribution can be derived by assuming different health care needs as,

$$\forall i, \hat{y}_i^l = G(\bar{x}_1 \hat{b} + m_{1,i} \hat{d}) * F(\bar{x}_2 \hat{\beta} + m_{2,i} \hat{\delta}) \quad (9)$$

and the transformation $C_{\hat{y}_i^0} \rightarrow C_{\hat{y}_i^l}$ gives the contribution of heterogeneity in medical-need to use-inequality. Thus,

$$\Delta I_{(N)} = C_{\hat{y}_i^l} - C_{\hat{y}_i^0} = C_{\hat{y}_i^l} \quad (10)$$

The heterogeneity in the behaviour of the SES groups – as related to participation part – can be obtained as,

$$\forall i, g \quad \hat{y}_{i,g}^{2,a} = G\left(\bar{x}_l \hat{b} + m_{l,i} \hat{d}_g\right) * F\left(\bar{x}_2 \hat{\beta} + m_{2,i} \hat{\delta}_g\right) \quad (11)$$

The extent of inequality that is attributed to heterogeneity in behaviour associated with participation part can be captured as,

$$\Delta I_{(PP)} = C_{\hat{y}_{i,g}^{2,a}} - C_{\hat{y}_i^l} \quad (12)$$

Likewise, heterogeneity in behaviour as per conditional usage can be obtained as,

$$\forall i, g \quad \hat{y}_{i,g}^{2,b} = G\left(\bar{x}_l \hat{b} + m_{l,i} \hat{d}_g\right) * F\left(\bar{x}_2 \hat{\beta} + m_{2,i} \hat{\delta}_g\right) \quad (13)$$

and the degree of inequality due to heterogeneity in conditional usage can be captured as,

$$\Delta I_{(CC)} = C_{\hat{y}_{i,g}^{2,b}} - C_{\hat{y}_{i,g}^{2,a}} \quad (14)$$

Considering the effect of socioeconomic characteristics, the distribution in Eq. (13) can be reproduced such that socioeconomic variables are allowed to vary amongst the population. Thus,

$$\forall i \quad \hat{y}_i^3 = G\left(x_{l,i} \hat{b} + m_{l,i} \hat{d}_g\right) * F\left(x_{2,i} \hat{\beta} + m_{2,i} \hat{\delta}_g\right) \quad (15)$$

The part of inequality due to the distribution of socioeconomic variables can be captured as,

$$\Delta I_{(SEV)} = C_{\hat{y}_i^3} - C_{\hat{y}_{i,g}^{2,b}} \quad (16)$$

Note that the simulated distribution obtained from Eq. (15) employs the individual specific- socioeconomic characteristics ($x_{j,i}$), but the population-wide effect (\hat{b} and $\hat{\beta}$).

To take into account potential heterogeneity in the impact of these variables by SES, Eq. (15) is then restored with the group-specific parameters $(\hat{b}_g, \hat{\beta}_g)$. Thus,

$$\forall i, g \quad \hat{y}_i^4 = G\left(x_{1,i} \hat{b}_g + m_{1,i} \hat{d}_g\right) * F\left(x_{2,i} \hat{\beta}_g + m_{2,i} \hat{\delta}_g\right) \quad (17)$$

and the degree of inequality due to heterogeneity in behaviour with respect to socioeconomic characteristics can be captured as,

$$\Delta I_{(SEC)} = C_{\hat{y}_{i,g}^4} - C_{\hat{y}_i^3} \quad (18)$$

The last transformation is the one that captures the effect of variables not included in the model. This can be obtained as,

$$\Delta I_{(R)} = C_{y_i} - C_{\hat{y}_{i,g}^4} \quad (19)$$

Defining overall use-inequality in terms of medical-need ($\Delta I_{(N)}$) and non-need ($\Delta I_{(NN)}$) and substituting the corresponding components (captured all above through Eq. 10– 19), the overall use-inequality can, now, be fully revealed as,

$$I_y = \Delta I_{(N)} + \Delta I_{(PP)} + \Delta I_{(CC)} + \Delta I_{(SEV)} + \Delta I_{(SEC)} + \Delta I_{(R)} \quad (20)$$

and defining HI as the part of inequality that is not due heterogeneity in need gives,

$$HI = I_y + \Delta I_{(N)} = \Delta I_{(NN)}$$

$$HI = \Delta I_{(PP)} + \Delta I_{(CC)} + \Delta I_{(SEV)} + \Delta I_{(SEC)} + \Delta I_{(R)} \quad (21)$$

The HI index, as defined in Eq. (21), can be disentangled into two meaningful parts: (i) the part that results from the (unequal) distributions of the variables and (ii) the part that

is due to heterogeneity in behaviour of SES groups for a given need. The part of HI due to the distributions of variables (by income) can be defined as,

$$I_V = \Delta I_{(SEI)} + \Delta I_{(R)} \quad (22)$$

while the part due to the heterogeneity in behaviour can be defined as,

$$I_B = \Delta I_{(PP)} + \Delta I_{(CC)} + \Delta I_{(SEC)} \quad (23)$$

where the degree of inequity due to the heterogeneity in behaviour with respect to SES is decomposed into three distinct effects stem, respectively, from the variations in the influence of: (a) need factors on participation behaviour ($I_{(PB)}$); (b) need factors on conditional consumption behaviour ($I_{(CQ)}$), and (c) socioeconomic factors on the consumption behaviour ($I_{(SEQ)}$). Such approach allows us to detect for a given level of need the role of differences in practices in generating inequity. Broadly interpreted, these variations in practice can be linked to factors related to demand and supply sides of health care market; reflecting differences in patients' preferences and providers' behaviour in relation to SES (Dormont, Grignonc *et al.* 2006).

3.3. Data Requirements and Variables Definitions

The empirical analysis presented in this report is based on data taken from the HCEU – Household Health Care Expenditure and Utilisation – survey carried out in the OPT in 2004. For the purpose of this analysis, individuals were taken as the unit of analysis. The HCEU survey covers a total of 25,180 individual observations: 13,619 in the WB and in 11,561 in GS. The survey questionnaire offers detailed information concerning individual's recent health experiences: morbidity and health status, utilisation of, and expenditures, on various types of health care. Data on demographic and socioeconomic characteristics include, among others, number of household members, income and expenditures, insurance coverage, as well as respondent's age, sex, education, marital status, employment status, location of residence (Urban, Rural, and Camp). Data on health care utilisation are gathered based on self-reported utilisation (measured by

number of visits/days) of three levels of health care: primary, secondary and tertiary-level. The recall period was 12 months for the secondary-level (for which a distinction was made between outpatient-clinic and inpatient-hospital admission), but this was shorter for tertiary-level (6 months), and primary-level (one month). For both levels of care: primary and secondary (outpatient-clinic), no distinction was made by type of health professional providing care (i.e., GP vs. SP). However, for each level of care, a distinction was made in terms of type of sector/provider used (Public, Private, and NGOs) and type of services/treatments sought/received (e.g., referral, follow-up, diagnostic tests, medications, surgery, etc.). Data on health care expenditures incurred as per level of care, type of care, and services providers were also reported in the HCEU survey. For the purpose of this analysis, health care utilisation (the dependent variable) is proxied by the physical units of utilisation – i.e., number of visits. The latter is separately computed for each level of health care: primary, secondary and tertiary. Utilisation of the secondary-level are distinguished and separately computed as outpatient-visits vs. inpatient-admissions. Lastly, no attempt is made in this essay to aggregate the various types and levels of care into one measure counting overall volume of utilisation. The latter is not preferred, since it involves “adding apples and oranges” by pro rata scaling up or down the different types of medical care (van Doorslaer and Masseria 2004).

The measurement of need for health care used in this study is apprehended through a wide set of explanatory variables including morbidity indicators and demographics (age and sex). As for morbidity variables, the HCEU-2004 survey offers a detailed list of illnesses (up to 20 diseases and health problems) declared by respondents, at the beginning of the reference period, based on self-reported morbidity. From this detailed data, a set of dummy variables are constructed to indicate the presence of each type of morbidity/health problems as per individual case. These include: chronic and long-standing diseases (e.g., cancer, diabetes, obstructive pulmonary disease, heart disease and kidney disease, etc.); acute diseases; injury/accident; mental and psychological problems. In addition, the number of diseases is computed from the list of illnesses declared by the respondents. Finally, four age groups and dummies for gender are included in the measurement of “need” to reflect the variations in the above indicators across demographic groups.

As for non-need indicators, a number of explanatory variables, which are shown to affect utilisation patterns, are integrated in the analysis (van Doorslaer, Koolman *et al.* 2004). Among the potential list of variables incorporated in the regression analysis are: education (level of education completed); activity status (employed, unemployed, retired,

etc.); marital status (married, separated/divorced, etc.); insurance coverage (public/private cover), and location of residence (urban/rural). Lastly, concerning the measurement of living standards (i.e., the ranking variable), the HCUE-2004 offers two direct measures: total household income and total consumption expenditures. However, since the latter is commonly advocated as a more reliable measure of households' living standard in the context of developing countries (Deaton and Grosh 2000), we have used this variable to define average adjusted income per equivalent adult. This was computed – as in previous essays – using the WHO/FAO equivalence scale proposed for the case of developing countries (Aho, Lariviere *et al.* 1997; Deaton and Grosh 2000).

3.4. Estimation Methods

Measures of health care utilisation used in this study are binary variables – taking the value of one or zero depending on whether the individual uses health care or not – and count variables – taking non-negative integer values. Both of these variables are typically characterised by highly skewed distributions with a non-negligible proportion of the survey respondents reporting zero utilisation, and a very small proportion reporting frequent utilisation far above the mean during a given period of time (O'Donnell, van Doorslaer *et al.* 2007). Indeed, as in similar studies on the utilisation of health services (e.g., van Doorslaer, Koolman *et al.* 2004; Morris, Sutton *et al.* 2005), a non-negligible proportion of our survey respondents did not use primary-level of health care during the relevant recall period (about 45.6%), whereas the proportions of non-users of secondary- and tertiary-levels are even much higher (about 59% and 87% of non-users, respectively).

Clearly, features such as these make OLS estimation biased and inefficient, and call for specific-estimation techniques (Buntin and Zaslavsky 2004). Theoretical analysis of health care utilisation offers a variety of alternative econometric specifications (cf. e.g., Jones 2000; Jones and O'Donnell 2002, for a review). Among the other possible candidates are: two-part model (TPM) (Manning, Morris *et al.* 1981); sample-selection model (SSM) (Heckman 1979); hurdle model (HM) (Mullahy 1986), and finite-mixture model (FMM) (Deb and Trivedi 2002). Many empirical studies addressed the issue of choice between alternative econometric specifications suggest that the choice depends on both theoretical and statistical considerations regarding health care demand. For instance, Leung and Yu (1996) show that the SSM is susceptible to collinearity between the inverse Mill's ratio and the explanatory variables in the second-step equation. They suggest using a t-test of the coefficient of the inverse Mill's ratio to choose between the

two specifications: if there is collinearity, the TPM is more reliable, given that it performs better than the SSM in terms of mean-squared error. Indeed, our data is characterised by a quite high correlation between the inverse Mill's ratio and the explanatory variables of the second-step equation (the correlation coefficient ranges between 0.86 and 0.89). On the other hand, although the HM and TPM are often regarded in the count data literature as being synonymous, Pohlmeier and Ulrich (1995) show that a limitation of the HM is that it treats the measure of frequent visits as being related to a single-spell of illness/treatment. This attests to be problematic, providing that health care use data are usually specific to a period of calendar time during which the first visit is not necessarily the initial one in a course of treatment.

An alternative modelling to count data was proposed by Deb and Trivedi (2002), who argue that counts data are sampled from a mixture of populations that differ with respect to their underlying latent health (severely-ill vs. perfectly-healthy), and thus, in their demands for health care (high-frequency-users vs. non-users). To suitably capture this feature of data, the authors propose using the so-called "latent class models"; e.g., the FMM. Jimenez-Martin *et al.* (2002) compare FMM with TPM using three waves of data for 12 European countries. Their empirical results show that the FMM may perform better than the TPM, but this was only true when parameter homogeneity is imposed (across countries) and for GP visits. For homogeneous parameter specification and SP visits, the TPM was preferred to the FMM. The authors explain the difference in the preferred specification for GP and SP by the fact that over a period of one year multiple-spells of illness/treatment are more likely to be observed for GP, whereas SP visits are more likely to represent a single-spell. Thus, the TPM, with its rationalisation through principal-agent story, should be more suited to representing (annual) SP visit data. Furthermore, a problem with the FMM, apart from the fact that its specification is not derived from an economic theory of health care demand, is that it involves estimating a large number of parameters; something that can lead to non-convergence of likelihood and to over-parameterisation problems.

Given the above suggesting that the TPM may perform better when compared with others, we have chosen to adopt for the purpose of this analysis a TPM, distinguishing between the probability of positive usage and the conditional amount of usage given positive use in the reference period. Various specifications of the TPM have been proposed in the literature (Jones and O'Donnell 2002). The choice depends mainly on statistical considerations regarding health care use (cf. e.g., Pohlmeier and Ulrich 1995). The TPM specifications we have used are based on a logit for the first-part equation (i.e.,

the probability of contact) and a generalised linear model (GLM) with a log link and a zero-truncated negative binomial distribution for the number of visits contingent on participation (Pohlmeier and Ulrich 1995). The choice of log link is motivated by the observation that the non-zero values for y_i are highly skewed (the skewness varies between 5.30 and 16.54 depending the level of care used). The log transformation can thus help lessen the degree of skewness observed in a distribution (Dormont, Grignonc *et al.* 2006).

