Growth-Employment Dynamics in the Palestinian Economy: 
Recent Evidence and Future Prospects

Dr. Mehrene Larudee  
Senior Researcher (2011-12, 2014)  
Palestine Economic Policy Research Institute  
Ramallah, Palestine

currently Visiting Scholar and Lecturer, Economics Department  
Thompson Hall  
200 Hicks Way  
University of Massachusetts  
Amherst, MA 01003  
mlarudee@econs.umass.edu

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Abstract

Aid-driven rapid Palestinian GDP growth in 2006-2010 was accompanied by an increase in employment of more than 100,000, yet the 24 percent unemployment rate persisted. So who benefited from growth? This paper isolates wage/employment changes in the Palestinian economy, excluding work in Israel and the settlements, to answer this question. It finds that increased employment, especially income-earning employment, was the main benefit to labor, while the average real wage and labor’s income share fell. West Bank employment responded to output growth at roughly world average rates, and wage employment grew faster, especially in the private sector. The Gaza Strip, under siege and bombardment, suffered deep recession and then barely recovered, yet employment also grew rapidly. Although the Palestinian economy exhibits some features seen as typical of MENA labor markets – high labor force growth, low female LFPR, and high youth unemployment – dynamic West Bank private sector wage employment differs from the standard “weak private, oversize public sector” MENA characterization. The Gaza Strip fits MENA characteristics more closely, but largely for unique reasons: the punishing Israeli blockade and bombardment. In both regions, constraints on output are far more problematic than the employment generation process itself. World Bank and other studies find that Israeli occupation practices sharply constrict output even in the West Bank. Kerry’s plan to reduce unemployment is somewhat overoptimistic, and appears to assume continued employment in Israel and settlements.

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1. Introduction

As a prelude to the Palestinian-Israeli peace negotiations beginning in 2013, US Secretary of State John Kerry announced an economic plan for Palestine, and described the most optimistic scenario considered by consultants: that within three years there would be $4 billion in new investment, a 50 percent jump in GDP, and a reduction in the unemployment rate from 21 percent to 8 percent, along with possibly a 40 percent increase in the median wage (Kerry 2013). Many Palestinians were deeply skeptical. While their skepticism had strong political aspects, this paper deals mainly with the economic aspects – with the macroeconomic and labor market dynamics that, among other things, shed light on whether such a sudden and enormous reduction in the unemployment rate was economically feasible.

The broader question that this paper explores is this: In the Palestinian economy, based on the experience of rapid growth from 2006 to 2010, how does output growth affect employment, wages, and other income flows? Who benefits? In that five-year period, during which real per capita GDP in the whole Palestinian economy grew at an average rate of 4.3 percent annually, who enjoyed gains, and how large were these gains? In particular, why did the overall unemployment rate not fall, despite rapid growth? Analyzing the consequences of that growth helps illuminate what benefits can be expected to flow in the future from such growth.

This study finds that employment gains were substantial, but real wage gains were minimal, so that the bulk of the benefits flowed to non-labor incomes. However, it also concludes that this growth period showed that the Palestinian economy, and especially its private sector, is perfectly capable of generating employment when output increases. So the main constraints on Palestinian job growth are not on the translation of output into employment or wage growth, but rather constraints on economic activity itself. While these constraints have constricted output in Gaza much more dramatically than in the West Bank, they are a considerable obstacle in both regions, as documented in World Bank and other studies.

A corollary is that despite the superficial resemblance between Palestinian labor markets and prevailing characterizations of Arab labor markets and MENA economies in recent ILO and World Bank studies, in the Palestinian economy the functioning of labor markets is not the main limitation on growth. The main limitations have been, and continue to be, the constraints imposed by the Israeli occupation, on imports, exports, construction, manufacturing, water, and land use, extensively documented, analyzed, and quantified in World Bank (2009, 2013b) and ARIJ/MNE (2011). Nevertheless, a secondary finding is that labor’s share of the benefits of growth was limited, and that a more equal distribution of the benefits of growth between labor and non-labor incomes might also increase the extent to which a temporary surge in output feeds into longer-term growth.

The 2006-2010 growth period is also of interest because several Palestinian commentators skeptically described the growth as a ‘myth’, as ‘jobless’, or as limited in its benefits to the general population (Abunimah 2011; UNCTAD 2011; Bahour 2010; Riyahi c2010). In fact, this growth was not literally jobless: employment rose by 108,000 from 2006 to 2010, of which 84,000 was in the West Bank and the rest in the Gaza Strip. However, in common parlance one meaning of ‘jobless growth’ has come to be that the unemployment rate has not fallen, despite growth in real GDP and possibly in employment, and this is the sense in which

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1 Kerry did not specify whether output and wage projections were real or nominal, and the report apparently has not been published.

2 To be precise, “‘jobless’” with double quotes within single quotes, because the source (UNCTAD 2011) has been edited to put the term in quotation marks, although this was not so in the original version.
these commentators meant it (see UNCTAD 2011). In the Palestinian economy, the unemployment rate for the whole economy stood at almost precisely the same level in 2010 as in 2006, that is, 23.7 percent by the standard definition, and 30 percent by the relaxed definition of the International Labor Organization, which includes discouraged workers (PCBS 2011a; UNCTAD 2011).

This was in part because the labor force grew at an annual average rate during 2006-2010 of 4.0 percent, one of the fastest growth rates in the world, so that employment growth, which also averaged 4.0 percent annually, only barely kept pace. The unemployment rate did fall in the West Bank from 18.8 percent to 17.2 percent, but only because of increased Palestinian employment in Israel and the settlements, not because of growth in demand for labor in the Palestinian economy per se. In fact, without significant growth in the number of Palestinians employed in Israel and the settlements the unemployment rate – both in the Palestinian territory as a whole (West Bank and Gaza Strip), and in the West Bank alone – would actually have risen over this period, assuming that jobs lost in Israel and the settlements would not have been replaced by other jobs in the West Bank. In the Gaza Strip, the unemployment rate rose from 34.8 percent in 2006 to a peak of 40.6 percent in 2008 and then partly retreated to 37.8 percent by 2010 – the second highest unemployment rate in the world in this period, after Kosovo (World Bank 2013a).

This paper discusses two contrasting themes. One is ways in which the Palestinian economy has features that appear similar to those observed by ILO and World Bank researchers in other developing countries, or in the countries of the Middle East and North Africa (MENA), or both. The other is the constraints and circumstances that distinguish the Palestinian economy in important ways from other economies. What happened during 2006-2010, and what might happen with a future increase in aid or investment funds, can only be understood if both these dynamics are taken into account. This point is illustrated in section 7 in a critique of the projections of the Kerry plan. Noting the contrasts and similarities between the behavior of the West Bank economy and that of the Gaza Strip economy during this period helps to illuminate both the similarities with MENA countries and the unique features of the Palestinian economy.

2. Sources and methods

All the data on Palestinian employment, wages, real wages, output, real output, and other variables are from Palestinian Central Bureau of Statistics published data, or from the author’s calculations using such data, except as otherwise expressly indicated. The reports most used were PCBS Labor Force Survey annual data, based on a quarterly household survey in which each household is surveyed during quarters 1, 2, 5, and 6 of a six-quarter period, and then drops out of the survey. Note that all those 15 years and older are considered to be of working age (while in some countries only those 16 to 64 are included); and unlike in many countries, the definition of “employed” includes those who work unpaid in a family business.

An important contribution of the present study is that it excises employment of Palestinians in Israel and the settlements from the rest of the employment data in order to analyze the workings of the Palestinian economy alone. The method for calculating employment in the Palestinian economy alone, excluding those employed in Israel and the settlements – as well as several subcategories of that employment – using only the published data tables is explained in detail in Larudee (2012, Appendix 2). The same work gives a much more detailed and extensive account of some of the issues in this paper, as well as others not covered here.
Real GDP data are all expressed by the PCBS in constant dollars of 2004. Real GDP is from PCBS National Accounts data, but real wages were calculated using LFS nominal wage data, with CPI data from PCBS publications on prices. The PCBS Economic Survey was used to find the employee compensation share of value added, but because of the changing categories in which the data were presented, the change is reported for 2007-2010.

The output elasticities of employment are all calculated as arc elasticities using 2006 and 2010 values of real GDP and employment, not by fitting a curve statistically, as advocated by Kapsos (2005). There is substantial volatility of elasticities with either method, depending on the beginning and ending dates chosen; but arc elasticities are more transparent to the reader.

3. Output growth

From 2006 to 2010, in the whole Palestinian economy real per capita GDP grew at an average annual rate of 4.3 percent, nearly as fast as the average (4.6 percent) of the Lower Middle Income group of countries to which Palestine belongs (World Bank 2013a). But this masked a sharp contrast between the West Bank and the besieged Gaza Strip (see Figure 1). In the West Bank, real per capita GDP in constant US dollars of 2004 rose dramatically from $1460 in 2006 to $1867 in 2010, an increase of 27.9 percent, for an average annual growth rate of 6.3 percent. The same measure in the Gaza Strip fell catastrophically, from $997 in 2006 to $807 in 2008, before rising in 2010 back to $980, nearly its previous level, for a net change over the period of -1.7 percent. Even in the growing West Bank, by 2010 real per capita GDP had not yet even climbed back to its 1999 level before the losses of the Second Intifada.

This wide divergence between the two regions was made possible by the geographical separation between the two regions, together with Israel’s draconian blockade that for much of the period sharply curtailed imports into the Gaza Strip of inputs into construction, manufacturing, and other sectors. Constrictions on exports and the fishing industry made matters worse. Another contributing factor has been Israel’s non-implementation of the Agreement on Movement and Access of November 2005, negotiated with US facilitation, which was supposed to arrange for regular transport of goods between the West Bank and Gaza Strip through an agreed corridor. Of course, an additional causal factor has been episodes of major destructive Israeli aerial bombardment and ground attacks on the Gaza Strip, particularly in 2006, 2008-9, 2012, and 2014 – doing substantial damage to business enterprises, residential housing, schools, hospitals, and public buildings, and interrupting economic activity. The cost of the blockade to the Gazan economy in 2010 alone has been estimated at $1.9 billion in current US dollars of 2010, or about one-fourth of total Palestinian GDP in that year; and the annual cost rises each year with the continued blockade and the cumulation of the loss in growth that would otherwise have taken place (ARIJ/MNE 2011). Even this understates the loss to the economy, because GDP measures only flows of economic activity, but not depreciation or damage to capital stocks. A better measure would be Net Domestic Product, which should count damage to structures and equipment, but this measure is not calculated by the PCBS.

As for the Palestinian economy as a whole, the data on growth of economic activity are dominated by what happens in the West Bank, whose real GDP was by 2010 nearly three times as large as in the Gaza Strip. The ratio is only a little less than that today. This is both because the West Bank population was, and is, larger than that of the Gaza Strip (about 1.6 times as large in 2010), and West Bank per capita income is larger than in Gaza (about 1.8 times in 2010). The product of these – the ratio of West Bank to Gaza Strip GDP – was therefore about 2.9 in 2010.
So despite the collapse in Gaza, over the 2006-2010 period real per capita GDP in the whole Palestinian economy grew 18.4 percent, an average annual rate of 4.3 percent, as noted above.  

4. Employment growth

4.1 Overview

The distribution of the benefits of growth can be measured in part by gains in employment and wages. This section reviews employment gains; section 5 reviews wage changes. Employment in the whole Palestinian Territory grew substantially, from 636,000 in 2006 to 744,000 in 2010, an increase of 108,000, or 17.0 percent. Of the total added employment, however, about 23,600 represented additional West Bank Palestinians working in Israel and the settlements (Larudee 2012). Since a central purpose of this paper is to analyze the ability of the Palestinian economy to generate employment, and demand for Palestinians to work in Israel and the settlements is exogenous to that, it is useful to restate employment growth in terms of the Palestinian economy alone, excluding those working in Israel and the settlements both in 2006 and 2010. (In fact, several different measures of employment growth can be used; see Appendix 1 for a detailed discussion.) Table 1 shows levels and growth rates of labor force and employment, and Figure 2 shows cumulative growth in output and employment by region.

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Employment in the West Bank Palestinian economy alone grew by about 60,400, from 412,400 in 2006 to 472,800 in 2010, an increase of 14.6 percent. Meanwhile, employment in the Gaza Strip economy rose by 24,000, from 163,000 to 193,000, a percentage increase of almost the same size (14.2 percent).

In the West Bank the labor force grew somewhat more slowly (15.7 percent) than did total employment of West Bank Palestinians (18.0 percent), but more rapidly than employment in the West Bank Palestinian economy, an expression used here to mean that employment of West Bank Palestinians in Israel and the settlements is not counted, either in 2006 or 2010.

Figure 3 shows the same information expressed in average annual growth rates. Total employment grew an average of 4.3 percent per year, but employment in producing Palestinian GDP contributed only 3.1 percentage points of that—not enough to employ all of the newly added members of the labor force each year. Growth in Palestinian employment in Israel and the settlements contributed the remaining 1.2 percentage points, or a little more than one-fourth of new employment.  

Without the new employment in Israel and the settlements, the unemployment

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3 Note the astute observation by Chenery and Ahluwalia (1974) that the growth rate of GDP can be written as a weighted average of growth rates in income quintiles, where the weight on each quintile is its share of GDP; hence as a welfare measure the GDP growth rate more heavily weights the income of higher income groups (Todaro and Smith 2003).

4 If for the West Bank alone we use a 2006 employment base of 412,400, excluding Palestinians working in Israel and the settlements, then the increase in employment in the Palestinian economy was 60,400 or 14.6 percent. If instead we use a 2006 employment base of 467,000, including those Palestinians working in Israel and the settlements, then the 60,400 increase in employment was 12.9 percent, and the increase in employment in Israel and the settlements was 23,600 or 5.1 percent, for total West Bank employment growth of 84,000, or 18.0 percent.

Similarly, if for the Palestinian Territory as a whole we use a 2006 employment base of 581,400, excluding Palestinians working in Israel and the settlements, then employment growth in
rate in the West Bank and the Palestinian Territory would actually have risen. That is why, despite creation of new employment in the West Bank from 2006 through 2010 at a more or less typical rate for a growing economy, with 0.37 percent growth in employment producing West Bank GDP for every 1.00 percent annual growth in real GDP, the unemployment rate barely fell.

The second reason why the Gaza Strip’s already painfully high unemployment rate rose, while the West Bank’s fell, is that the Gaza Strip labor force was growing more rapidly, 4.7 percent per year. This was far more rapid than the average annual growth in employment (3.4 percent) in Gaza (see Figure 3). Gaza’s unemployment rate, already 34.8 percent in 2006, climbed to 40.6 percent in 2008 with 121,000 unemployed, and then by 2010 fell slightly to 37.8 percent, while 118,000 persons were still unemployed (Larudee 2012). Thus the growth rates of employment were similar in the two regions, with labor force growth outstripping employment generated by the Palestinian economy; the difference was that in the West Bank, the exogenous increase in employment in Israel and the settlements supplemented employment growth in producing Palestinian GDP.

4.2 Work in Israel and the settlements

Employment of Palestinians in Israel and the settlements has historically played a powerful role in the Palestinian economy. In the period 1974-1993, on average 40 percent of employed Gazans worked in Israel, as did 32 percent of employed West Bank Palestinians (Farsakh 2012). Reported unemployment rates in the Palestinian territory during that period were extremely low, in the range from 0.7 to 3.7 percent; and while these may not be entirely accurate, there is evidence that labor markets in the Palestinian territories were tight, including a sharp decline in the wage differential between wages for Palestinians working in Israel and for those working in the Palestinian territories (Farsakh 2012).

When, at the beginning of the First Intifada in 1987-88, Israel reduced the opportunities for Palestinian employment in Israel and in the settlements, the Palestinian economy suffered badly. After the creation of the Palestinian Authority and the PCBS in 1994 (and possibly more accurate reporting of unemployment data), the Palestinian economy once again gradually became heavily dependent on employment in Israel and the settlements; among Palestinian workers resident in the oPt, those employed in Israel and the settlements made up 23 percent of the total at their peak in 1999. In that year 30.2 percent of West Bank males and 17.6 percent of Gaza Strip males were working in Israel and the settlements, and the unemployment rate in the West Bank was 9.5 percent, and in the Gaza Strip was 16.9 percent (PCBS 2011a, Tables 1 and 20).