In addition, since our dataset is characterised by a relatively high-dispersion – i.e., the variance of the dependent variable is greater than its expectancy – a Poisson distribution, which has a variance equal to its mean, is not suitable in such context. We have, therefore, used a zero-truncated negative binomial distribution, which was shown (e.g., Grogger and Carson 1991) to have more appropriate characteristics. Like others (e.g., Huber 2006), our explanatory variables to be included in the analysis are selected based on their significance-level – global nullity test – in a regression explaining the total number of visits. We have, thus, chosen to select comparable variables for all levels of health care to facilitate the comparison. Among the selected variables are those whose exogeneity might be questionable; e.g., morbidity indicators and insurance coverage. For instance, certain types of morbidity are likely to be altered by the utilisation of health care (Dormont, Grignonc *et al.* 2006). Similarly, while the inclusion of a dummy variable indicating coverage by insurance allows estimating the insurance-effect, the latter may not be exogenous, given that some (in particular the purchase of voluntary insurance) may result from individual's decision, which is related to the likelihood of future consumption. Although the main purpose of this exercise is to ascertain to what extent the unequal distribution of such coverage affects the degree of inequity, we have chosen to include only exogenous regressors to reduce the risk of bias due to endogeneity. An exogeneity test, following the methodology of Rivers and Vuong (1988), has been performed to select the variables that were proved to be exogenous. Since the implemented test enables examining exogeneity of all variables incorporated in the analysis, the risk of omitted variable bias is not a concern (Huber 2006).

The model is estimated for three levels of health care: primary, secondary, and tertiary. The regression-estimates are, then, used to simulate various distributions of health care, and to apply the full decomposition analysis, as described in Section 3.2, to each level. The *CI* of each simulated-distribution is estimated using the convenient (weighted) covariance method, which allows taking into account the sampling weight of each individual. The weighted covariance between the health care variable (y_i) and the

relative fractional rank (R_i) is thus computed as: $C_y = 2 / \bar{y}_i \text{cov}_w(y_i, R_i)$ – where cov_w represents the weighted covariance (Lerman and Yitzhaki 1989). In addition, we also separately investigate primary-level (outpatient-clinic) and secondary-level (hospital-inpatient admissions) by type of health care sectors/providers: Public, Private, and NGOs. This is done by deriving a probability-based outcome of any use during the reference period. Simple quintile distributions and *CI*'s based on the actual probability of use for each level of care and care providers are thus computed.

Lastly, statistical significance of observed variation in the computed values of each of the above contribution terms of decomposition were tested using bootstrap (BTS) method (Efron and Tibshirani 1993). For the case of a complex multi-stage sampling design such as the one we deal with in this essay, the appropriate bootstrap procedure involves, first, randomly drawing, with replacement, a large number (R) of random sub-samples of size n – with n equal to the original sample size – out of the original dataset – the so-called BTS re-samples. For each BTS re-sample, the sampling weights are normalised to a mean of one, and then the entire (weighted) procedure are applied to obtain the factor contributions, including the regressions, fractional rank construction and covariance computations. The procedure is replicated to the generated BTS re-samples, yielding for each of them the contributions estimates – BTS replications. Lastly, by using these datasets, an estimate of the standard error of each factor's contribution and for the *HI* index can be computed (cf., e.g. Abu-Zaineh, Mataria *et al.* 2008).

4. Results

The results are presented in sub-Sections 4.1 and 4.2. The first presents simple (unstandardised) quintile distributions and estimates of concentration indices (*CI*'s) for the (actual) probability of use for each level of care and care providers; and the second presents the decomposition results based on microsimulation method proposed above.

4.1. Quintile Distribution of Health Care Utilisation and Income-Related Inequality Indices for the Probability of a Visit/Use

The level of health care utilisation in both regions of the OPT, the WB and GS, are quite high: the proportions of individuals who have sought for a primary-level treatment

(during the last month) are about 59.1% and 45.2% in the WB and GS, respectively, whereas about 41.4% and 40.7% have been admitted to a hospital within the last year. Table 4.1 presents income-quintile distributions of health care utilisation for primary, secondary, and tertiary-levels. Results for each level of care are presented based on the actual probability of any use/visit. The probability of use of primary (outpatient) and secondary (inpatient) are also presented as per sub-categories of health care sectors/providers: Public, Private and NGOs.

Results show that in the case of **primary-level** and in both regions of the OPT lower-income groups are, in general, more intensive-users. This is demonstrated by the negative gradients by quintile and the significantly negative values of **CI**s [**CI**s < 0 at $p < 0.05$], indicating a pro-poor inequality in the probability of using primary-level of care. The pro-poor inequality in the probability of using primary-care appears to be greater in the case of WB [**CI** = - 0.214] than in GS [**CI** = - 0.131]. This indicates that the poor in the WB are generally more likely to use primary-care than their counterparts in GS.

The quintile distributions of primary-care as Public, Private or NGOs patient are also presented in Table 4.1. The distributions of primary-care by income vary significantly across the three sectors (providers). In the two regions (the WB and GS), lower-income groups appear to be more intensive-users of primary-care in the Public and the NGOs sectors: the probability of seeking primary-care in a public facility in the bottom-income quintile is about 2 times higher in the WB, and 3 times higher in GS, than that of seeking primary-care in the private sector. The reverse is true in the top-income quintile: the probability of seeking primary-care in the private sector is about 3 times higher in the WB, and 2 times higher in GS, than that of seeking primary-care in public sector. Concerning the NGOs sector, results demonstrate higher probability of utilisation among the poor with the probability of seeking primary-care in the bottom-income quintile being about 2 times higher in the WB, and in 3 times higher in GS, than that of seeking primary-care in private sector. Estimates of the **CI**s for sub-categories of primary-care users – presented in Table 4.1 – confirm the above trends: the **CI**s for both public and NGOs sectors appear to be significantly negative [**CI** < 0 at $p < 0.05$], whereas the **CI** of private sector is significantly positive [**CI** > 0 at $p < 0.05$].

With regards to **secondary-level** – both outpatient and inpatient type of care – higher-income groups appear to be more intensive-users – as shown by the positive gradients of quintile in the two regions. However, when the **CI** of the actual probability of use is estimated, the positive sign appears to be statistically significant [**CI** < 0 at $p <$

0.05] for outpatient type of care but not inpatient. This indicates a significant pro-rich inequality in the probability of using secondary-care as outpatient. The distributions of secondary-care (as inpatient admissions) by type of sector/provider are also presented in Table 4.1. Results demonstrate that the distributions of hospital-admissions as public or private patient differ considerably by income: the probability of being admitted as a public-patient is about 4 times higher in the WB, and 5 times higher in GS, than that of being admitted as a private-patient in the bottom-quintile. The reverse is true at the high end of spectrum: the probability of private-admission in the top-income quintile is about 2 times higher in the WB, and 3 times higher in GS, than the public-admission probability. Turning to the NGOs sector, results demonstrate higher probabilities of (inpatient) use among higher-income quintiles with a probability of admission to NGOs' hospital in the top-income quintile being about twice the probability in bottom-income quintile in the two regions.

Table 4.1: Quintile Distribution and Income-related Inequality Indices for the Actual Probability of Health Care Use by Level of Care and Type of Providers*

West Bank (WB)						
Pro. of any use/admission	Q1 poorest	Q2	Q3	Q4	Q5 richest	CI
Primary level	0.484	0.471	0.417	0.227	0.209	-0.214
Public sector	0.319	0.312	0.201	0.203	0.103	-0.127
Private sector	0.141	0.197	0.231	0.242	0.283	0.260
NGOs sector	0.258	0.107	0.091	0.087	0.077	-0.133
Secondary (outpatient)	0.109	0.167	0.316	0.405	0.439	0.151
Secondary (inpatient)	0.601	0.603	0.613	0.648	0.621	0.274
Public sector	0.363	0.342	0.341	0.308	0.085	-0.033
Private sector	0.101	0.111	0.124	0.186	0.187	0.651
NGOs sector	0.103	0.112	0.171	0.126	0.137	0.163
Tertiary level	0.036	0.059	0.061	0.066	0.077	0.761
Gaza Strip (GS)						
Pro. of any use/admission	Q1 poorest	Q2	Q3	Q4	Q5 richest	CI
Primary level	0.421	0.411	0.301	0.211	0.111	-0.131
Public	0.310	0.308	0.241	0.203	0.103	-0.121
Private	0.106	0.119	0.131	0.162	0.233	0.126
NGOs	0.298	0.187	0.141	0.137	0.131	-0.121
Secondary (outpatient)	0.089	0.092	0.096	0.106	0.119	0.107
Secondary (inpatient)	0.653	0.601	0.803	0.840	0.811	0.274
Public	0.517	0.482	0.471	0.413	0.104	-0.291
Private	0.097	0.126	0.154	0.166	0.291	0.645
NGOs	0.108	0.143	0.144	0.146	0.187	0.167
Tertiary level	0.010	0.019	0.021	0.025	0.037	0.676

*Note: A positive (negative) CI indicates a *pro-rich* (*pro-poor*) distribution. Index in bold type indicates statistical significantly different from zero at $p < 0.05$.

Also, from Table 4.1, substantial differences are found in the bottom-income quintiles and in the top-income quintiles in the patterns of **inpatient-admission** between public and NGOs sectors: the probability of admission to a public-patient is about 3 times higher in the WB, and 5 times higher in GS, than that of being admitted to NGOs hospital in the lowest-quintiles, while the probability of being admitted as NGOs in the top-income

quintile is twice the public admission probability in the two regions. The estimated **CI**s for each type of admission confirm the above patterns: for all types of admissions, except public-admissions, indices are significantly positive [**CI** > 0 at $p < 0.05$], suggesting inequalities favouring the rich in the probability of utilisation of secondary (inpatient) care in both private and NGOs sectors and in the two regions. By contrast, the **CI**'s of public-admission in the two regions are positive and significantly different from zero [**CI** > 0 at $p < 0.05$], suggesting inequality in admission to public sector favouring the poor. Turning, lastly, to **tertiary-level**, significant pro-rich inequalities are detected in both regions: results clearly show that the probabilities of utilisation of tertiary-care are higher in the higher-income quintiles – as demonstrated by the positive gradients by quintile – and the significantly positive values of **CI** at $p < 0.05$. Lastly, no significant differences are found in the pro-rich patterns of utilisation of tertiary-level between the two regions: the **CI** of tertiary care in the WB [**CI** = 0.761] is only slightly higher than that of the tertiary care in GS [**CI** = 0.676].

The results presented above are all based on the actual distribution of health care utilisation (the probability of any use). The reported **CI**s summarise, therefore, the degree to which there is inequality (in the probability of use) with respect to income. The degree of inequalities detected in the distribution of each level of health care may, however, reflect differences in need by income – i.e., justifiable inequalities –, and therefore, can not be interpreted as inequitable. In the following sub-Section, the overall income related-inequality for the total number of visits are measured and fully decomposed following the methods described in Section 3.2.

4.2. Decomposition Results

The full decomposition results based on microsimulation exercise are presented in Table 4.1 The overall measured inequality in the utilisation of different levels of health care (called I_y) is split, first, as per the identity defined in Eq. (20), into two broad categories of inequality: the first measures the contributions of need factors (as captured by morbidity and demographic indicators) – i.e., the justifiable part of inequality – (called I_N), and the second measures the contribution of other non-need factors – i.e., the unjustifiable part of inequality – (called I_{NN}). The latter, which also provides us with a measure of the **HI**, is, then, disentangled, as per Eq. (23) and (24), in terms of two meaningful parts: (a) the part of inequity due to the (unequal) distributions of socio-economic variables by income (called I_v), and (b) the part of inequity due to heterogeneity

in behaviour across SES groups (called I_B) – i.e., the variation in the parameter estimates across income groups. The findings on the heterogeneity in behaviour for a given need are also decomposed by parts of the demand process; i.e. for the probability of participation (called I_{PP}) and the conditional number of usage (called I_{CC}).

As shown in Table 4.1, with the exception of **primary-level**, the estimated values of the concentration index (C_y) of the overall income related-inequality in the utilisation of each level of health care in the two regions are significantly positive [$C_y > 0$ at $p < 0.05$]. This indicates that the utilisation of primary-care is generally concentrated among the poor [$C_y = -0.0527$ and -0.0415 for the WB and GS, respectively], whereas the utilisation of **secondary-level** – both outpatient and inpatient services – and **tertiary-level** are concentrated amongst the better-off, with the C_y index being more pro-rich in the case of secondary-inpatient [$C_y = 0.0617$ and 0.0313 for the WB and GS, respectively] compared to secondary-outpatient case [$C_y = 0.0511$ and 0.0247 for the WB and GS respectively], while they appear to be even a lot more pronounced in the case of tertiary-care [$C_y = 0.1311$ and 0.1204] compared with both types of secondary-care.

The estimated values of Need index (the I_N) – i.e., the aggregation or the combined effects of all morbidity and demographic variables included in the model – emerge, on the other hand, invariably significantly negative [$I_N < 0$ at $p < 0.05$] for all levels of care. This clearly means that need for health care are always concentrated in the lowest-part of income distribution, and that the poor are, in general, in a poorer health status than the rich. Indeed, the (partial) contribution of heterogeneity in need (by income) to the measured degree of inequality in utilisation is captured, as in the previous research (e.g., van Doorslaer, Koolman et al. 2004), by adjusting the distribution of utilisation for a set of morbidity and demographic variables (age and sex).

However, as shown in Table 4.2, the values of Need Index (I_N) not due to demographics –i.e., the degree of “need-expected” inequality estimated by allowing for morbidity differences, while keeping the distribution standardised for demographic differences– account for the bulk of the I_N value [circa 90% of the I_N index value]. The partial contributions of age-sex differences to the I_N , although push the distribution of need further in a pro-poor direction, remain comparatively small and account for only 10% of the I_N index value. This indicates that, although demographic differences play some role in shaping need for health care, the overall value of our I_N is mainly accounted for by the distribution of morbidity across income, which is significantly more prevalent amongst the poor.

Overall, the extent to which the distribution of need by income drives use-inequality differs by the levels of care and between the two regions. While the actual distributions of all levels of care utilisation (C_y) are barely, if ever, distributed to match the pro-poor distributions of need, some diverse trends emerge: in the two regions, the actual pro-poor distribution of primary-care appears to be much “less pro-poor” than that expected on the basis of needs [$C_y = -0.0527$ and -0.0415 vs. $I_N = -0.0925$ and -0.0772 for the WB and GS, respectively], whereas the opposite is true for all other cases: the actual pro-rich distributions of both secondary-care (outpatient and inpatient services) and tertiary-care appear to be a lot “more pro-rich” compared to what would be required on the basis of needs (e.g., for inpatient-care, $C_y = 0.0617$ and 0.0313 vs. $I_N = -0.0377$ and -0.0171 , and for tertiary-care, $C_y = 0.1311$ and 0.1204 vs. $I_N = -0.0815$ and -0.0741 for the WB and GS, respectively). This clearly suggests that if the utilisation of each level of health care were driven by need factors alone, pro-poor inequalities would have been merged. This also suggests that the overall measured inequality in the utilisation of each level of care (I_y) is about 50 % lower than it would have been, if need had been distributed equally by income – i.e., if I_N was equal to zero.