The start of the Second Intifada in 2000 and the closures and curfews imposed by Israel in the West Bank brought the share down again, to 8 percent by 2004 (PCBS 2011a, Table 20). In the Gaza Strip, contributing to the high unemployment rate was the sharp cutoff in 2001 of work in Israel and the settlements, reducing the share of male employment in this category from 14.6 percent in 2000 to 2.1 percent in 2001 (female employment in Israel and the settlements had

\[ \text{the Palestinian economy was 84,400 or 14.4 percent. If instead we use a 2006 employment base of 636,000, including those Palestinians working in Israel and the settlements, then the 84,400 growth in employment in the Palestinian economy was an increase of 13.3 percent, and the 23,600 employment increase in Israel and the settlements was 3.7 percent, for total employment growth of 17.0 percent. See Appendix 1.} \]

\[ ^{5}\text{Taking account of both male and female employment, in 1999, 25.9 percent of employed West Bank Palestinians worked in Israel and the settlements, and 15.7 percent of employed Gaza Strip Palestinians did.} \]
never been high). Evacuation of the settlements in Gaza in 2005 and the Israeli response to the rise of Hamas to power in 2006 in Gaza then put an end to all employment of Gazan residents in Israel or the settlements.

Historically, the unemployment rate has tended to rise with a falling share of employed Palestinians working in Israel and the settlements, and to fall when such employment once again has opened up; and this explains part of the rise in unemployment rates during the Second Intifada. Another major part is explained by the invasion and the associated curfews imposed for many months, forcing people to stay in their own homes and making most economic activity impossible. These events, and increased restrictions on movement and access, as well as a sharp decline in employment in Israel and the settlements, had caused unemployment rates to rise by 2006 to twice the level of 1999 – to 18.8 percent in the West Bank and 34.7 percent in the Gaza Strip, among the highest in the world. Simultaneously, the labor force was growing faster than most countries of the world, due to the very high birth rate during the First Intifada.

During 2006-2010 there was a smaller surge in the number of Palestinians working in Israel and the settlements than in the 1990s or 1980s, together with an exceptional increase in the average daily wage in such employment. Among all employed persons in the West Bank, the share who worked in Israel and the settlements grew from 11.7 percent in 2006 to 14.2 percent in 2010. Among employed West Bank males, 14.5 percent worked in such jobs in 2006, and this grew to 17.3 percent in 2010 – still far short of its 1999 level (PCBS 2011a: Table 20). In contrast, among employed women in the West Bank, only about 1 percent worked in such jobs at any time during the period. The average daily wage in Israel and the settlements rose from 129.8 NIS in 2006 to 158.0 NIS in 2010, increasing the ratio to the average West Bank wage from 1.69 to 1.84.

The employment numbers include workers both with and without permits, since they are based on the PCBS Labor Force Survey of households. Permits for work in Israel and the settlements are issued by the Israeli agency Coordinator of Government Activities in the Territories (COGAT), and the number of such permits is reported, and has been compiled in, for example, ILO (2009). The number of permits need not correspond to the number actually employed each year, however, because some permits may not be used, and some Palestinians, including some children, work without permits. ILO (2009: 13) reports that PCBS (2009) estimated that 75,000 Palestinians worked in Israel and the settlements in 2008, ‘implying that approximately 27,000 worked without a permit.’ This is larger than the total of 67,000 implied by the Labor Force Survey data for 2008.6

The rise in Palestinian employment in Israel and the settlements during this period, as well as more recently, at least in part, has been the result of deliberate Israeli policy decisions. In 2009 an ILO mission was told by the head of COGAT that the current policy was to slowly increase the number of Palestinians working in Israel, especially in construction (ILO 2009). A position paper published by the Peres Center for Peace discussed reasons to expand Palestinian employment in Israeli (and Israeli settlement) construction and agriculture, arguing that doing so would not displace Israeli workers because they were not willing to do the hard work required in these sectors, such as hothouse and field work in agriculture, and scaffolding, iron rods, plastering and flooring in construction (Gal, Stern, and Greenapple 2010). ILO (2009: 12) also observed that in 2009, ‘As in 2008, the [ILO] mission heard worrying reports of the Israeli authorities attempting to recruit collaborators in exchange for issuing or renewing a work permit,’ and this may also help to explain the desire to issue additional work permits.

6 The Labor Force Survey reports that in 2008, 10.1 percent of all the 667,000 Palestinians resident in the Palestinian territories who were employed were working in Israel and the settlements (PCBS 2011a: Table 41).
The rise in employment in Israel and the settlements contributed about 23,600 to new employment, or about 28 percent of employment growth in the Palestinian territory as a whole during 2006-2010. By identifying and separating out its effects, we are better able to understand the how growth in Palestinian GDP affected Palestinian employment and wages.

In addition to high unemployment in the Palestinian economy during this period, there was also significant underemployment: in 2006, of all those classified as employed in the Palestinian territory, 10.5 percent were counted as underemployed, either because they worked less than 35 hours per week or because they reported that their work was inappropriate, in terms of tasks or pay, to their skill or educational level. Thus the Palestinian economy entered into the 2006-2010 period of growth mired in unemployment and underemployment, a legacy in part of the Second Intifada and the Israeli closures that accompanied it. The significant employment growth already described was not nearly enough to erase this legacy by 2010.

There were several different labor market dynamics at work in both the West Bank and the Gaza Strip in this period, with substantial differences between the two regions. One dynamic was the changing shares of public and private sector employment. A second was a shift from lower to higher quality work, such as a shift to wage employment either from unpaid work in a family business, or from self-employment (own-account work). Third, economy-wide there was a net shift from underemployment to regular employment. A fourth was a somewhat surprising pattern of change in women’s labor force participation rate.

4.3 Public and private employment growth

In the West Bank, public employment as a share of all employment in the Palestinian economy during 2006-2010 remained on average at the same 19 percent level as the average during 2000-2005. In the Gaza Strip, in contrast, the share was about twice as large, and growing: during 2000-2006 it was about two-fifths of all employment, growing from 38 percent in 2000 to 42 percent in 2006, and then to 46 percent by 2010.

Looking at the same data in terms of growth rates of employment, in the West Bank during 2006-2010 public sector and private sector employment grew at similar rates. Public sector employment rose by 12,000, or 15.8 percent, while private sector employment grew by about 48,000, or 14.5 percent (excluding employment in Israel and the settlements). In the Gaza Strip, in contrast, public employment grew by 19,000, or 26.6 percent, as private sector employment fell in 2008 in the depths of the blockade-induced trough, and by 2010 had only recovered enough to rise by 5,000 over 2006, for just a 6.6 percent increase. Even this recovery was due in large part to Gazans’ enlargement of the tunnels to Egypt, allowing inputs to be imported for construction, manufacturing, and other uses in circumvention of the Israeli blockade; these tunnels have more recently been largely destroyed. In addition, fishing was drastically constrained. Although the Oslo Accords specify the right for Palestinians to fish out to a 20 nautical mile limit, and even after 2002 the limit was still 12 nautical miles until 2006. But in 2006 Israel unilaterally reduced the fishing limit to 6 nautical miles from shore, and then to 3 nautical miles by 2009. Among the other factors constraining economic activities are frequent interruptions to the supply of electricity, and the removal of a substantial share of agricultural land from use, estimated at 35 percent by Human Rights Watch, by Israel’s unilateral creation of a free-fire zone of 300 meters or more next to the wall that surrounds Gaza (UNOCHA OPT 2013a,b).

Another factor in the Gazan economy is that public employment in the Gaza Strip was somewhat anomalous in this period, because of the conflict between Fateh and Hamas. After Hamas won the 2006 Legislative Council elections and then took control in the Gaza Strip in
2007, the Palestinian Authority continued to pay the salaries of PA employees in Gaza, although apparently only a fraction of them continued to provide public services, mostly in health and education (Abdalla 2012). In fact, ironically the $7 billion that reportedly was paid to PA employees in the Gaza Strip during 2007-2011 or so – an amount that was about 80 percent of Gazan GDP – would have been enough to support the demand for goods imported through the tunnels to Egypt, particularly once those tunnels were progressively enlarged, and especially in the latter half of the period. In turn, Hamas reaped considerable revenue from the tunnel operations (Pelham 2011).