Table 4.2: Decomposition of Income-related Inequality and Horizontal Inequity in Health Care Utilisation by Levels of Health Care *

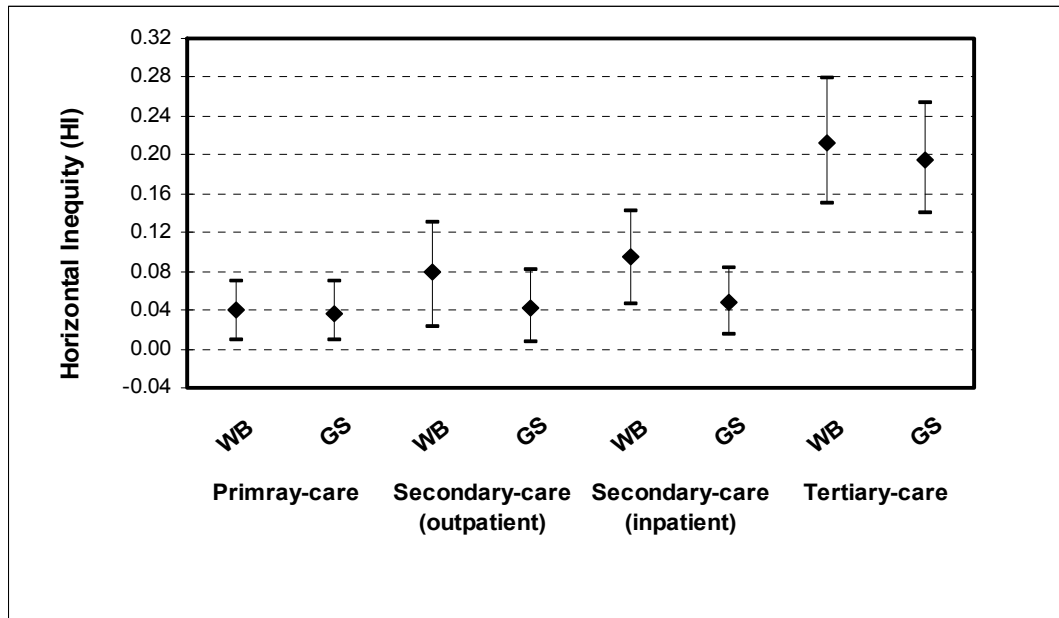
Me asu re	Description	Primary Care		Secondary Care- Outpatient		Secondary Care-Inpatient		Tertiary Care	
		WB	GS	WB	GS	WB	GS	WB	GS
Iy	Total income-related inequality (Cy)	-0.0527	-0.0415	0.0511	0.0274	0.0617	0.0313	0.1311	0.1204
IN	Inequality due to need factors (all)	-0.0925	-0.0772	-0.0278	-0.0139	-0.0337	-0.0171	-0.0815	-0.0741
	partial contribution of:								
Ck	Morbidity Var.	-0.0829	-0.0679	-0.0247	-0.0125	-0.0298	-0.0149	-0.0749	-0.0684
Ck	Demographic Var.	-0.0096	-0.0093	-0.0031	-0.0014	-0.0039	-0.0022	-0.0066	-0.0057
IN	Inequality due to non-need factors (all)	0.0398	0.0357	0.0789	0.0413	0.0954	0.0484	0.2126	0.1945
HI	Horizontal Inequity Index	0.0398	0.0357	0.0789	0.0413	0.0954	0.0484	0.2126	0.1945
IV	Inequity due to socioeconomic var.(all)	0.0256	0.0240	0.0531	0.0273	0.0640	0.0306	0.1494	0.1315
	partial contribution of:								
Ck	Income	0.0142	0.0141	0.0302	0.0168	0.0361	0.0181	0.0961	0.0891
Ck	Education	0.0047	0.0041	0.0104	0.0054	0.0105	0.0050	0.0172	0.0170
Ck	Insurance	0.0004	0.0003	0.0022	0.0011	0.0018	0.0008	0.0152	0.0135
Ck	Activity status	0.0028	0.0026	0.0019	0.0009	0.0051	0.0023	0.0003	0.0010
Ck	Marital status	0.0026	0.0024	0.0017	0.0009	0.0038	0.0018	0.0002	0.0004
Ck	Location of residence	0.0010	0.0005	0.0067	0.0021	0.0067	0.0026	0.0204	0.0105
IB	Inequity due to heterogeneity in behaviour	0.0127	0.0107	0.0247	0.0135	0.0312	0.0164	0.0605	0.0589
	partial contribution:								
IPP	Participation	0.0114	0.0095	0.0161	0.0081	0.0201	0.0105	0.0427	0.0388
ICC	Conditional usage	-0.0049	-0.0033	0.0069	0.0022	0.0099	0.0051	0.0128	0.0142
ISE	Other socio-econ.(all)	0.0062	0.0045	0.0016	0.0032	0.0012	0.0008	0.0050	0.0059
IR	Residual term	0.0015	0.0010	0.0011	0.0005	0.0002	0.0014	0.0027	0.0040

Note: * A positive (negative) value of the index indicates a pro-rich (pro-poor) distribution. Index in bold type indicates statistically significantly different from zero at ($p < 0.05$).

As shown above, although the distributions of need serve to push the distribution of utilisation of the three levels of health care in a pro-poor direction, the divergence between overall use-inequality index (I_y) and the distributions of need (I_N) is, however, remarkable. The discrepancies between the “actual” and the “need-expected” distributions of utilisation indicate, therefore, the direction and magnitude of Horizontal Inequity (HI) index – defined as inequality not due to income-related differences in need, and computed as in Eq. (22) – i.e., by subtracting the contribution of need factors from the total inequality. Results on the HI index, which are also presented in **Figure 4.1** with the corresponding 95% BTS confidence intervals, show that in all the cases, the values of HI index appear to be positive, in the range of [0.039; 0.213], and statistically significantly different than zero at $p < 0.05$. For all levels of health care, the WB region of the OPT shows significantly higher HI index values than GS. However, in the two regions, the magnitudes of HI index across the three levels of health care show generally similar patterns: the HI values are greater (i.e., very pro-rich) in the case of tertiary-care [$HI = 0.2126$ and 0.1945 , for the WB and GS, respectively] and secondary-inpatient case [$HI = 0.0954$ and 0.0484 , for the WB and GS, respectively], while they appear to be smaller (i.e., less pro-rich) in the case of primary-care [$HI = 0.0398$ and 0.0357 for the WB and GS, respectively], and secondary-outpatient case [$HI = 0.0789$ and 0.0413 for the WB and GS, respectively].

The above suggest that, for a given level of need, the better-off make greater use of, and receive in proportion more, health care than the “poor”. Results, which hold true for all levels of health care, clearly indicate significant contributions of “other” non-need factors (I_{NN}) in generating the total level of inequality in utilisation. As illustrated above, the observed non-zero values of HI index can be mechanically disentangled in terms of two parts, I_V and I_B , reflecting, respectively, two distinct channels of influence: the effects (on \hat{y}) operating through the inter-personal variations in the x_k ’s across income (the I_V), and the effects operating through the inter-group variations in the estimated parameters across income range (the I_B). Detailed results on each part of the decomposition are also presented in Table 4.1. Broadly interpreted, the I_V would tell us – for all x_k combined (or for each x_k in turn) – the extent to which the observed inequality (in \hat{y}) is due to socioeconomic inequalities, whereas, the I_B show – for a given level of need – the extent to which inequalities in \hat{y} are due to heterogeneity in behaviour (or practice) of the socioeconomic groups.

Figure 4.1: Horizontal Inequity Indices by Levels of Health Care and Regions, with 95% BTS Confidence Intervals



Overall, in the two regions and for all levels of health care, the estimated values of I_V index – i.e., the aggregation or the combined effects of all socio-economic variables – appear to be invariably significantly positive [$I_V > 0$ at $p < 0.05$], and account for a significant and sizeable contribution: between 63% and 70% of all measured HI . This suggests that the measured income-related inequity – defined as inequity not due to need – in the utilisation of the three levels of health care in the OPT are mainly driven by omnipresent socio-economic inequalities.

In effect, the (aggregate) positive contribution of I_V indicates that some (or all) of the significant socio-economic regressors included in our model do have a “pro-rich bias” in their distributions by income, and consequently, act to push the distribution of utilisation in a “pro-rich” direction. It may be of interest, therefore, to consider the (partial) contribution of each x_k in turn. However, before going through these contributions, it is worth bearing in mind their interpretations. As explained above, these are computed by the CI of several simulated-distributions through going from a distribution, one in which the relevant explanatory variable in whose the effect and distribution by income we are interested is neutralised (i.e., assumed be equally distributed across income by setting it

equal to its means), to one in which this variable is allowed to vary across income, keeping all else constant. Therefore, the contribution of the variable (x_k), as measured by the C_k and expressed in percentage terms of the overall measured inequity (the **HI**), may be interpreted as in (van Doorslaer and Koolman 2004): “income-related inequity in health care utilisation would, *ceteris paribus*, be X% lower, if variable x were equally distributed across income range – or if Δ in C_j due to x_k were equal to zero”.

Table 4.1 presents the partial contribution of six sources of inequalities attributed to distribution of socioeconomic variables³ and **Figure 4.2** (a-b) visualise the contribution of each of which to the total inequality. A closer look at these variables reveals that eventually all show positive and significant role in generating inequality in the utilisation of various levels of health care. However, the most influential variable is the (log of) household income: the partial contributions of income are always significant and sizeable – between 0.0141 in case of primary-care and 0.0961 in case of tertiary-care, but in all cases, they account for about 40% of the **HI** values – being significantly more important in the case of tertiary-care [circa 45 % of the **HI**]. Basically, this means that, *ceteris paribus*, the pro-rich inequity in the utilisation of each levels of health care would be about 40% [45% in the case of tertiary-care] lower than that observed, if income were distributed equally. Quite interestingly, with the exception of primary-care, the pro-rich contributions of income are found alone sufficient to counterbalance the pro-poor inequality from the distribution of need (note that the pro-rich contributions of income in these cases are fairly higher than that of need), but not sufficiently so to offset the “very pro-poor” distribution of need in the case of primary-care.

Despite the importance of income contribution in generating the measured inequity in the utilisation of all levels of care, the observed discrepancies between the **HI** and the income contribution to inequity suggest that other socioeconomic characteristics (factors) play also an important role in generating inequity. Indeed, apart from income itself, Table 4.2 shows that “other” important variables contributing to pro-rich distribution of care utilisation are education attainment, insurance coverage, activity and marital status, and urban residency. In all cases and in the two regions, **education** variables emerge to be invariably the second source of the generated inequity with a (partial) pro-rich contribution being in the range [0.0041; 0.0172]. The partial contributions of education to

³ Note that in the case of categorical (dummy) variables such as education, activity and marital status, this still represents the (*aggregated*) contribution of the respective variables in the category. The sub-decomposition showing each single variable’s contribution is not presented here in order to simplify the presentation and interpretation of the decomposition.

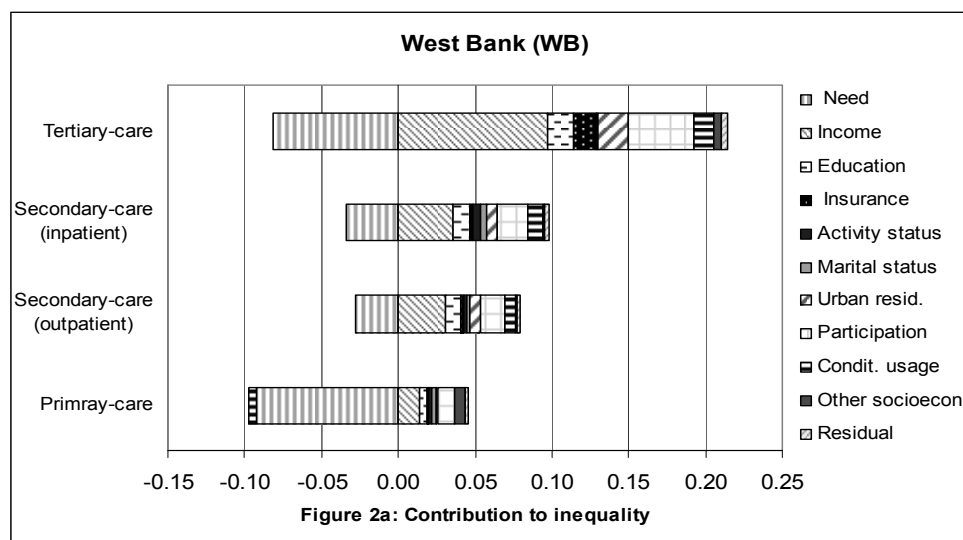
the **HI** appear to be relatively slightly more important in the case of primary- (circa 12%) and secondary-level (13 %) compared to tertiary-level (about 8%). Similarly, for almost all levels of health care and in the two regions, the dummy variable indicating any coverage by **insurance** appears to be a significantly positive contributor to the pro-rich distribution of care utilisation in the range [0.0004; 0.0152; $p < 0.05$]. However, the extent to which differences in insurance coverage by income contributes to inequity appears to vary significantly by the levels of care, but not between the two regions: they appear to be relatively a lot more important in the case of tertiary-care [7% of the **HI**] compared to secondary-care [circa 3% and 2% of the **HI** for inpatient and outpatient, respectively], whereas they appear to be less important contributor for primary-care [1% of the **HI**]. Yet, in the latter case, the pro-rich contribution of insurance appears only significant [at $p < 0.05$] in the case of WB, but not GS.