4.4 Growth in income-earning employment and wage employment

While total employment in the Palestinian economy grew at a pace that was only about average by world standards for given GDP growth, *income-earning employment* grew faster than total employment, while *wage employment* grew considerably faster, and *private-sector wage employment* grew still more rapidly. Table 2 and Figure 4 show the details of these changes; all numbers refer to employment in the Palestinian economy, excluding employment in Israel and the settlements.

As noted above, total employment in producing Palestinian GDP grew by about 84,400, from 581,400 in 2006 to 665,800 in 2010, and the cumulative growth, as already reported, was 14-15 percent in both the West Bank and Gaza Strip.

Income-earning employment is defined here to include all those counted by the PCBS as employed except those working unpaid in a family business. In 2006, such unpaid workers made up 12.2 percent of all employment in the Palestinian economy. Such persons are considered employed by the PCBS, but they do not individually earn incomes, although they help increase their families’ incomes. Thus those included here in income-earning employment are all those in the other three categories of employment: wage employees, the self-employed (own-account workers), and employers.

The change in the sizes of these categories is one useful measure of changes in the quality of employment over the period 2006-2010. ILO (2014) argues cogently that employment alone is a poor measure of benefit to the population, since the poor who lack wage employment are forced to become own-account workers to survive, often with starvation-level earnings. What matters is the number of ‘good’ jobs created, those that pay reasonably well, are fairly productive, and provide social recognition to the workers employed in them. In the whole Palestinian economy, income-earning employment (exclusive of employment in Israel and the settlements) grew from 510,000 in 2006 to 611,000 in 2010, an increase of 101,000, or 20 percent, over the period, substantially more than the 15 percent gain in total employment in the Palestinian economy.

Just as the percent growth in total employment in the Palestinian economy was almost exactly the same in both the West Bank and Gaza Strip, the rate of growth in income-earning employment was also remarkably similar in the Gaza Strip, with an increase of 30,000, or 19 percent, in such employment. However, the reasons for this growth were somewhat different in the two regions: in the Gaza Strip, growing public employment accounted for nearly two-thirds of the increase in income-earning employment, while in the West Bank the shares were reversed: the 47,000 increase in private sector income-earning employment was 69 percent of the total 71,000 increase in income-earning employment.

Within income-earning employment, the cumulative growth in the single category of *wage employment* in the Palestinian economy was even greater – 30 percent overall – and again,
almost identical in the West Bank (at least 31 percent) and Gaza Strip (30 percent). In the West Bank, wage employment in the Palestinian economy increased by 99,000. Recall that the increase in total employment in the Palestinian economy was only a little over 84,000. The particularly rapid growth in wage employment occurred because the bulk of those who shifted from unpaid to income-earning employment became wage employees, and some other categories of income-earning employment declined absolutely, as can be seen in Figure 6 and Table 2. In the Gaza Strip, for example, there was a fall in the combined number of self-employed and employers, possibly because manufacturing and construction businesses suffered a catastrophic decline.

The narrower category of private sector wage employment grew still faster than overall wage employment, at least in percentage terms. In the West Bank, private sector wage employment grew by 40 percent from 2006 to 2010, or 52,000 in absolute terms, and in the Gaza Strip by 34 percent, or 16,000, for overall growth in private sector wage employment in the Palestinian economy of 39 percent. This may be surprising in light of the earlier finding that private sector employment overall increased very little. However, as wage employment increased, the number of self-employed declined and the number working unpaid in a family business also fell, while the number of employers rose only slightly. In the public sector, wage employment in the West Bank grew 16 percent, while in the Gaza Strip it rose by 27 percent.

These observations about the labor market dynamics of the economy of the Gaza Strip superficially resemble the description in Gatti et al. (2013) and Assaad (2011) of MENA or ‘Arab’ labor markets. There are several possible reasons for this. One is that the extraordinary, and eventually extraordinarily successful, project of constructing and enlarging the tunnels to Gaza to circumvent the Israeli blockade was an enterprise that apparently involved considerable wage labor. At the same time, much international donor aid has poured into Gaza, and one standard feature of humanitarian aid is cash-for-work programs that put spending money into people’s hands. Further, as already mentioned, salary payments to PA employees continued to be paid, and the goods they bought were likely from the tunnels, so that they flowed primarily to wage employees, either in the private sector or else in the Hamas government. In any case, the employment outcomes in the Gazan economy were remarkably similar to those in the West Bank economy, although the situations were quite different.

4.5 Changes in the employment-to-population ratio

A useful and increasingly popular measure is the employment-to-population ratio (EPOP) for the two regions, showing what percent of the working age population (15+ years) was employed. Figure 5 shows movements in this measure for the West Bank and Gaza Strip. For any particular demographic group – or each regional population as a whole, as here – the EPOP is

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7 The estimate here assumes that in 2010 all those employed in Israel and the settlements were wage employees. In 2006, 91 percent were, and in 2007, 93 percent were; the PCBS then changed its reporting so that this statistic is not available in the published data for 2010. If only 95 percent were wage employees in 2010, then wage employment in the West Bank Palestinian economy rose by 33 percent rather than 31 percent. If growth in wage employment is slightly underestimated, then growth in total income-earning employment, and in private sector wage employment, is also slightly underestimated.
the group’s Labor Force Participation Rate times its employment rate (defined as what the PCBS reports as the ‘employment rate’ plus what it reports as the underemployment rate).\(^8\)

[Figure 5 about here]

About 35 percent of the working age population (15+) in the West Bank was employed in 2010, compared to about 23 percent in the Gaza Strip. These ratios are very low, even compared to other MENA countries; in fact, the overall EPOP for Palestine (30.7 percent) was the lowest in the world, and even the EPOP for the West Bank alone placed it above only Iraq and tied with Bosnia-Herzegovina. In the period from 2006 to 2010, changes in this measure were surprisingly small, with only a slight net increase in the West Bank, and a slight net decrease in the Gaza Strip. Gaza’s EPOP had long been lower, in part because of the very low female LFPR there, just 10.2 percent in 2006, compared to 17.2 percent in the West Bank. The male LFPR in the Gaza Strip is also lower, however – in 2010, 62.1 percent in the Gaza Strip, compared to 69.5 percent in the West Bank. Among Gaza Strip males aged 15-24, the LFPR was just 33.1 percent in 2010, while among West Bank males the same age it was 47.7 percent, a difference that likely resulted from years of especially high unemployment rates among this age group in Gaza.

4.6 Changes in labor force status by demographic group

The prevailing description of MENA or ‘Arab’ labor markets points, among other things, to the low female labor force participation rate. Palestine is among the bottom fourth of MENA countries in its overall female LFPR of 14.7 percent, and this measure for the Gaza Strip in 2010 was just 10.2 percent, compared to 17.2 percent for the West Bank. It is not surprising that in a country with a birth rate among the highest in the world, and a traditional division of labor in the household, only a small minority of women enter the labor force. Someone, after all, must do the housework and care for the children, and for a large household, hiring a housekeeper may not be economical.

This may help to explain why, over this period, the rising male LFPR in the West Bank was accompanied by a falling female LFPR. In the Gaza Strip this was not the case; actually, the female LFPR grew from about 8 to 10 percent over the period – almost entirely females with at least some college – and even though the EPOP ratio remained at a little over 5 percent. In fact, when we categorize females by schooling level, the EPOP ratio fell for every group of females, at every level of schooling, in both the West Bank and the Gaza Strip (see Larudee 2012, Figures 4.12a,b). Possibly in the West Bank women were glad to have more men employed, so that they could withdraw from the labor force and avoid doing two ‘jobs’ – a paying job and the housework. ILO (2014, Table 3.3) shows that the behavior over time of female LFPR in various groups of countries does not tell a single strong and consistent story about the conflicting influences on female labor force participation, although in most of the country groups except the richest, the female LFPR declined over 1991-2013.

Refugee employment in the whole Palestinian economy from 2007-2010 (the years for which the data are reported) fell as a percent of the working age refugee population However, a large part of this was because the majority of refugees live in the Gaza Strip, whose economy fell into deep recession. There, the non-refugee EPOP fell further than the refugee EPOP, perhaps because UNRWA, the refugee agency for Palestinians, has a strong presence in Gaza, or perhaps

\[^8\] If for a specific population group \(N\) is the number employed, \(L\) is the number in the labor force, and \(P\) is the number of persons of working age, then

\[
\text{Employment rate} = \frac{N}{L} \\
\text{Labor Force Participation Rate} = \frac{L}{P} \\
\text{Employment ratio} = \frac{N}{P} = \frac{(N/L)(L/P)}{L/P} = \text{(employment rate)(LFPR)}.
\]
due to aid programs that specifically target refugees. In contrast, in the West Bank the refugee EPOP dropped more than the non-refugee EPOP.

5. Growth of output, employment, and labor productivity

A high output elasticity of employment has the advantage that more of the unemployed are put to work, but the disadvantage that productivity growth is slower for any given growth rate of output. This is because we can express real GDP ($y$) as number employed ($L$) times labor productivity (real value added per person employed, or $y/L$):

$$y = L(y/L)$$  \hspace{1cm} (1)

and then the growth rate of $y$ can be written as the sum of the growth rate of the number employed, plus the growth rate of labor productivity, plus the product of the first two terms. The last term is usually ignored because over short periods it is generally negligible (see Kapsos 2005; Landmann 2005):

$$g_y = g_L + g_{y/L} + g_L(g_{y/L}) \sim g_L + g_{y/L}$$  \hspace{1cm} (2)

The approximation is fairly close for the range of growth rates typically encountered over short periods. For the West Bank Palestinian economy in 2006-2010, the numbers are:

$$42.7\% \sim 14.6\% + 24.5\%$$

That is, real GDP grew 42.7 percent from 2006 to 2010; the number in the West Bank employed in producing Palestinian GDP (excluding Palestinians employed in Israel and the settlements) grew 14.6 percent; and labor productivity – real West Bank Palestinian GDP divided by the number employed in producing it – grew by 24.5 percent (Larudee 2012).

The International Labor Organization (ILO) has long argued that policymakers should focus on employment growth as among the most effective ways to combat poverty. Employment growth funnels income to households and helps them avoid or escape poverty. Khan (2007) cites studies, like those collected in Islam (2006), that reveal a strong correlation between slow growth of employment growth and persistence of poverty in developing countries. However, recent writings such as ILO (2014) emphasize the importance of generating ‘good’ jobs, rather than just employment of any kind, and defines ‘good’ jobs as those that pay reasonably well, have fairly high productivity for society, and offer respect and recognition to those employed in them.

Growth in labor productivity is important in order to maintain competitiveness with other countries exporting similar goods; and this competitiveness affects employment. The ideal is to find ways of increasing both employment and productivity by achieving more rapid growth of real GDP.

5.2 The responsiveness of employment to growth in output

The responsiveness of employment to growth in output is measured by the output elasticity of employment (OEE) for a given time period, which is the ratio of the percent change
in employment to the percent change in real GDP. The OEE for the Palestinian economy as a whole, excluding employment in Israel and the settlements, was 0.46 for 2006-2010, that is, a one percent increase in real GDP was associated with a 0.46 percent increase in employment. It is also sometimes called the employment intensity of growth. For the West Bank it was 0.37; for the Gaza Strip it was 1.18.

Worldwide, for 160 countries, the average OEE for 1991-1995 was 0.34; for 1995-1999 it was 0.38; and for 1999-2003 it fell to 0.30 (Kapsos 2005). For 2006-2010, the West Bank OEE cited above was both on the high end of these averages, and the economywide elasticity was higher. The high Gaza Strip OEE of 1.18 suggests some resemblance to MENA labor markets, in that Kapsos (2005) found elasticities higher than 1 for MENA countries during the these same periods. Given the growth rate of GDP, an OEE > 1, that is, with employment growing faster than output, implies that labor productivity is actually declining (Kapsos 2005). Strictly speaking, however, that it means average labor productivity is declining; but in a growing economy, since many new workers have been added, it is possible that productivity of previously employed workers has risen, while the lower productivity of newly hired workers has dragged down average productivity. Section 5.4 will discuss this sort of composition effect with respect to wages; but it also applies to labor productivity.

Some researchers over the last decade or two have argued that labor markets in MENA countries tend to have a cluster of characteristics in common, although not all of them fit the mold perfectly. The World Bank’s report Jobs for Shared Prosperity: Time for Action in the Middle East and North Africa (2013), by Gatti et al., argues that these countries have disproportionate shares of employment in the public sector, along with weak private sectors. Their birth rates are high, creating a high rate of labor force growth and large young cohorts entering the labor market who often face high unemployment rates. In countries that most typify this cluster of characteristics, highly educated youth – those with at least some college education – have higher unemployment rates than those with fewer years of schooling.

Gatti et al. (2013) assert that high unemployment in this group is associated with queueing of these young people for desirable public sector jobs that carry job security, relatively easy work for fairly good compensation, and substantial benefits including a good pension. Indeed, they are said to pursue degrees that will get them public sector jobs rather than degrees suited for private sector employment. Yet such public sector jobs are often of relatively limited benefit to society. There are relatively few good jobs, because much private employment has low productivity and/or is informal; and the private formal sector is small, often smaller than the public sector. In contrast, less educated youth have a lower unemployment rate and tend to work in low-paid employment, often as own-account workers. The difference, ILO (2014) points out, is that poorer households often need some of their children to work in order for the family to survive. In these countries, female labor force participation is typically also low.

Assaad (2011) similarly offers this summary characterization of ‘Arab’ labor markets: ‘oversized public sector, high youth unemployment, weak private sectors, rapidly growing but highly distorted educational attainment, and low and stagnant female labor force participation’ (Abstract). He adds that ‘employment in the bureaucracy and security forces’ constitutes ‘a large fraction of total employment’ and ‘a dominant share of formal sector employment’ (Assaad 2011, 1). He links this cluster of features to the ‘authoritarian bargain’ hypothesis, with the analysis that authoritarian regimes offer good public sector jobs to a certain segment or class in order to make

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9 Empirically it can be estimated by a statistical regression to get a point elasticity, rather than taking the actual percent change in employment divided by the percent change in real output, which gives an arc elasticity. For the Palestinian economy the elasticities were calculated as arc elasticities.
them reluctant to join the political opposition or to protest publicly. Among the countries he cites as examples are Egypt.

However, Assaad (2011) also notes that Palestine, at least for males, is an exception to the pattern that highly educated youth have higher unemployment rates than less-educated youth. In contrast, females in Palestine who are in the labor force do fit the pattern that the unemployment rate for the most-educated group far exceeds that of less-educated groups. But this is in part a consequence of the 47.8 percent unemployment rate among college-educated females in the Gaza Strip in 2010 – who formed 91 percent of the female labor force in Gaza – while in the West Bank the same group (those with 13+ years of schooling) were 57 percent of the female labor force and had only a 17.9 percent unemployment rate.

The Palestinian economy, especially that of the Gaza Strip, does fit the standard characterization in the following respects. First, it has a low and fairly stable female labor force participation rate – 14.7 percent economywide in 2010, and fluctuating around 15 percent from 2006 on. In 2009-10 Palestine’s female LFPR was lower even than most Middle Eastern countries, except Saudi Arabia, Iraq, and Syria (Gatti et al. 2013, 42, Figure 1.2).

Second, the birth rate is high, though gradually declining, and was higher 15 years earlier, so that the labor force growth rate is very high, an average annual 4.0 percent over 2006-2010 in the whole Palestinian economy, and 3.7 percent in the West Bank and 4.7 percent in the Gaza Strip over the period. The female LFPR in the West Bank actually declined over the period, which helps to explain this large differential between the two regions. Third, there is a fairly large youth (15-24) cohort in the labor force.

Fourth, the youth (age 15-24) unemployment rate is very high: 38.8 percent in 2010 in the whole Palestinian Territory, the second highest overall youth unemployment rate in the world (World Bank 2013a). This masks an enormous regional difference, however, with 28.2 percent youth unemployment rate in the West Bank – and a 63.4 percent rate in the Gaza Strip, even though the LFPR of the 15-24 age group in Gaza is much lower than in the West Bank. If considered separately, even the West Bank is in the top ten in youth unemployment rates in the world, while the Gaza Strip has the world’s highest youth unemployment rate by far.