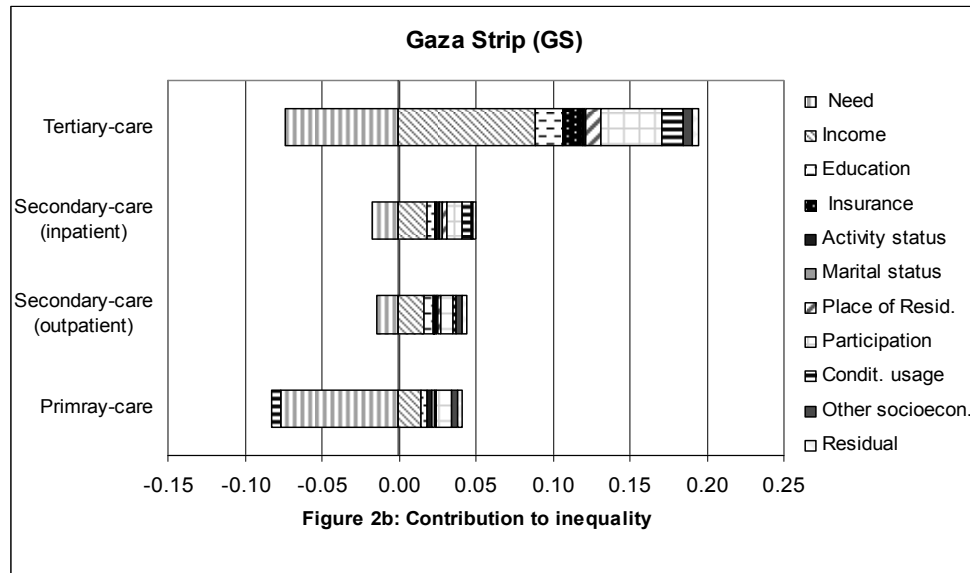
The partial contributions of **activity status** and **marital status** to the measured degree of inequity are generally more important than the insurance coverage per se. However, once again, some variations in the extent to which these two factors drive inequity in the utilisation of the three levels of care emerge: the relative contributions of activity and marital status are larger and significant [at $p < 0.05$] for the case of primary-care [circa 7% of the **HI**] and secondary-inpatient care [circa 5% and 4% for activity status and marital status, respectively] compared to secondary-outpatient [circa 2% of the **HI**], and both are only significant in the case WB at $p < 0.05$], whereas they appear to be trivial for tertiary-care [less than 0.5%], with the partial contribution of marital status being insignificant at $p < 0.05$. Lastly, the contributions of the dummy variable indicating (urban) **residency** appear to play an important role in generating the measured degree of inequity for the three levels of care and in the two regions. However, the differences in the relative importance of such factor between the two regions and across the levels of care are equally noteworthy: while there are some substantial differences between the two regions – for all levels of care, urban residency in the WB contribute roughly twice as much as the urban residency in GS – their partial contributions are particularly more important in the case of tertiary-care [10% and 5% of the **HI** in the WB and GS, respectively] and secondary-care [8.4% and 5.2% for outpatient case and 7% and 5% for inpatient-case in the WB and GS, respectively] compared to primary-care [where they only constitute about 2.4% and 1.4% of the **HI** in the WB and GS, respectively], and appear to be insignificant at $p < 0.05$ in the case of GS.

To sum up, the (aggregate) contribution to the measured pro-rich inequity, which is not due income per se constitute about 30% of the total measured inequity (**HI**) index

(being always slightly higher in the WB than in GS, and lower in the case of tertiary-level), suggesting that if these socioeconomic variables were distributed equally across income range, income-related inequity in the utilisation of health care (the *HI* index) would be, in general, about 30% lower than that observed. Also, it is worth noting that, although the pro-rich contributions of all these socioeconomic variables push further the “pro-poor” distribution from need in a “pro-rich” direction, this remains less than offset by the “very pro-poor” distribution of need in the case of primary-care, and therefore, income-related inequality in that case remains, overall, pro-poor.

Figure 4.2: Decomposition of Overall Income-Related Inequality and Horizontal Inequity by Levels of Health Care





Turning to the second part of our decomposition, results, which are also presented in Table 4.1 and **Figures 4.2** (a-b), clearly show that, in all the cases, the contributions to inequity attributed to heterogeneity in behaviour with respect to the SES of groups are far from being negligible: the I_B index, which emerges globally “pro-rich”, amounts to nearly 30% of the total measured inequity (the HI index). Generally, this means that, given need and other individual characteristics, SES groups do behave differently with respect to both the “initial” decision of seeking health care, and the conditional “subsequent” contacts, and that this behaviour has a “pro-rich bias”. Indeed, the (partial) contribution of heterogeneity in behaviour (the I_B index) to the total measured inequity is captured – separately from the distribution of explanatory variables by income – by the transition from a distribution where all SES subgroups, irrespective of their rank in the income distribution, are assumed to face the same parameter vectors (i.e., by imposing homogeneity in behaviour as embodied in parameters) to a distribution where these parameters are allowed to vary by income level. Therefore, the results on the estimated values of the I_B index, as measured by the systematic deviations of the specific-group parameters from the population-wide effect, clearly reveal, not only the prevalence of heterogeneity in practice for a given need, but also a “pro-rich” character of such practice. Hence, this may also be interpreted, as before: inequity in utilisation of health care would, *ceteris paribus*, be about 30% lower, if there were no heterogeneity in behaviour across income – or if the effects of both need and non-need factors did not vary by SES.

A further breakdown of the I_B into its respective components, as per Eq. (24), show that heterogeneity in practice associated with participation behaviour (the I_{PP}) is invariably responsible for most of the “additional” generated inequity by the I_B index: for the three levels of health care, the (partial) contribution of I_P is always significant and in a “pro-rich” direction, being in the range [0.010; 0.043 at $p < 0.05$], which amount to nearly 29% and 27% of the HI in case of primary-care, and about 20% of the HI index in all other cases. This suggests that for a given need and other individual characteristics, the wealthier groups are more likely to seek health care than the disadvantaged SES groups. The picture is somewhat different for heterogeneity in behaviour related to conditional usage part (the I_{CC}). Although, they appear to be fairly modest compared to the I_{PP} , the partial contributions of the I_{CC} index are significantly negative in the case of primary-care [−0.005 and −0.003 at $p < 0.05$], whereas they remain significantly positive for all other cases, within the range [0.022 and 0.0142 at $p < 0.05$]. This indicates that, given the decision of seeking health care treatment being made, the wealthier groups appear to be more users (or receive more) of both secondary and tertiary-care, whereas the disadvantaged SES groups appear to be more users (and receive more) of primary-care. However, the pro-poor contribution of the I_{CC} in the case of primary-care remains fairly small to counterbalance the pro-rich contribution of the I_{PP} . In addition, as soon as the “other” variables’ parameters are allowed to vary, the pro-poor contribution of the I_{CC} in the latter case is more than offset by a pro-rich contribution of heterogeneity in behaviour related to the “other” socioeconomic factors (the I_{SEC}). Indeed, the contributions of heterogeneity in behaviour linked to the “other” socioeconomic factors (the I_{SEC}) emerge without exception significantly positive, within the range [0.001; 0.012 at $p < 0.05$] and account for about 16% and 13% of the HI in the case of primary-care. But they appear much less in all other cases: between [8% and 1.3% of the HI]. Lastly, it is worth noting that the contribution of the residual terms (the I_R), which is defined as inequity due to unobserved heterogeneity, appear to be quite small compared with all other estimates: for all the cases we study, they are between [0.0002; 0.0040]. While the I_R captures the remaining discrepancies between the (observed) measured inequality in the utilisation distribution (the I_y) and those obtained from all the simulated-distributions of utilisation, the small values of the I_R indicate a considerable precision in the decomposition framework, as well as a high explanatory power of the regression model we used to get the parameter estimates.

5. Discussion

In this study we sought to extend the analysis of inequality in health care utilisation beyond the standard methods that have dominated the literature. A more elaborated decomposition approach that allows rectifying the commonly used standard decomposition methods has been attempted. The microsimulation-based decomposition was applied to various levels of health care proper to health care delivery in the two Palestinian regions: the WB and GS. Results presented in the paper shed lights on the degree of inequality associated with each level, as well as the factors underlying horizontal inequity.

Results revealed that socioeconomic inequalities were responsible for the majority of inequity in the utilisation of all levels of health care. Using microsimulation, the decomposition approach was able to identify the contribution of each socioeconomic variable integrated in the model. On the whole, income itself was found to be invariably the most important contributor to the pro-rich inequity. We know that income is more likely to have an impact on utilisation in countries where either financial or non-financial access costs differ by income levels (van Doorslaer, Wagstaff *et al.* 2000). In addition, the more unequally the income is distributed, the stronger its contribution to inequality in utilisation would be – as we also know from the results of international comparisons of equity in health (van Doorslaer, Masseria *et al.* 2006). The degree of income inequality in the two Palestinian regions were found in (Abu-Zaineh, Mataria *et al.* 2008) to be quite high. Perhaps equally noteworthy, is the variation in the contribution of income by levels of care, which was found to be large enough to counterbalance the pro-poor distribution of need for the costly care – secondary and tertiary-levels – compared to primary-level.

The decomposition analysis clearly confirmed the importance of heterogeneity in behaviour in generating inequity in health care utilisation. In effect, by estimating separately the model for each SES group, the microsimulation exercise was able to detect potential differences in utilisation behaviour amongst different subgroups of population. By so doing, we have shown that about 30% of horizontal inequity was due to heterogeneity in behaviours with respect to the rank in income distribution. As noted earlier, this feature of inequity could not be explicitly elucidated in previous research where the standard methods were applied. Interestingly, the breakdown of behaviour by participation and conditional usage demonstrated that, without exception, the probability

of participation was much more important than the conditional usage in generating the observed patterns of inequities. Also of note, the decomposition revealed almost similar patterns across levels of care regarding the direction of each part's contribution: the behaviour associated with both participation and conditional usage emerged to be in a pro-rich direction. Notable exceptions to this prevalent pro-rich behaviour were observed in the case of primary-level, where a pro-poor behaviour stems from the conditional usage part.

Generally interpreted, the results on heterogeneity in behaviours may signal differences in individuals' preferences, at a given need, lower-income groups may have lower preferences toward health than the better-off, and in the perceptions towards the benefits associated with treatment (Dormont, Grignonc *et al.* 2006). The method presented in this paper was capable of shedding light on this issue. Indeed, this method, which is in the spirit of the work by Oaxaca (1973), has been recently applied to assess the threat of aging on health expenditure (e.g., Dormont, Grignonc *et al.* 2006), and inequality in health care utilisation (e.g., Huber 2006) in France. In the latter paper, a microsimulation exercise was conducted to assess the effects of heterogeneity in behaviour on inequity in access to GP and SP care. The author has shown that about half of the horizontal inequity was due to heterogeneity in behaviour relative to the rank of individuals in the income distribution. Turning to our health care delivery system, the general findings on the importance of heterogeneity in behaviour are to some extent consistent with the simulations reported by others (Huber 2006), even if the extent to which heterogeneity in behaviour induce inequity in the two Palestinian regions appears to be comparatively lower than those reported for France. This indicates that the bulk of inequitable patterns of accessibility to health care among different socioeconomic groups in the OPT are due to the other explanatory factors. Nevertheless, some other important differences, which dramatically contrast the finding reported in the above study, arise: in the two Palestinian regions, heterogeneity in behaviour attributed to the second-stage of the decision process for the utilisation of all levels of health care, except primary-level, were shown to have a pro-rich character. It is, as noted earlier, as far as the supply side is concerned, such a pro-rich bias in the (subsequent) utilisation of both levels of secondary- and tertiary care may be related to specific characteristic of delivery system proper to these services. The opposite can be said with respect to access to primary-level: by far the pro-poor behaviour of (subsequent) utilisation is more influenced by providers' behaviour

than the patients; this may be interpreted as some sort of positive discrimination by the primary-level providers of lower socioeconomic groups.

Other potentially equity-relevant practices at the supply side may help explain why higher- and lower-income groups appear to be treated differently at the same level of need. First, secondary and tertiary care are provided through a limited number of hospitals (78 hospitals in the oPt), with significant differences in the utilisation patterns by providers exist: while hospitals run by the public sector (21 hospitals) are over-utilised (with bed occupancy rate of 80%), those run by the non-governmental sector (28 hospitals) are found under-utilised (HPU 2008a). These differences may reflect unequally inter-referral patterns or unequally access for patients belonging to different income groups: for a given need, better-off patients are referred to other (non-governmental) hospitals – where higher costs are incurred. Secondly, in the two Palestinian regions, there is a clear shortage in tertiary care services; consequently aboard-referrals are pursued for several cases (Hamdan, Defever *et al.* 2003). Given the fact that patients may not all be equally entitled, some of the inequitable patterns observed at the tertiary-level may be due to the (unequal) accessibility to aboard-referred services among different income groups. Thirdly, primary care has long been considered (NHP 1994) as the backbone of the Palestinian health care system, and a strategy towards the achievement of affordable health care for all of segments of the population was put in place (NSHP 1999a). Indeed, such practices in favour of the poor were partly reflected in our results, which demonstrated a pro-poor behaviour with respect to conditional usage of primary care.

6. Conclusion

This paper provides the first analysis of inequality of health care utilisation in the two parts of the oPt. Indeed, whereas equity objective was frequently incorporated in the subsequent National Health Plans of the oPt (NHP 1994; NSHP 1999a), there has been no evidence against which to evaluate the equity performance of the health system. Our analysis presents some indications about the sources of inequalities and alludes to a set of potential policies necessary to overcome them. Among the potential policy measures is the reduction in direct cost burden associated with the provision of these services. This might be achieved through gradually shifting from the regressive ex-post payments

structure towards a more equitable ex-ante mode of financing. Yet, it may be worthwhile, for policy makers in the oPt, to highlight the fact that the partial contributions of location of residence, which seems to reflect not only the disparities in the availability of health-care services, but also the geopolitical situation in the two parts of the oPt, do play a significant role in explaining the degree of inequity. Although, we need to point out that under the current conditions of "bantustanisation" the issue of accessibility to available services remains a political one, a critical need is there to identify appropriate policies capable of achieving a more balanced-geographical allocation of health care services. Inter-providers and inter-sectors interactions can also play an important role in reducing the adverse impact of such situation on health care use-inequity.