The description of ‘Arab’ labor markets in Assaad (2011) somewhat better characterizes the Gaza Strip than the West Bank; however, the reasons for these features are likely somewhat different from other MENA countries. Assaad’s argument is that this situation in ‘Arab labor markets’ is a consequence of an ‘authoritarian bargain’ strategy by which states that have a reliable, consistent source of revenue use it to quell dissent by giving good, secure jobs to those who might otherwise join protests. But state revenue is hardly consistent or reliable in the West Bank, and much less so in the Gaza Strip. For one thing, donor aid has fluctuated widely in amount. For another, under the Oslo Accords, Israel collects tariffs on imports for the Palestinian Authority and then is supposed to turn over these ‘clearance revenues’ to the PA, but has frequently withheld these funds for months or even years, cutting off a large share of the PA’s revenue – and, since 2006, none of this revenue goes to the Gaza Strip, at least not directly (but see section 5.3). Those employees whose salaries depend partly or wholly on PA funds, such as university staff, often find their monthly paychecks late or short, or both. It is not surprising, therefore, that a 2010 Gallup poll in Middle Eastern countries found that in Palestine the share of those aged 15-34 who expressed a preference for a public sector over a private sector job was only about 52 percent, smaller than in 12 other MENA countries (Gatti et al. 2013). Since for the whole Palestinian Territory, public sector employment was 24 percent of all employment in 2010 (including employment in Israel and the settlements), this does represent a significant preference, but not as strong a preference as in other MENA countries, in the majority of which 55-70 percent...
of youth in this age group say they would prefer a public sector job (Gatti et al. 2013, Figure O.10).

Most important, the following sections, especially section 5.4 on the growth of income-earning employment and wage employment, will show that the Palestinian private sector is not intrinsically weak. Its performance during 2006-2010 demonstrated considerable strength with regard to generating private sector wage employment as GDP increased. Yet it was unable to provide increases in the real average daily wage, despite the fact that labor productivity increased substantially. However, section 6.3 argues that real wages for existing employees could have increased somewhat, even though the average might have failed to rise due to lower wages to new hires.

The following sections summarize overall employment growth during 2006-10 and then explain how employment in Israel and the settlements needs to be disentangled from the totals in order to understand the dynamics of the Palestinian economy per se.

5.7 The employment intensity of growth and ‘good’ jobs

Did output growth in the Palestinian economy generate the amount of employment that one would expect, given the experience of other countries? Output elasticities of employment have already been mentioned in an earlier section. As Kapsos (2005) points out, however, if measured as a simple arc elasticity using data from just a beginning and an ending year, the OEE can and does vary greatly in any given country, depending on what years are chosen. At the same time, it also varies widely across countries.

ILO (2014) argues that the greater the poverty level in a country, the more likely it will be that employment is created by the unemployed themselves through engaging in whatever marginal own-account work they can find, such as street vending, rather than by seeking and finding wage employment. Therefore, growing employment is not by itself the goal; what are needed are good jobs.

Kapsos (2005) cites cross-country data over long periods suggesting that poor countries tend to have high OEEs, as slow growth and low incomes force people to resort to any sort of own-account work in order to survive. So even when growth in output is not high, growth in employment tends to roughly match labor force growth, which sometimes results in an OEE of greater than 1.

As Table 3 shows, for the West Bank the OEE was 0.37 for this period, when we use data on employment in the Palestinian economy alone, excluding Israel and the settlements. As observed in section 4.2, ILO data show that worldwide, for 160 countries, the average OEE for 1991-1995 was 0.34, for 1995-1999 was 0.38, and for 1999-2003 was 0.30 (Kapsos 2005, 8, Table 3.1). Thus the OEE for the West Bank was very near the average. In other words, given the rate of output growth, the West Bank Palestinian economy translated this into employment in more or less the average way, and produced about as much new employment as would be expected based on the experience of other countries. On the other hand, the Gaza Strip had an OEE of 1.18 over this period, producing much more employment than would be expected for a Lower Middle Income country – but about as much employment as a MENA developing country has been shown to produce. Kapsos (2005) finds elasticities for countries of the Middle East ranging from 0.91 to 1.29 and averaging 1.10 during 1991-2003, and for North Africa ranging from 0.30 to 0.74, and averaging 0.52 over the same period. As already mentioned, an OEE of 1.18 implies falling labor productivity, and with the relatively productive industrial and
construction sectors in the Gaza Strip being devastated for much of the period, it is not surprising that labor productivity did fall.

5.8 Improvement in ‘good jobs’

In the West Bank, the number of those employed in ‘good jobs’, by some measure, increased faster than did total employment. By several measures there was improvement in job quality in the West Bank during 2006-10, while the picture was more mixed in the Gaza Strip. Note that in this section the data do include employment in Israel and the settlements.

One measure is what share of all those employed were underemployed. Underemployment is of two kinds in the PCBS definition: (1) visible underemployment, defined as working less than 35 hours per week, or else working less than the normal hours of work in the respondent’s occupation; and (2) invisible underemployment, defined as either wanting to change jobs because the pay is insufficient in the respondent’s current job, or working in an occupation that does not fit the respondent’s qualifications. Figure 6 shows that, while underemployment was a substantially higher share of all employment in 2006 in the West Bank than in the Gaza Strip, by 2010 the share of underemployment had fallen in the West Bank and risen in the Gaza Strip, reaching 9.3 percent in the two regions. The largest change actually took place from 2007 to 2009, when in the West Bank the share of underemployed fell from 11.5 percent to 7.6 percent, while in the Gaza Strip the share rose from 7.0 percent in 2007 to 10.7 percent in 2008. By 2010, however, in both places there was a small reversal, and the two regions converged (Larudee 2012).

However, with employment growing substantially in both regions, it is important to realize that an increase in the share of underemployment can be either a good thing or a bad thing. Movement from unemployment to underemployment is generally a good thing. On the other hand, movement from regular employment to underemployment may be a bad thing, if it is involuntary. If it is voluntary, it could be a good thing, such as if a college student voluntarily reduces her working hours to have more time to study and raise her grades.

In the West Bank, regular employment expanded much faster than underemployment during 2006-2010, from 412,000 to 500,000, while the number underemployed actually fell from 55,000 to 51,000; this seems to be a clear improvement in job quality. In the Gaza Strip, regular employment grew from 157,000 to 175,000 (an 11.5 percent increase, slower than the overall growth of employment), while underemployment grew from 12,000 to 18,000, a 50 percent increase, so that the growth of ‘good’ jobs was much slower than in the West Bank (Larudee 2012).

Another facet of job quality is the precariousness of work. A previous section has already discussed the fairly dramatic shift from unpaid to paid work and from self-employment to wage employment. There is some evidence that the largest decline in the share of unpaid work and increase in the share of wage employment occurred in the governorates that also had the largest share of employment in Israel and the settlements (see Larudee 2012, 76). A good question for further research is the extent to which the Palestinian economy alone was able to generate good jobs as defined here. In addition, in 2010 a much larger share of employment in the Gaza Strip was reported to be casual or seasonal than in the West Bank. Fully 92 percent of wage employees in the West Bank had permanent full-time work, while only 62 percent of wage workers in the Gaza Strip did. Put another way, 32 percent of Gazan wage employees held seasonal or casual jobs, but only 5 percent of wage employees in the West Bank did (PCBS 2011a: Table 65). These
data only began to be reported in 2010, however, so it is not possible to compare them with any earlier year.

6. Evolution of labor incomes

6.1 Overview

During 2006-2010, we have seen that employment rose 17 percent and wage employment rose 30 percent in the Palestinian economy. Employment is one form in which the benefits of growth accrue to labor. However, labor’s share of the increase in value added depends on growth in the total wage bill, and this depends on wage growth as well as employment growth. Unfortunately, real average daily wages fell in both the West Bank and the Gaza Strip over this period, although they rose for Palestinians working in Israel and the settlements.