Lastly, our findings on the heterogeneity in behaviour, whilst corroborate earlier evidence (Huber 2006) on the importance of taking into account such axis for judging equity performance of health systems, are rather less important compared to the contribution by socioeconomic factors which appear to further reinforce the pro-rich inequitable trends in the case of the oPt. A crucial question is, of course, whether the "remaining" systematic differentials in behaviour are irrelevant from an equity point of view because they may merely reflect differences in individuals' genuine preferences and tastes vis-à-vis health-care, or whether these use patterns do reflect important preferential practices by providers, which may translate into the less well-off receiving lower standards of care than the better-off. Given the two-stage interpretation, our analysis was indeed able to signal potentially discriminatory practice by providers in favour of the poor for primary care and in favour of the rich for other cases. Nonetheless, our analysis was not capable of shedding light on whether and to what extent any inequities in health care usage, do translate into differences in health gains, and consequently, into inequities in health outcomes. Available evidence (Alter, Naylor *et al.* 1999) suggests that they often do. Indeed, it seems likely that the "excess-use" of the better-off would not merely reflect quicker accessibility, but also higher quality of treatment, and apparently, better health gains compared to poor. Future research may focus on developing, implementing and evaluating policy interventions to reduce the observed unequal distributions in the two parts of the oPt.

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Labour Force Instability and Employment Hardship in the Palestinian Territory

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Abstract: This paper analyses the determinants of labour force instability and employment hardships using individual data drawn from the Labour Survey of 2003. The principal objective is to determine the factors affecting the status of the participants in the labour force. More specifically, socio-economic characteristics of the individuals play a role in the hardships that they might face in the labour market. The statistical analysis shows significant differences in the labour force status that can be accounted for by differences in observed supply and demand side's characteristics. It was found that there are penalties of being a female, young, unmarried, and less educated, or reside in economically disadvantaged areas.

JEL classification: J21, J64

Keywords: Employment hardship, multinomial logistic functions, labours force.

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1. Introduction

Labour markets in the West Bank and Gaza witnessed drastic changes during the last two decades. These changes resulted from the sharp decline of Palestinians working in the Arab Countries, and Israel, and the latest Israeli repressive measures started since the third quarter of 2000. The end results of such changes were sharp increase in unemployment, poverty, and further marginalisation of marginalised groups.

Huge efforts and resources, by the PNA, donor countries and NGOs, were designated to reduce unemployment and poverty but with limited success so far. To meet the demands of the changing labour markets, it is important for human resources management to improve and enhance their knowledge of the labour force, including its components, and understanding the determinants of the status of labour force members. Such understanding would help in guiding efforts and resource to groups and areas that suffer the most. The objective of this paper is to address in the best way the following questions about the characters and correlates of labour force instability: Are there gender differences in the probability of being in the three different labour force categories (LFS hence after): full time employment, part time employment and unemployment? To what extent demographic factors (gender, age, and marital status) affect LFS? To what extent human capital factors (mainly education) affect LFS? To what extent geographical factors affect LFS? Finally, are there significant differences between rural and urban individuals in the determinants of labour force status?

The paper begins with a review of key indicators of the labour force in the Palestinian Territory. Section 3 summarizes the theoretical arguments and literature review. The model and data are presented in section 4, followed by the results in section 5. Conclusions are presented in section 6.

2. Palestinian labour force indicators

Considerable differences exist in the distribution of labour force in the Palestinian Territory based on socio-economic factors. The average labour force participation rate (LFPR) was 41.6% during the second quarter of 2008. The LFPR rose from 39% at the end of 1995 to a maximum of approximately 43.5% by September 2000. The rise in LFPR demonstrated improved confidence in obtaining work in the formal labour market i.e., work opportunities in the Palestinian labour market generally improved during the certain periods.

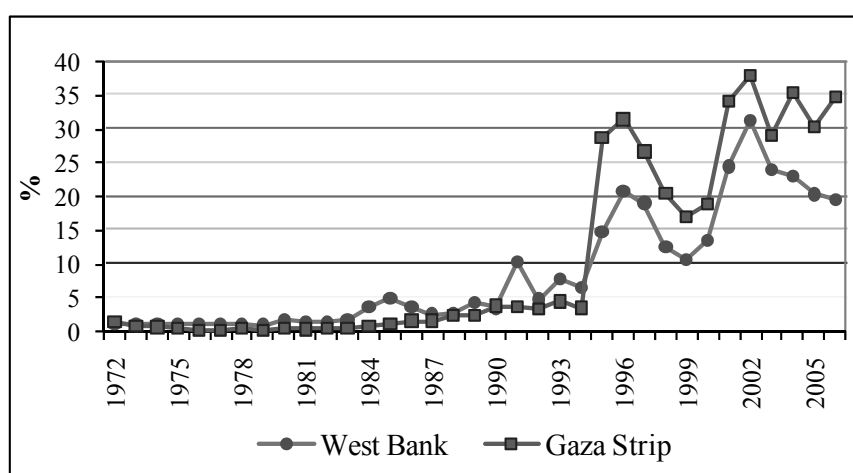
Female LFPR is extremely low, though it increased significantly, from its 1993 levels (6% in the West Bank and 2% in Gaza) up to 16% in the second quarter of 2008 compared to 66.3% among men. The factors attributed to the low female LFPR are numerous. The weakness of domestic employment growth compared to labour force growth is one explanation. Shaban argued that the fall in female participation rates is attributed to the lack of appropriate, particularly public, employment which has limited women's chances of participating more actively in the labour force (Shaban 1993). Others have argued that employed women are unreported since many work in the informal sector or conceal their involvement in the labour force (Long and Mohanna 1990). The nature of data collection also leads to low reporting by women on their participation in the labour market (Al-Qudsi and Shaban 1996).

The total number of employed individuals is 666 thousands in 2007 of 2006, of whom 84% are male employees. The private sector is the main employer counting for about 61.3% of employees, followed by the public sector (22.7%), then 10.8% working in Israel and the remaining working in NGOs and other sectors. Wage employees are about 60.4% of employees followed by 22.9% as self employed and the remaining are employers and unpaid family members during the second quarter of 2008. The share of self employed increased since the third quarter 2000 (18%) as a result of rising unemployment which forced some people to start their own businesses.

The Palestinian economy is characterised by its low absorptive capacity resulting in a chronic unemployment problem. The unemployment rate in the Palestinian Territories dropped significantly up to 11% at the end of the third quarter of 2000 but it jumped significantly to reach 25.8% at the end of the second quarter of 2008. The decline in unemployment was justified by three factors: the formation of the Palestinian National Authority which absorbed about 150 thousand employees at the end of the second quarter of 2008, and the real economic growth which reached around 9% until 1999, and the

labour exports to Israel which reached 145 thousand during the third quarter of 2000. The sharp increase of unemployment after 2000 was due mainly to the Israeli repressive measures aimed at quelling the Intifada. Unemployment rate fluctuates sharply depending on the severity of the Israel repressive measures and the political and economic stability in the West Bank and Gaza (see *Figure 1*).

Figure 1: Unemployment Rate in the West Bank and Gaza*



* Data on 2008 covers only the first six months of the year.

Source: Based on PCBS and Israeli Statistical Abstract.

Since 1995, unemployment in the Gaza Strip was higher than in the West Bank. The rate was 16.3% in the West bank and 45.5% in Gaza during the second quarter of 2008. This could be explained on the ground that severity of the Israeli siege on the Gaza Strip is greater. In addition, the economic base in the Gaza Strip is less developed and weaker in terms of employment absorption compared to that of the West Bank.

The burden of unemployment widely varies with social-economic indicators. Unemployment rate declines with education. The lowest unemployment rate was among graduates (who finished 13 years of schooling or more) 24.5% of whom were jobless, and the highest was among those who finished less than 7 years of schooling: 28.9% during the second quarter of 2008. Similarly, unemployment declines with age. The highest rate of unemployment was among the 15-19 years age group, which registered 37.4%, and declines to 14.2% for those aged 50 years or more. Geographically, in the West Bank

(Qaliqlyya) Governorate occupied first place, with unemployment standing at 23.2%. In the Gaza Strip, Der Albalah Governorate suffered the highest rate of unemployment (64.3%).

3. Theoretical arguments and literature review

Recently, researchers have turned their attention away from the traditional approach of labour market equilibrium where employees have the ability to allocated their time between hours worked and leisure time. Instead, their interest has focused on constraining factors, which may cause problems of employment adequacy (Vera-Toscano *et al.* 2005). This broader scope provides information on a variety of labour market outcomes, including unemployment, low income employment and involuntary part-time employment which are directly linked to issues of poverty and economic well-being, and each represents a different form of employment hardship.

Both labour supply and demand factors represent the structural determinants of employment success. Labour supply factors include both demographic and human capital characteristics of individuals within a local area. Alternatively, demand for labour is determined by the organisation of work specific to the local areas. Differences in human capital (i.e. education) of working individuals provide another potential source of differences in employment hardship. Low educational attainment of individuals can be expected to produce higher levels of employment hardship because of the increasing individual probability of inadequate employment (Lichter 1989), the aggregation of poorly educated people might be reflected in a real levels of underemployment. Given the association between education and earnings, costs of foregone income in leaving the labour market are likely to be substantially higher for more educated. In addition, educational attainment may be tapping other variables such as labour force attachment that would be significantly associated with paid employment. Similarly, the association between age and full-time employment mirrors an age-earnings profile with the likelihood of full-time employment peaking at about the age at which earnings are at their maximum. Also, effects of marital status are consistent with an argument that women's domestic responsibilities make it more difficult for them to combine these with paid employment, particularly full-time employment.

Although these structural characteristics should affect rural and urban employment adequacy in similar ways, it is likely that most will have weaker effects in rural areas

owing to the inefficiencies of matching people and jobs. Rural-urban differences in employment adequacy may simply reflect differences in demographic characteristics, such as age, sex, and marital status. If the rural workforce includes a disproportionate share of individuals in groups that typically experience high employment hardship, then rural-urban differences may be entirely compositional in origin (McLaughlin and Perman 1991).

In addition to the impact of individual characteristics “supply side” factors on individual’s employment success, there is an increasing concern about “demand side” issues that emphasize the quality and quantity of jobs available in rural-urban areas and are likely to influence the degree of employment hardship among rural-urban dwellers (Haynes *et al.* 2005).

Evidence showed that both labour supply and demand factors represent the structural determinants of employment success. Increasing age diminishes the chances of a downward move toward underemployment (Vera-Toscano 2002). In terms of family variables, there are significant variations by marital status: married individuals are less likely than non – married ones to get into underemployment, and more likely to get into the not in the labour force status, (Vera-Toscano 2002; Haynes *et al.* 2005). While having a preschool child, or having more children is associated with increased odds of not being employed, rather than being part-time (Haynes *et al.* 2005). Also, the higher the education level the less likely individuals are to make a transition into underemployment or out of the labour force, (Leppel 1957; Vera-Toscano 2002; Omar 1999; Haynes *et al.* 2005). Women are significantly more likely to move into underemployment or out of the labour force than their male counterparts (Vera-Toscano 2002). Married women are more likely to be employed part-time than single or divorced and separated women (Haynes *et al.* 2005). Young, poorly educated are more likely to suffer employment hardship (Hsueh and Tienda 1994; Lichter 1989). Location is another factor to affect employment hardship; it has been shown that rural areas are more likely to provide low paying, part-time, seasonal and non-unionised jobs (McLaughlin and Perman 1991).

4. Model and data

In the statistical literature, models for analysing categorical dependent variables belong to the family of models known as generalised linear mixed models (GLMMs). The specific GLMM for a dependent variable with three or more categories is the multinomial logit random effects model. Labour force status-LFS is modelled as multinomial choice model with three choices (1, 0,-1) representing (unemployed, fully employed, underemployed). A multinomial logistic regression technique is the relevant tool to use. The expression used to predict the probability of each dependent variable outcome is as follows:

$$p_i(Y_i = m) = e^{(z_{im})} / 1 + \sum_{j=1}^{m-1} e^{(z_{ij})}$$

Where z_{im} is the linear function used to predict outcomes M, m is the number of dependent variable categories. The estimates of the model yield two coefficients: the odds- ratio, and the log odds ratio. Three types of statistical tests will be used to test the reliability of the estimates: The pseudo R-square, the likelihood ratio test, and the Wald test.

The regression equation will be as follows:

$$LFS = B_0 + B_1SEX + B_2AGE + B_3ACT + B_4WBGS + B_5DIST + B_6LOC + B_7SCH + B_8SOC + U_i$$

LFS is the labour force status of respondent i, **SEX** is the sex for the respondents, **AGE** is the age of respondent, **ACT** is the sector in which the respondents work –if employed, **WBGS** is the region of the respondents, **DIST** is the district of the respondents, **LOC** is the locality type for the respondents, **SCH** years of schooling, **SOC** is marital status and U_i is the error term.

Sex of the respondents is represented of two dummy variables: male, and female (as a base category). The second category of explanatory variable captures respondent characteristics, including three respondents characteristics: age, marital status, and years of schooling, the age represented by eight dummies: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, and 50 and over (as a base category), marital status is represented by three

dummies: never married, ever married, and other (as a base category) and the years of schooling is represented in five dummies: no education, primary education, secondary education, high education, and college & university education (as a base category), the third category of explanatory variable relate to the economic activities of the respondents and is represented by six: agriculture, manufacturing, construction, commerce-hotels, transport-storage, and services (as a base category), the fourth category is the region of the respondents and is represented by two dummies: West bank, and Gaza strip (as a base category), the fifth category is the district of the respondents and is represented in 16 dummies variable: Jenin, Tubas, Tulkarem, Nablus, Qalqilya, Salfeet, Ramallah, Jericho, Jerusalem, Bethlehem, Hebron, North Gaza, Deir Al Balah, Khanyounis, and Rafah (as a base category), the sixth category is the locality type of the respondents and is represented by three dummies: urban, rural, and camp (as a base category).