In the West Bank the real average daily wage for wage employees in the Palestinian economy was 3.3 percent lower in 2010 than in 2006, with cumulative growth in the nominal average daily wage of 12.2 percent and the CPI rising by 16.0 percent. In the Gaza Strip, the real average daily wage was a devastating 31.4 percent lower in 2010 than in 2006, the result of a 15.7 percent decline in the nominal average daily wage and 22.9 percent inflation in consumer prices. The net effect for the Palestinian economy was that the real average daily wage declined by 11.4 percent, as the nominal average daily wage increased by just a cumulative 5.7 percent while the CPI increased by 19.3 percent (Larudee 2012). In the West Bank, Hebron and Jerusalem governorates suffered the largest wage declines in the real average daily wage, 6.3 percent and 7.5 percent respectively. Hebron has traditionally been an industrial center with a significant footwear and leather goods industry, a stone industry, and other manufacturing, but has undergone a long decline due in part to competition from Chinese imports, and in part to the continuing presence of settlers and shutdown of some commercial areas. A protective tariff was imposed after the period covered by this study in an attempt to revive industry there, although matters are complex because some Hebron industrialists have invested in production in China and thus are competing with Hebron domestic production themselves. In Jerusalem governorate (the West Bank region directly east and north of Jerusalem, but outside the separation wall), the main factor depressing economic activity is the tightening circle of settlements and the separation wall, cutting off West Bank residents from longstanding business relationships with East Jerusalem, which was annexed by Israel after 1967 but is still regarded by Palestinians as their capital. In the Gaza Strip the least affected governorate was Rafah, the center of the tunnel economy, which faced a 25 percent decline in its real average daily wage. In the hardest hit governorates, Deir al-Balah and Khanyounis, the real average daily wage declined more than 36 percent from 2006 to 2010 (Larudee 2012).

In the West Bank, public sector wages were close to private sector wages, and changed relatively little from 2006 to 2010, while in the Gaza Strip public sector wages were higher than private, but both fell over the period. In the West Bank the public sector average daily wage was almost identical with the private sector wage in 2006, but by 2010 the private sector wage had slightly fallen, while the public sector wage stayed almost the same. In the Gaza Strip, both the public/private wage difference and the changes over this period were larger: the private sector real average daily wage was about two-thirds the level of the public sector wage both in 2006 and 2010 (with a slight narrowing of the gap in the intervening years), and the real average daily wage in both the public and private sectors dropped by around one-fourth over the period.

As Figure 7 shows, the result for both the West Bank and Gaza Strip was a decline in the real wage bill and a decline in the share of labor compensation in value added from 2007 to
2010, as measured by the Economic Survey, an annual survey that samples establishments. In the Gaza Strip, labor’s share of value added dropped by nearly half.

If the real average daily wage had remained constant in real terms and average days worked had been unchanged, the 30 percent increase in wage employment would have produced a 30 percent increase in the wage bill. Since real GDP grew by 33 percent in the whole economy, this would have meant that labor’s share of value added had fallen by only a little. In fact the picture for labor was considerably bleaker than this. The real wage bill rose by just 11.6 percent from 2006 to 2010, the result of about a 30 percent increase in wage employment, a 3.4 percent decline in average days worked per month, and an 11.4 percent decline in the real average daily wage. So the fact that the wage bill grew much more slowly than value added means that labor’s share of value added fell. Much of this fall occurred in the Gaza Strip. In the West Bank, the wage bill grew 21.8 percent. In the Gaza Strip the real wage bill actually fell by 13.4 percent, despite substantial growth in employment – so that the much more numerous wage employees in 2010 were dividing up a much smaller stream of income than in 2006.

The real wage bill was calculated using Labor Force Survey data on the nominal average daily wage and the number of monthly days worked, together with data on the CPI. The employee compensation share of value added, from the Economic Survey data (PCBS 2009a, 2011c) sampling establishments for 2007 and 2010, corroborates these trends: in the Gaza Strip, labor’s share of value added collapsed, from 28.2 to 15.0 percent, while in the West Bank the decline was smaller but still substantial, from 25.8 to 23.5 percent.

6.2 Wage changes for Palestinians working in Israel and the settlements

Those employed in Israel and the settlements were the only group whose real wages clearly rose. In 2006 they earned a nominal wage of 129.6 NIS daily, on average, 1.69 times the daily wage of other West Bank Palestinians. By 2010 the nominal wage had grown to 158.0 NIS, an increase of 22 percent, so that the real average daily wage rose by 5 percent, and grew to 1.84 times the average West Bank nominal wage. Wages from Israel and the settlements accounted for 18 percent of all wage income in the Palestinian territories in 2010, up from 14 percent in 2006 (Larudee 2012).

6.3 Declining average wages can mask increases for existing employees

When employment is growing, it is possible for a stagnant average wage, as in the West Bank, to mask increases in average wages for existing employees, while new employees are hired in at lower wages. The overall change in the average daily wage over a time period can be

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10 The revised data available for 2006 did not provide adequate detail for the calculation.
11 This caution also applies to data on hours worked and on labor productivity; any time the composition of the group for which an average statistic is being reported changes, the change in the average statistic may (obviously) be affected by the changing composition of the group rather than by movement in the statistic for any one subgroup. So, for example, if the average weekly hours worked of a certain demographic group declines while that group is growing in size, the decline may mask an increase in hours worked for those already employed, while those newly employed are being hired for fewer hours than existing employees. Similarly, average labor productivity may fall, while the labor productivity of existing employees rises, but new and less productive employees are being hired.
thought of as the result of two changes. One is the change in the wages of those already employed; the other is the addition of new workers, who on average very likely are hired at lower wages. The lower wages of new hires can bring down the average wage, obscuring any increase in the wages of existing workers.

This can best be explained with a hypothetical example. In year 0, suppose 40 workers are employed at an average wage of £100, for a total wage bill of £4,000. Assume that economic growth in year 1 both raises the wages of these workers to £110, and results in 10 more workers being hired at an average wage of £60. The total wage bill is now £5,000, because 40(110) + 10(60) = 4400 + 600 = 5,000. The average wage is still unchanged at £5,000/(40 + 10) = £100. Yet all those now employed have enjoyed an increase: existing workers gained a 10 percent wage increase, and new hires now are paid 60 percent of the average wage, rather than being unemployed with no earnings (see Larudee 2012).

Data are often unavailable on the change in the wages of existing workers, or on the wages of newly hired workers, at least over a four-year period (the PCBS Labor Force Survey includes any given household for only a period of six quarters, and they are not surveyed in the third and fourth quarters of the six.) However, lacking such data we are still able to derive a simple relationship that must hold between the growth rate of the wages of existing workers $x$ and the average daily wage of new workers as a percent of the initial average daily wage of existing workers $y$. As explained in Appendix 2, this relationship is:

$$y = \frac{1}{1-r} \left[ (1+g) - \frac{r}{1-r} x \right]$$

where $g$ is the percent change in the average daily wage, and $r$ is the ratio of beginning-of-period to end-of-period wage employment. For the West Bank Palestinian economy for 2006-2010, $g = 0.122$ and $r = 0.763$, so that equation (3) becomes

$$y = 4.73 - 3.22 x$$

(Figure 8 about here)

Figure 8 shows the locus of all possible combinations of $x$ and $y$, given these parameters, and assuming the average pay to new hires is no less than 50 percent of the average pay to existing workers. Both axes are in nominal wages, and since CPI inflation over 2006-2010 was 16 percent, $x = 116$ percent corresponds to an unchanged real wage to these workers. The figure shows, for example, that if in 2010 the wage to existing employees was 12.2 percent above their 2006 wage, then new hires must also have been paid 112.2 percent of the average 2006 wage (because $g = 12.2$ percent: the 2010 average nominal wage was 12.2 percent higher than the average 2006 wage). Alternatively, if new hires were paid 55 percent of the 2006 average wage (either because they were implicitly paid less per hour or because they worked fewer hours), then in 2010, workers already employed since 2006 must have earned 130 percent of their 2006 nominal wage, or roughly a 14 percent real wage increase over the four year period.

These calculations suggest the likelihood that existing wage employees did earn real wages at least as large in 2010 as in 2006. If the real wage change was 0 percent for existing employees, then new hires earned 100/116 of existing employees’ wage in 2010. This is plausible, as is the alternative possibility that in 2010 existing employees gained somewhat more, and new hires were paid somewhat less. It appears unlikely, however, that any increase in real wages for existing employees was very large, as that would imply an implausibly low wage rate for new hires.