Data used in this study came from the Labour Force Survey conducted by the Palestinian Central Bureau of Statistics in 2003, which includes about 90237 individual observations.¹ Individuals are classified into one of the following categories:

1. Unemployed: individuals who are not working but are actively looking for work.
2. Underemployed: part-time workers or individuals who are working less than full-time hours (36 hours per week).
3. Employed: individuals who are working full-time hours (more than 36 hours per week)

Tables in the statistical annex describe the status of labour force in the Palestinian Territory.

¹ The year 2003 was selected due to data availability.

5. Results

5.1. West Bank and Gaza

Overall Performance of the model

The pseudo R-square measures indicate that the model performs fairly well. The Nagelkerke R-square value will usually be the most relevant to report. It corrects the Cox and snell value so that it can theoretically achieve a value of 1. These pseudo R-squared confound goodness of fit and explanatory power of the model (See Table 1).²

Table 1: Pseudo R-Square

Cox and Snell	.250
Nagelkerke	.316
McFadden	.184

The most interesting result here is that the chi- square value of 228315.311 with 72 degrees of freedom is highly significant, this means that the null hypothesis that all effects of the independent variable are zero can be rejected (See Table 2).

Table 2: Model Fitting Information

Model	Log Likelihood	Chi-Square	df	Sig.
Intercept Only	644213.951			
Final	415898.640	228315.311	72	.000

The likelihood ratio test evaluates the overall relationship between an independent variable and the dependent variable. There are statistically significant relationships between the independent variables (years of schooling, sex, age, district, locality type,

² **Cox and Snell's R-Square** is an attempt to imitate the interpretation of multiple R-Square based on the likelihood, but its maximum can be (and usually is) less than 1.0, making it difficult to interpret.

Nagelkerke's R-Square is a further modification of the Cox and Snell coefficient to assure that it can vary from 0 to 1. That is, Nagelkerke's R^2 divides Cox and Snell's R^2 by its maximum in order to achieve a measure that ranges from 0 to 1. Therefore Nagelkerke's R^2 will normally be higher than the Cox and Snell measure but will tend to run lower than the corresponding OLS R^2 .

marital status, and industry group.) and the dependent variable (labour force status) (See Table 3).

Table 3: Likelihood Ratio Tests

Effect	Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	415898.640	.000	0	.
Year of schooling	442987.473	27088.833	8	.000
Locality	416742.398	843.758	4	.000
Age	423226.603	7327.963	14	.000
Activity	546201.095	130302.456	10	.000
Marital status	419877.884	3979.244	4	.000
District	457244.520	41345.880	28	.000
Sex	423520.947	7622.307	2	.000

Multicollinearity in the multinomial logistic regression is detected by examining the standard errors for the b coefficient. A standard error larger than 2 indicates numerical problem, such as multicollinearity. None of the independent variables in this analysis had a standard error larger than 2 (See Tables 4 and 5).

Estimated Odds Ratio and Log Odds Ratio

Tables 4 and 5 present the estimated odds and log odds ratio. The main results can be summarised as follows:

Gender: males are 3.452 times more likely than females to be underemployed rather than to be full employed and are 1.726 times more likely than female to be unemployed rather than to be fully employed.

Education: individuals who had primary education are more likely to be underemployed (1.169 times more) rather than to be full employed. The effect is strongest for primary education and weakest for college education or higher. Also, the respondents with primary education are more likely to be unemployed (4.459 times more) rather than to be fully employed when compared to respondents with college or university education. While the respondents who had no education are less likely to be underemployed or

unemployed when compared to those with college education. This result could be explained based on the fact that uneducated people have more options in the labour market in terms of availability of unskilled jobs, low paying jobs mainly in agriculture and service sectors.

Locality: the respondents who live in urban areas are less likely to be underemployed or unemployed rather than to be fully employed when compared to those living in rural areas and refugee camps.

Age: the age group 20-24 years are more likely (3.078 times more) to be underemployed rather than to be fully employment. The effect is strongest in the age group 20-24 and weakest for 45-49 years of age. Also, individuals in the age group 20-24 were more likely (2.586 times more) to be unemployed rather than to be fully employed. The effect is strongest for those in the age group 20-24 and weakest for those older than 49 years old.

Activity: for the employed respondents, those who work in construction are more likely (4.481) to be underemployed rather than to be fully employed. The effect is strongest for the respondent that work in construction and weakest for the respondents that work in commerce –hotels. Also, respondents who work in commerce and hotels are .057 times less likely than the respondents who work in services to be unemployed rather than to be fully employed.

Social Status: married respondents are less likely (0.701 times less) to be underemployed rather than to be fully employed. The effect is strongest for married respondents and weakest for the never married. Also, never married respondents are more likely (1.831 times more) to be unemployed rather than to be full employed. The effect is strongest for the never married and weakest for married respondents.

Region: respondents living in West Bank are less likely (0.417 times less) to be underemployed rather than to be fully employed when compared to those living in Gaza strip to be underemployed rather than to be full employed. Also, those who live in West Bank are 0.897 times less likely than the respondents who live in Gaza strip to be unemployed rather than to be fully employed.

Districts: respondents living in the following areas: Jenin, Tubas, Tulkarem, Nablus, Qalqilya, Salfit, Ramallah, Jerusalem, Bethlehem, and Gaza city are more likely to be underemployed rather than to be fully employed. The effect is strongest for those living in Qalqilya and weakest for respondents living in Gaza city. For example, respondents living in Qalqilya are 19.638 times more likely than those living in Rafah to be underemployed rather than to be fully employed. Also, respondents living in the following areas: Jenin, Tubas, Tulkarem, Nablus, Qalqilya, Salfit, Deer al-Balah and Khanyonis are more likely to be unemployed rather than to be fully employed. The effect is strongest for those living in Jenin and weakest for the respondents living in Deer al-balah. The results indicate that the respondents living in Jenin are 2.293 times more likely than those living in Rafah to be unemployed rather than to be fully employed. While respondents living in the following areas: Ramallah, Jericho, Jerusalem, Bethlehem, North Gaza, and Gaza City are less likely to be unemployment rather than to be fully employed. For example, respondents living in Jericho are .263 times less likely than those living in Rafah to be unemployed rather than to be fully employed.

Table 4: West Bank and Gaza: Parameter estimates for the log odds of underemployed respondents relative to fully employed: The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E (B) indicate the odds- ratio.

Independent Variables	β 's coefficient	Standard error	E(β)	Wald test	Significance
Sex					
Male	1.239	.020	3.452	3983.320	.000
Female	0(b)	.	.	.	.
Age					
15-19	.783	.017	2.189	560.685	.000
20-24	1.124	.018	3.078	1641.617	.000
25-29	1.047	.025	2.849	1720.870	.000
30-34	1.065	.024	2.901	1914.824	.000
35-39	1.061	.025	2.890	1844.633	.000
40-44	.823	.026	2.277	1009.148	.000
45-49	.756	.028	2.130	714.049	.000
50 and over	0(b)	.	.	.	.
Years of schooling					
No education	-.436	.049	.647	80.482	.001
Primary education	.156	.018	1.169	78.260	.000

Secondary education	.041	.016	1.042	6.665	.000
High education	-.051	.049	.950	11.170	.010
College and university	0(b)	.018	.	.	.
District					
Jenin	2.574	.026	13.114	9892.833	.000
Tubas	2.237	.037	9.363	3717.661	.000
Tulkarem	1.798	.030	6.037	3551.987	.000
Nablus	2.197	.025	8.995	7595.992	.000
Qalqilya	2.977	.029	19.638	10843.266	.000
Salfit	2.849	.032	17.278	8170.836	.000
Ramallah	1.459	.027	4.300	2857.686	.000
Jericho	-.674	.092	.510	53.796	.000
Jerusalem	.297	.031	1.346	93.752	.000
Bethlehem	.204	.040	1.226	26.453	.000
Hebron	0(b)	.	.	.	.
North Gaza	-.155	.041	.857	14.586	.000
Gaza city	.044	.036	1.045	1.545	.214
Deer al balah	-.553	.046	.575	143.919	.000
Khan younis	-.079	.040	.924	3.888	.049
Rafah	0(b)	.	.	.	.
Locality type					
Urban	-.481	.016	.618	814.213	.000
Rural	-.438	.015	.645	573.205	.000
Camp	0(b)	.	.	.	.
Region					
West bank	-.876	.039	.417	507.669	.000
Gaza strip	0(b)	.	.	.	.
Marital status					
Never married	-.230	.053	.795	19.021	.000
Ever married	-.355	.051	.701	48.182	.000
Other	0(b)	.	.	.	.
Activity					
Agriculture	1.072	.018	2.921	3457.939	.000
Manufacturing	.834	.019	2.302	1918.633	.000
Construction	1.500	.017	4.481	7412.163	.000
Commerce-hotels and rest.	.466	.018	1.594	692.228	.000
Transport, storage and comm.	.818	.023	2.266	1252.614	.000
Services	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

Table 5: West Bank and Gaza: Parameter estimates for the log odds of unemployed respondents relative to fully employed: The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E(B) indicate the odds- ratio.

Independent Variables	β 's coefficient	Standard error	E(β)	Wald test	Significance
Sex					
Male	.546	.009	1.726	3420.227	.000
Female	0(b)	.	.	.	.
Age					
15-19	.804	.017	2.234	2206.788	.000
20-24	.950	.014	2.586	4417.769	.000
25-29	.535	.013	1.707	1617.158	.000
30-34	.454	.013	1.575	1208.596	.000
35-39	.483	.013	1.621	1306.040	.000
40-44	.436	.014	1.547	974.393	.000
45-49	.324	.016	1.382	432.061	.000
50 and over	0(b)	.	.	.	.
Years of schooling					
No education	0.987	.026	2.684	1407.296	.000
Primary education	1.495	.010	4.459	20910.382	.000
Secondary education	1.253	.009	3.501	17650.447	.000
High education	0.941	.009	2.562	11761.813	.000
College and university	0(b)	.	.	.	.
District					
Jenin	.830	.013	2.293	3906.770	.000
Tubas	.406	.025	1.500	256.327	.000
Tulkarem	.212	.016	1.236	168.216	.000
Nablus	.251	.013	1.285	394.525	.000
Qalqilya	.521	.020	1.684	653.298	.000
Salfit	.699	.024	2.012	855.346	.000
Ramallah	-.211	.014	.810	238.513	.000
Jericho	-1.337	.038	.263	1232.163	.000
Jerusalem	-.340	.012	.712	790.180	.000
Bethlehem	-.504	.017	.604	889.991	.000
Hebron	0(b)	.	.	.	.
North Gaza	-.006	.019	.994	.106	.745
Gaza city	-.061	.017	.941	12.250	.000
Deer al balah	.030	.020	1.030	2.361	.124
Khan younis	.170	.019	1.186	84.216	.000
Rafah	0(b)	.	.	.	.

Locality type					
Urban	-.070	.009	.933	55.866	.000
Rural	-.010	.011	.990	.830	.362
Camp	0(b)	.	.	.	.
Region					
West bank	-.109	.018	.897	38.498	.000
Gaza strip	0(b)	.	.	.	.
Marital status					
Never married	.605	.031	1.831	388.734	.000
Ever married	.058	.030	1.060	3.790	.052
Other	0(b)	.	.	.	.
Activity					
Agriculture	-2.003	.011	.135	30622.613	.000
Manufacturing	-1.945	.011	.143	28963.980	.000
Construction	-.874	.009	.417	9695.884	.000
Commerce-hotels and restaurant	-2.862	.013	.057	46564.750	.000
Transport, storage and communication	-2.568	.022	.077	14052.905	.000
Services	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

5.2. West Bank model results:

Table 6: Pseudo R-Square (a)

Cox and Snell	.276
Nagelkerke	.347
McFadden	.203

The pseudo R-square measures confound goodness of fit and explanatory power of the model.

Table 7: Model Fitting Information (a)

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	466093.379			
Final	292366.246	173727.133	62	.000

The chi-square value of 173727.133 with 62 df is highly significant, this means that the null hypothesis that all effects of the independent variable are zero can be rejected.

Table 8: Likelihood Ratio Tests(b)

Effect	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	292366.246(a)	.000	0	.
yerschol2	314269.314	21903.068	8	.000
id07	292920.796	554.551	4	.000
age1	299186.321	6820.075	14	.000
industry	386015.399	93649.154	10	.000
marital	294275.128	1908.882	4	.000
wbgs	292366.246(a)	.000	0	.
id06	331169.241	38802.995	20	.000
sex	302724.043	10357.797	2	.000

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

The likelihood ratio test shows that there are statistically significant relationships between the independent variable (years of schooling, sex, age at last birthday, district, locality type, marital status, and industry group, and the dependent variable (labour force status).

Table 9: West Bank: Parameter estimates for the log odds of underemployed respondents relative to fully employed:

The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E (B) indicate the odds- ratio.

Independent Variables	β 's coefficient	Standard error	E(β)	Wald test	Significance
Sex					
Male	1.437	.022	4.209	4442.286	.000
Female	0(b)	.	.	.	.
Age					
15-19	.596	.038	1.816	250.540	.000
20-24	1.165	.031	3.206	1398.425	.000
25-29	1.099	.028	3.000	1493.254	.000

Age					
30-34	1.111	.027	3.038	1668.422	.000
35-39	1.109	.028	3.032	1611.933	.000
40-44	.908	.029	2.480	1002.131	.000
45-49	.859	.031	2.361	762.194	.000
50 and over	0(b)	.	.	.	.
Years of schooling					
No education	-.555	.060	.574	85.756	.000
Primary education	.219	.021	1.245	114.078	.000
Secondary education	.226	.018	1.254	158.453	.000
High education	.124	.017	1.132	52.112	.000
College and university	0(b)	.	.	.	.
District					
Jenin	2.506	.026	12.262	9346.892	.000
Tubas	2.164	.037	8.707	3450.435	.000
Tulkarm	1.731	.030	5.647	3264.852	.000
Nablus	2.157	.025	8.646	7274.077	.000
Qalqilia	2.928	.029	18.690	10441.319	.000
Salfit	2.794	.032	16.352	7812.360	.000
Ramallah	1.446	.027	4.245	2795.095	.000
Jericho	-.751	.092	.472	66.728	.000
Jerusalem	.268	.031	1.307	75.746	.000
Bethlehem	.194	.040	1.215	24.117	.000
Hebron	0(b)	.	.	.	.
Locality type					
Urban	-.510	.023	.601	505.571	.000
Rural	-.423	.023	.655	351.337	.000
Camp	0(b)	.	.	.	.
Marital status					
Never married	-.103	.061	.902	2.833	.092
Ever married	-.165	.059	.847	7.741	.005
Other	0(b)	.	.	.	.
Industry group					
Agriculture	1.008	.020	2.740	2455.786	.000
Manufacturing	.587	.021	1.799	748.059	.000
Construction	1.140	.020	3.127	3257.157	.000
Commerce-hotels and restaurant	.334	.020	1.397	287.241	.000
Transport, storage and communication services	.586	.026	1.796	510.027	.000
	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

Table 10: West Bank: Parameter estimates for the log odds of unemployed respondents relative to fully employed:
The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E(B) indicate the odds- ratio

Independent Variables	β 's coefficient	Standard error	E(β)	Wald test	Significance
sex					
Male	.864	.011	2.373	5695.238	.000
Female	0(b)	.	.	.	.
age					
15-19	.909	.022	2.482	1765.326	.000
20-24	1.215	.019	3.371	4243.118	.000
25-29	.763	.018	2.145	1880.291	.000
30-34	.701	.017	2.016	1692.037	.000
35-39	.703	.017	2.020	1618.234	.000
40-44	.564	.018	1.758	955.200	.000
45-49	.443	.020	1.557	478.319	.000
50 and over	0(b)	.	.	.	.
Years of schooling					
No education	1.188	.034	3.282	1240.090	.000
Primary education	1.692	.014	5.430	15567.898	.000
Secondary education	1.485	.012	4.415	15079.277	.000
High education	1.216	.011	3.373	11619.162	.000
College and university	0(b)	.	.	.	.
District					
Jenin	.767	.014	2.153	3208.724	.000
Tubas	.311	.026	1.365	146.788	.000
Tulkarm	.162	.017	1.176	93.926	.000
Nablus	.225	.013	1.252	300.333	.000
Qalqilia	.469	.021	1.599	514.329	.000
Salfit	.656	.024	1.928	737.863	.000
Ramallah	-.212	.014	.809	229.284	.000
Jericho	-1.484	.039	.227	1482.774	.000
Jerusalem	-.402	.012	.669	1047.779	.000
Bethlehem	-.518	.017	.595	904.552	.000
Hebron	0(b)	.	.	.	.
Locality type					
Urban	-.186	.015	.830	144.693	.000
Rural	-.141	.016	.869	81.199	.000
Camp	0(b)	.	.	.	.

Marital status					
Never married	.632	.039	1.882	263.351	.000
Ever married	.164	.038	1.178	18.479	.000
Other	0(b)	.	.	.	.
Industry group					
Agriculture	-1.835	.014	.160	17964.227	.000
Manufacturing	-2.320	.015	.098	25561.654	.000
Construction	-1.174	.011	.309	11339.631	.000
Commerce-hotels and restaurant	-3.037	.016	.048	35979.659	.000
Transport, storage and communication	-2.773	.027	.062	10885.697	.000
services	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

5.3. Gaza Strip Results:

Table 11: Pseudo R-Square

Cox and Snell	0.209
Nagelkerke	0.270
McFadden	0.157

The pseudo R-square measures indicate that the model confound goodness of fit and explanatory power of the model.

Table 12: Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	171577			
Final	111949.4	59627.68	50	0

The chi- square value of 59627.681 with 50 df is highly significant which implies that the null hypothesis that all effects of the independent variable are zero can be rejected.

Table 13: Likelihood Ratio Tests

Effect	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	111949.4	0	0	.
yerschol2	119835.6	7886.237	8	0
id07	112592.2	642.8202	4	8.4E-138
age1	113440.5	1491.161	14	0
Industry	155571	43621.66	10	0
Marital status	114264.3	2314.91	4	0
Wbgs	111949.4	0	0	.
id06	112988.5	1039.121	8	5.4E-219
sex	112107.9	158.5276	2	3.77E-35

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

The likelihood ratio test shows that there are statistically significant relationships between the independent variable (years of schooling, sex, age at last birthday, district, locality type, marital status, and industry group, and the dependent variable (labour force status).

Table 14: Gaza Strip: Parameter estimates for the log odds of underemployed respondents relative to fully employed:

The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E (B) indicate the odds- ratio.

Independent variables	β 's coefficient	Standard error	E(β)	Wald test	Significance
sex					
Male	.335	.047	1.399	50.229	.000
Female	0(b)	.	.	.	.
age					
15-19	1.350	.072	3.858	350.940	.000
20-24	1.062	.063	2.891	280.831	.000
25-29	.953	.058	2.593	274.355	.000
30-34	1.030	.057	2.800	327.959	.000
35-39	.947	.058	2.577	269.717	.000
40-44	.480	.063	1.616	57.898	.000
45-49	.302	.072	1.352	17.761	.000
50 and over	0(b)	.	.	.	.

Years of schooling					
No education	-.029	.085	.971	.119	.730
Primary education	.001	.036	1.001	.001	.980
Secondary education	-.518	.037	.596	192.107	.000
High education	-.528	.035	.590	228.123	.000
College and university	0(b)	.	.	.	.
District					
North Gaza	-.376	.042	.687	80.596	.000
Gaza city	-.220	.038	.803	32.858	.000
Deer al balah	-.720	.047	.487	233.005	.000
Khan younis	-.153	.041	.858	13.915	.000
Rafah	0(b)	.	.	.	.
Locality type					
Urban	-.486	.026	.615	342.575	.000
Rural	-1.301	.072	.272	329.412	.000
Camp	0(b)	.	.	.	.
Marital status					
Never married	-.659	.103	.517	41.017	.000
Ever married	-1.076	.099	.341	118.435	.000
Other	0(b)	.	.	.	.
Industry group					
Agriculture	1.325	.044	3.762	927.084	.000
Manufacturing	1.578	.043	4.844	1348.019	.000
Construction	2.539	.037	12.669	4639.958	.000
Commerce-hotels and restaurant	.706	.043	2.025	265.360	.000
Transport, storage and communication	1.481	.053	4.398	793.002	.000
services	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

Table 15: Gaza Strip: Parameter estimates for the log odds of unemployed respondents relative to fully employed:

The values under B's coefficient indicate log odds ratio associated with each effect, while the values under E(B) indicate the odds- ratio

Independent variables	β's coefficient	Standard error	E(β)	Wald test	Significance
sex					
Male	-.163	.017	.850	93.758	.000
Female	0(b)	.	.	.	.
age					
15-19	.579	.029	1.785	393.849	.000
20-24	.523	.023	1.687	522.214	.000
25-29	.197	.021	1.218	90.643	.000
30-34	.091	.021	1.095	19.124	.000
35-39	.137	.021	1.147	41.958	.000
40-44	.255	.022	1.290	131.065	.000
45-49	.130	.025	1.139	27.683	.000
50 and over	0(b)	.	.	.	.
Years of schooling					
No education	.888	.043	2.431	422.472	.000
Primary education	1.335	.017	3.802	6454.973	.000
Secondary education	.967	.016	2.631	3770.424	.000
High education	.617	.014	1.853	1901.093	.000
College and university	0(b)	.	.	.	.
District					
North Gaza	-.155	.019	.856	63.868	.000
Gaza city	-.272	.018	.762	234.352	.000
Deer al balah	-.051	.019	.951	6.766	.009
Khan younis	.091	.019	1.095	23.296	.000
Rafah	0(b)	.	.	.	.
Locality type					
Urban	.057	.012	1.059	23.694	.000
Rural	.165	.026	1.179	40.423	.000
Camp	0(b)	.	.	.	.
Marital status					
Never married	.596	.051	1.814	136.680	.000
Ever married	-.110	.050	.896	4.902	.027
Other	0(b)	.	.	.	.

Industry group					
Agriculture	-2.598	.023	.074	12725.957	.000
Manufacturing	-1.228	.019	.293	4114.233	.000
Construction	-.393	.015	.675	645.741	.000
Commerce-hotels and restaurant	-2.652	.024	.071	12043.638	.000
Transport, storage and communication	-2.334	.038	.097	3811.468	.000
services	0(b)	.	.	.	.

a. The reference category is: Full Employment.

b. This parameter is set to zero because it is redundant.

6. Summary and policy implication

The results are broadly consistent with human capital arguments. Increased education implies increased chances of full-time employment, while having a low level of education is associated with increased odds of not being employed, rather than being part-time. Similarly, the association between age and full-time employment mirrors an age-earnings profile with the likelihood of full-time employment peaking at about the age at which earnings are at their maximum. In terms of family variables, there are significant variations by marital status, with singles being significantly less likely than married or divorced to be in full-time employment. Geographical factors have great influence on employment hardships. Living in the West Bank or in urban areas increases the chances of full-time employment. Our findings seem to corroborate the apparently more precarious position of rural individuals in terms of labour market instability, which should be taken into account when evaluating employment hardship in rural areas.

Policy implication of the strong link between education and better chances of being fully employed is that the policy makers should concentrate on increasing education levels especially to females. This will increase female labour force participation rates and their employment stability.

The main conclusion of this paper may prove useful to the policy makers in designing labour market policies, initiatives and programs appropriate for improving the status of marginalised groups. This valid mainly for job creation programs, on the job training, that should give priority to females, young, uneducated people, those living in rural areas since they suffer employment hardship reflecting social stratification of people and places.

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Descriptive Statistics

**Table A. 1: Distribution of Labour Force in 2003
by Gender and Region %**

Sex	Female	Male
Full Employment	78.6	66.3
Underemployment	2.8	6.9
Unemployment	18.6	26.9
Total	100	100
Region	West Bank	Gaza Strip
Full Employment	68.7	67.1
Underemployment	7.5	3.6
Unemployment	23.8	29.2
Total	100	100

Source: PCBS Labour Force Survey 2003, Unpublished Data

**Table A. 2: Distribution of Labour Force in 2003
by Marital Status and locality %**

Marital Status	Singles	Married	Others
Full Employment	57.8	72.9	80.4
Underemployment	5.8	6.5	4.4
Unemployment	36.4	20.6	15.3
Total	100	100	100
Locality type	Refugee Camp	Rural	Urban
Full Employment	63.4	65.9	70.6
Underemployment	5.6	8.9	5.0
Unemployment	30.9	25.2	24.4
Total	100	100	100

Source: PCBS Labour Force Survey 2003, Unpublished Data

**Table A. 3: Distribution of Labour Force in 2003
by Age Group %**

Age	15-19	20-24	25-29	30-34	35-39	40-44	5-49	50 +
Full Employment	55.0	56.1	66.9	70.7	70.4	72.8	75.1	81.3
Underemployment	5.5	5.9	6.8	7.6	7.6	6.2	5.7	3.0
Unemployment	39.6	37.9	26.2	21.8	22.1	21.0	19.2	15.7
Total	100	100	100	100	100	100	100	100

Source: PCBS Labour Force Survey 2003, Unpublished Data

**Table A. 4: Distribution of Labour Force in 2003
by Years of education %**

Years of Schooling	0 Years	1-6 Years	7-9 Years	10-12 Years	13+ Years
Full Employment	84.9	64.4	63.9	66.3	75.5
Underemployment	2.7	6.8	7.2	6.9	4.5
Unemployment	12.3	28.8	28.9	26.8	19.9
Total	100	100	100	100	100

Source: PCBS Labour Force Survey 2003, Unpublished Data

**Table A. 5: Distribution of Labour Force in 2003
by Governorate in the West Bank and Gaza Strip (%)**

District	Jenin	Tubas	Tulkarem	Nablus
Full Employment	50.9	62.6	66.8	72.6
Underemployment	13.6	12.5	8.3	14.1
Unemployment	35.5	24.9	24.9	13.3
Total	100	100	100	100
District	Ramallah	Jericho	Jerusalem	Bethlehem
Full Employment	72.2	89.2	75.2	78.9
Underemployment	7.3	1.3	2.5	2.7
Unemployment	20.4	9.4	22.3	18.4
Total	100	100	100	100
District	Qalqilia	Salfeet	Hebron	North Gaza
Full Employment	55.5	55.5	75.8	68.5
Underemployment	21.8	21.3	1.9	3.7
Unemployment	22.7	23.2	22.3	27.7
Total	100	100	100	100
District	Gaza City	Deir Al- balah	Khan Younis	Rafah
Full Employment	68.1	66.1	64.7	67.7
Underemployment	4.1	2.5	3.2	4.0
Unemployment	27.8	31.5	32.1	28.3
Total	100	100	100	100

Source: PCBS Labour Force Survey 2003, Unpublished Data

Section 5: Main Conclusions

Policy Statement on the Palestinian Economic Situation^{*}

Margarita Olivera^{}*

1. Some stylized facts on Palestine economy

After the Six-Day War (1967) and until the beginning of the nineties, Palestine has been exposed to the direct Israeli military, economic and administrative control. Since the 2000 Second Intifada and after the 2006 Hamas' electoral victory, the military conflict was worsened and has sharpened the movement restrictions both of goods and of people, strongly affecting the Palestine economy.

Analysing the macroeconomic outlook of today Palestine is hardly possible without referring to the Paris Protocol, which has been part since 1994 of the legal and institutional backbone defining the rules of the game applicable to the domestic economy, as well as to its relationships with Israel. It has become evident from the beginning that the power relations crystallized in the Paris Protocol were asymmetric, sharpening the Palestinian dependence on the Israel trade regime and currency.

After the Protocol was set up, there is a spurious custom union, where the foreign trade policy is out of control of the Palestinian government and is unilaterally determined by Israel. Indeed, the *de jure* customs union designed by the Paris Protocol between Palestine and Israel is unilaterally rather than bilaterally determined and some of its key

^{*} The present chapter is a conclusive summary drawing on the main policy implications discussed in the papers, which are included in this book, as well as on discussions which emerged in the two-day conference on Palestine's economy held on 15-16 June 2010 in Pavia.

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provisions – in particular those regarding movement and access of goods and labour – are legally vague and subject to the interpretation of the Israeli Government.

Looking at **trade** issues, Palestine appears as a province of Israel, however goods' movements are not free and markets are not perfectly integrated due to Israeli restrictions. Palestine does not have a complete economic sovereignty and the commercial asymmetries between the two countries are very large. Palestinians depend greatly on Israel for trade flows. Imports from Israel accounted for 73% of total Palestinian imports in 2003, while Israeli imports from Palestine accounted for only 0.8% of their total imports in 2004. Besides, because of Israel's control of all access routes to Palestine, Palestinian trade with third countries depends thoroughly on Israel.

As regards **currency** issues, the Palestinian Monetary Authority (PMA), although in charge of regulating domestic financial institutions, cannot run an independent monetary policy due to the lack of a Palestinian currency, so there is also a *de facto* monetary union. The Protocol recognized that the New Israeli Shekel (NIS) was to be "one of the circulating currencies in the Areas, and legally serve as means of payment for all purposes including official transactions". Such sanctioned use of the NIS as a means of exchange in the Territory results in a lack of a Palestinian national currency, giving rise to the so-called "currency issue". Thus, Palestine suffers a sizeable loss of seignorage revenue. Moreover, this currency issue seriously constrains the functions of the PMA and prevents any possibility of exchange rate policies.

As well as the trade and currency issues, the Palestinian dependence on the Israeli economy is present in all major economic areas, from fiscal issues to the dependence on Israeli labour markets.

As regards the **workforce**, labour flows from Palestine to Israel have been one of the main sources of growth in the Palestinian economy, and these flows have also been highly variable depending on the security situation and the decisions of the Government of Israel, with a consequent sharp reduction after the beginning of the Second Intifada. The percentage of Palestinian employees working in Israel fell from an average of 16% in 1994-99 to 7% in 2003-2005. By 2007 a man in the West Bank only had a 77% chance of being employed compared to 1999. Based on the level determined by the share of "Israeli" employment in total WBG employment in 1999-2000, the World Bank calculates that the number of Palestinian workers in Israel in 2005 could have been

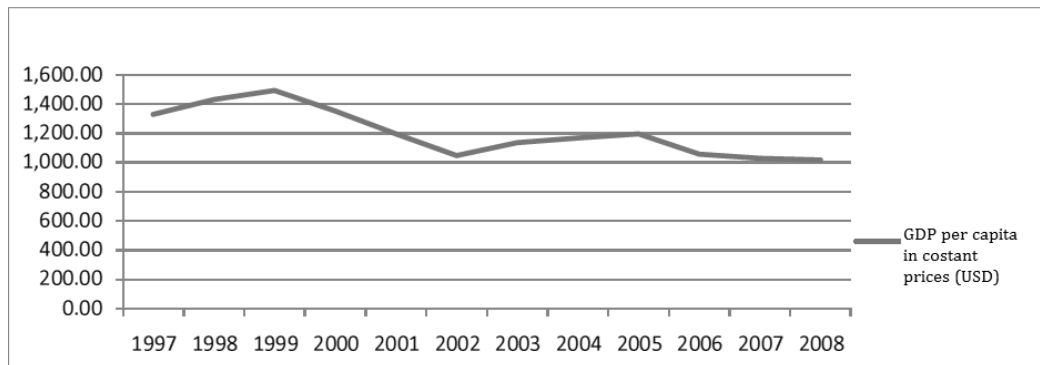
165,000 and their earnings USD 922 million. Instead, because of permit restrictions, employment was only 63,000 and earnings USD 351 million.

The **fiscal** dependence is among the main problems for the Palestinian Authority (PA). The tax system is largely absent; most indirect tax revenues are collected by Israel and subsequently transferred to the Palestinian National Authority. Despite its contravening the Oslo Accords, Israel has repeatedly used the withholding of these revenues as a political tool to place pressure on, or to “punish”, the PA, as during the Second Intifada and after the Hamas electoral victory. In addition, government revenues fluctuate with the cycles of the conflict – during the growth years of 1995 to 1999, revenues in USD almost doubled, going from USD 510 million (15.8% of GDP) to USD 942 million (22.6% of GDP). By December 2000 – three months into the Intifada – revenues had declined by 50% relative to the pre-Intifada level.

2. The economic consequences of dependence and de-development

2.1. Economic growth volatility and de-industrialisation

Economic growth in the West Bank and Gaza has remained extremely volatile, highly vulnerable to the swings of the Israeli economy, and prone to dire shocks related to security measures such as closures, trees uprooting, arable land grabbing, restricted access to water and the like. As a result of this state of affairs, the Palestinian growth performance has been altogether rather weak in the last 15 years, and its main driver has been the evolution of the political situation. Real GDP, according to 2009 PMA data, grew at over 5% per year in the interim period between 1995 and 2000, then fell abruptly by nearly 22% in the years of the Second Intifada, it rebounded again at a yearly rate exceeding 11% from 2003 to 2005, and declined once more by almost 8% between 2006 and 2007, following Hamas electoral victory and the ensuing tensions.

Figure 1: Economic Growth (1997-2008).

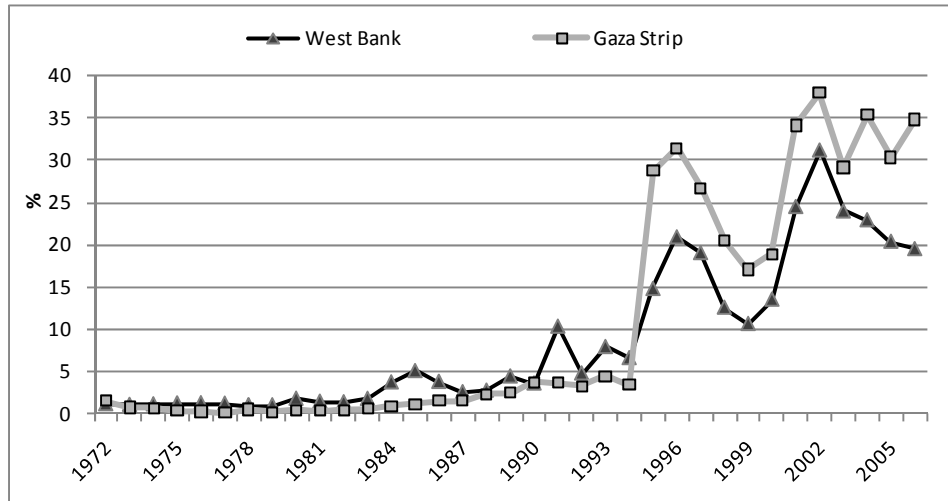
Source: World Bank, Palestinian central Bureau of Statistics (PCBS).

Considering the structural dynamics in Palestinian Territory, the situation on the ground has been characterised by a gradually de-industrialising process. GDP decomposition by sector of activity shows a clear declining trend for the contributions of agriculture and manufacturing, from 1995, counterbalanced by a rapid surge in the shares pertaining to the public sector and, to a lower extent, services.

2.2. Unemployment

Labour markets in the West Bank and Gaza witnessed drastic changes during the last two decades. These changes have arisen as a result of the great decline of Palestinians working in the Arab Countries and Israel, mainly related with the sharpening of the Israeli repressive measures during 2000. In 2009, according to PCBS, the unemployment rate has averaged to 20% of total labour force, being higher in the Gaza Strip than in West Bank. The main consequences of such changes were the increase in unemployment and poverty.

Along with the contraction of the employment share of the industrial sector and the expansion of a large informal sector, open unemployment grew extraordinarily. Due to the lack of formal employment opportunities, an increasing proportion of Palestinians are involved in low-productive agricultural and service activities, petty trade in particular.

Figure 2: Unemployment Rate in the West Bank and Gaza.

Source: PCBS and Israeli Statistical Abstract.

2.3. Low investment

Among the main problems of Palestine, the lack of investment is a fundamental one but, contrary to the traditional view, the investment constraint of the economy has nothing to do with saving-constraints. There is general agreement among economists that most of investment problems depend on tight direct and indirect hindrances to Palestinian business activities. Israeli security controls and check-point procedures have made transaction costs extremely high. Moreover, closures and movement restrictions have fragmented the domestic Palestinian economy and forced Palestinian firms into small local enclaves. Both facts have wide economic repercussions. First, high transaction costs reduce the competitiveness of existing activities. Second, the impossibility to access to large markets depresses entrepreneurs' animal spirits, further curbs investments and causes economic stagnation by constraining effective demand for Palestinian goods.

Therefore, these restrictions create an investment climate which depresses entrepreneurship because they increase uncertainty and, therefore, risks. The uncertainty about market access and market fragmentation prevent investors from seeing forward linkages; this situations keeps investments low and it is the real cause of Palestinian stagnation. So the lack of investments reflects not the lack of funds but the absence of profitable investment opportunities.

3. Traditional economic theory vs heterodox economic approach

Several authors have described the effects of such an economic environment in Palestine. The choice of the underlying theoretical approach bears fundamental consequences for the outcomes simulation exercises and its policy implications; that is why it would be advisable to link very closely the choice of a certain conceptual apparatus with the specific macroeconomic situation on the ground (if not even carrying out “robustness checks” under alternative macro-closures).

In 2001, Astrup and Dessus (2001) have implemented a neoclassical CGE model on Palestine, which is used by the World Bank (henceforth, WB). In addition, UNCTAD (2009) has developed a complex macro framework to simulate the effects of a wide range of institutional and political changes. However, the framework applied by Astrup and Dessus does not show a “good fit” with the specificities of the Palestinian context. In particular, the WB CGE model on Palestine is a standard real-side neoclassical CGE model that describes a price-driven economy in which relative prices freely adjust to ensure macroeconomic equilibrium, productive factors are fully utilised and savings determine investments. Indeed, these models overlook by construction the “currency issue”, the prominence of the financial sector and the related complications concerning the financial account of the balance of payment. Moreover, the supply-driven in-built logic of the WB CGE implicitly deprives precautionary savings of any relevance; a choice that raises some questions in a conflict-torn economy. So they fail to give due relevance both to the demand side of the problem and to the role of investments. Actually, some theoretical implications of the WB CGE model seem to be at odd with data and empirical evidence on Palestine.

Given these intrinsic limits of the neoclassical framework, in the three-year research project we have also studied the alternatives to the traditional approach in order to better understand the Palestine reality. By so doing, we suggested the need to integrate the financial sector into the analysis, and argued that a structuralist approach may be more attuned to study the evolution of the macroeconomic and financial outlook in Palestine.

4. Main conclusions and policy implications

The result of imposing a neoliberal framework and a reality of war and occupation has led Palestine to more dependence and de-development rather than development. In that sense, some policy considerations are in order:

Regarding the energy issue, a better use of Gaza's own gas resources in the Gaza power plant for electricity should be made and new agreements with other commercial partners, as Jordan or Egypt, should enhance the imports of electricity, in order to reduce the energetic dependence of Israel.

To the extent possible, PA should also begin building independent infrastructure, while donors should encourage Palestinian economic and institutional autonomy, as well as they could help supporting joint ventures with Palestinian firms.

In addition, an effort on establishing economic borders and collecting the PA's own trade tariffs and taxes on imports should be pursued.

Regarding international trade, contrary to the WB recommendations, following the structuralist CGE analysis, one of the main policy conclusions implies that trade liberalisation is not a priority for Palestine.

In economic policy-making, PA should always pursue options to strengthen economic autonomy. The PA should go on implementing the Palestinian Reform Development Plan 2008-2010, which underlines the importance of high quality institutions in order to achieve social and economic development goals. The PA is quite recent and consequently is still too weak to constitute a well-functioning, solid and complete institutional environment. However the PA had a positive performance in institution-building and in delivering of public services since 1993. So, Palestine has to strengthen the existing institutions and has to build new ones in order to provide support for the market economy.

Anyway, no amount of well-functioning institutions will lead to economic growth in the absence of a guaranteed access to markets. Indeed, among the main drawbacks to achieve a sustainable growth path is the lack of investment, which is mainly due to the high transaction costs, which reduce the expected profitability and increase the Palestinian market fragmentation. Only a substantial progress in the Israeli-Palestinian peace process could help reduce market fragmentation and transaction costs, stimulating capital accumulation.

A peace process could entail much more important, long-lasting changes, by influencing the adjustments process of entrepreneurs' expectations. Lower transaction

costs and lower market fragmentation allow Palestinian firms to better provide domestic and foreign markets. Expected sale dynamics and animal spirits are scaled up; if sufficiently strong, these facts could persistently raise long-run capital formation, and the Palestinian low-growth trap may simply disappear. Mounting investments from confident entrepreneurs may sustain both economic activity and capacity use, which in turn stimulate entrepreneurs' confidence and their propensity to invest.

However, it is difficult to have a permanent improvement in the investment climate without the creation of an independent Palestinian State with complete economic sovereignty; a state which may give larger market stability. An independent state can also negotiate trade agreements with its neighbours and run independent fiscal, monetary and also industrial policies. The Asian growth experiences show how important these aspects are in order to achieve strong and sustained economic growth. A Palestinian State may be a necessary, though not sufficient condition to achieve higher growth rates of capital accumulation and to move out of the low growth trend, characterised by poor investment opportunities.

Last but not least, an independent Palestine State should enhance the social and cultural development process which goes beyond market relationships and economic growth.

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It is well-known that Palestinian growth and development have been blocked by what happened as a consequence of the Second Intifada and 2006 Hamas electoral victory, namely the tough restrictions on both people and goods movements. However, there is much which remains to be understood.

In this different scenario, is the Paris Protocol the good framework to restart some process of Palestinian development? Provided that trade relations with Israel are inevitably less flourishing than they were before 2000, is a policy of unconditional trade openness towards the rest of the world the best response? What are the concrete constraints preventing those Palestinian entrepreneurs who could make investments from doing so? And what are the social and fiscal implications associated with the last, tremendously complicated years? Who is suffering the most? These are the issues this book tries to shed some light on. The last ten years dramatically changed the course of Palestinian development, and economists and other social scientists may use this book as a tool to start thinking about the challenge of giving a chance to a people who strongly deserve it.

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