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12 Wage employment in the West Bank Palestinian economy alone rose 31 percent; $1/(1+.31) = .763$. 

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Such a calculation could be done for the Gaza Strip, but might be less meaningful there given that a much higher share of workers was casual or seasonal.

7. Were the Kerry plan’s projections realistic?

US Secretary of State John Kerry, as part of the carrot to entice Palestinians to negotiate a peace agreement, projected an additional $4 billion in investment in the Palestinian economy if an agreement were reached, raising GDP by 50 percent over 3 years, and reducing the economy-wide unemployment rate from 21 percent to 8 percent in that period.

Is such a scenario realistic? The analysis of labor market dynamics in this paper helps to answer that question. There are four main issues: (1) Is Kerry’s projected growth in addition to the trend rates of growth in output and employment, or does it include the trend rates of growth? (2) How variable is the OEE? And is it reasonable to assume that the OEE for 2014-16 would be the same as for 2006-2010 in both the West Bank and Gaza? (3) How would the $4 billion be distributed between the West Bank and Gaza Strip? Can we assume the distribution would be proportionate to real GDP? (4) What is the assumption about what would happen to employment in Israel and the settlements?

Since there are many uncertainties, we adopt some simple assumptions:

(1) The projected growth is in addition to the trend rate of growth from 2006 to 2013, which is 9.9 percent per year. This must be the intended assumption, since if there were only 50 percent GDP growth from 2013 to 2016, the unemployment rate would hardly fall at all, due to high labor force growth, the relatively modest OEE, and the fact that Palestinian GDP growth only generates employment in the Palestinian economy, not employment in Israel and the settlements.

(2) The OEE for the whole Palestinian economy in the period 2013-16 is as calculated for this study, using data from 2006 to 2010.

(3) The $4 billion would be distributed between the West Bank and Gaza Strip proportionately to their 2013 real GDP, which means that roughly three-fourths of it would go to the West Bank and one-fourth to the Gaza Strip. (If instead more of it went to Gaza, possibly this would bring about a greater reduction in the unemployment rate in Gaza than in the West Bank, and a greater overall reduction in the unemployment rate.)

(4) We arbitrarily assume, as a kind of benchmark, that employment in Israel and the settlements would remain constant at its 2013 level of 99,000 workers in the West Bank and none in the Gaza Strip. In reality, there are good reasons to think that this number might either fall or rise. It would fall sharply, for example, if settlement construction declined or halted (as the Palestinians would presumably require for a peace agreement), and if there were no changes in non-construction employment in Israel and the settlements. It could rise if peace encouraged Israelis to accept more Palestinian workers, and the settlement construction jobs were replaced, for example, by construction jobs in East Jerusalem, such as construction of public buildings and residences for the Palestinian community (unless these jobs were filled by Palestinian Jerusalem residents). Very roughly, every decrease of 12,000 in the number of West Bank Palestinians employed in Israel and the settlements, all else equal, will increase the unemployment rate by one

13 Unless East Jerusalem, which Palestinians have always regarded as part of the West Bank, were reunited with it, in compliance with international law which prohibits an occupying power from annexing any part of the territory it has occupied.
percent in the whole Palestinian economy, so that disappearance of work in Israel and the settlements would offset about two-thirds of anticipated job creation.

Under these assumptions, real GDP would grow by 83 percent over the three-year period (including the 50 percent output growth from added investment, and an assumed cumulative constant trend growth amounting to 33 percent). (It might be added that such an annual average growth rate of real GDP of about 22 percent is almost unprecedented, and could generate unanticipated results, such as immigration of diaspora Palestinians, or accelerated growth of the labor force for other reasons, which might alter the results.) Employment would rise by 266,000 over the period, reducing the unemployment rate from its 2013 rate of 23.4 percent to 13.3 percent, a decline of about 10 percentage points. Thus it is estimated that under the above assumptions, the 13 percentage point reduction in the unemployment rate projected in the Kerry plan is overly optimistic. However, the Kerry plan also set as a departure point the 2011 unemployment rate of about 21 percent, and the unemployment rate in 2013 was already 2.5 percentage points higher than in 2011. This analysis suggests that in terms of the above issues, the projection, while optimistic, may not be too far mistaken – again, if the above assumptions are similar to the ones used to make the projection.

It is extremely rare, but not unheard of, for real GDP to grow more than 20 percent in a year; in the WDI data, by country for 2000 to 2012, there were only 13 country-years with such annual growth rates; and two-thirds of these were oil-rich countries, some of which (such as Iraq) had suffered catastrophic interruptions to production in the preceding year(s). Similarly, it is very rare, but not unheard of, for a country’s unemployment rate to decline as much as 12 percentage points in three years. Since the year 2000, only three countries have achieved this (Iraq, Montenegro, Namibia), though several others have come close, notably several Eastern European countries around the time of their accession to the EU (World Bank 2013a). However, in Eastern Europe some of the change likely resulted from migration, and hence decline in the local labor supply, rather than an increase in local labor demand.

In addition, a sharp word of caution is in order: If a peace agreement meant that settlement construction would stop – and Palestinians would surely not sign it unless it said this – then possibly a very large share of the current 100,000 jobs in Israel and the settlements would be lost, unless Palestinians were hired for new construction such as in East Jerusalem. The unemployment rate would then end up higher by about 1 percentage point for roughly every 12,000 jobs in Israel and the settlements that disappeared. If half of existing such jobs disappeared, for example, and were not replaced by other work, then the unemployment rate would fall by no more than 6 percentage points instead of 10 (and instead of the 13 percent that Kerry projected in his May 2013 speech).

8. Conclusion

8.1 Palestine poorly fits the standard image of Arab/MENA labor markets

This study shows that, at least in the West Bank, new output does generate about the amount of employment that would be expected, based on ILO data on the experiences of other countries from 1991 to 2003. The finding for 2006-2010 is that every 1 percent growth in real output in the West Bank generated on average 0.37 percent growth in employment. Such a 1 percent growth in real output was associated with a 0.50 percent increase in income-earning employment, a 0.75 percent increase in wage employment, and even larger growth in private sector wage employment.

This suggests that at the very least the West Bank economy fits only to a limited degree the characterization in Gatti et al. (2013) of MENA labor markets. The private sector in the West
Bank does not appear to have any major intrinsic weakness; it shows the ability not only to generate wage employment, but to do so at an average wage nearly as high as the public sector (Larudee 2012).

### 8.2 Constraints on the Palestinian economy

However, many constraints on economic activity limit the growth of GDP. The sometimes crushing constraints on the Gaza Strip have been discussed in a previous section (and will be starkly obvious for those reading this during or after July/August 2014), but the constraints on the West Bank are also burdensome. The Oslo Accords limit both imports and exports, and by compelling almost all trade to pass through Israel, imposes costly delays and inspections, as well as demurrage fees for imports held for days, weeks, or months in warehouses due to Israeli policies and procedures. For exports of fresh agricultural produce, such as strawberries from the Gaza Strip, such delays can destroy entire shipments.

Furthermore, the constraints on economic activities, notably the extreme constraints on investment in any kind of construction in Area C, forming about 61 percent of the West Bank, is cut off by the fact that construction permits are very costly to apply for, and very frequently denied; and structures that are built anyway (including some funded by government aid donors) are often demolished by the Israeli government. In other words, existing constraints on the Palestinian economy are constraints on economic activity, rather than constraints on the ability of economic activity to generate employment.

In the Gaza Strip, looking just at 2006-2010 it is impossible to tell what the private sector there could have done if not starved for imported production inputs by the Israeli blockade, or restricted from exporting its output by Israeli policy decisions rooted in the Oslo Agreements, or subjected to extensive bombing and/or shelling every few years. However, the project of digging and enlarging the tunnels to make them commercially viable was an extraordinary feat that suggests great ability to plan, engineer, troubleshoot, and maintain a challenging construction project.

The constraints on economic activity in both regions are formidable, however – sometimes crushing for the Gaza Strip, and always burdensome for the West Bank. For 2010, ARIJ/MNE (2011) conservatively estimated that the cost of the Israeli occupation was at least 85 percent of GDP – meaning that without the Israeli occupation it would have been 1.85 times as large. World Bank (2013b) is a study of the cost just of restrictions on economic activities in Area C, the 61 percent of the West Bank that under the Oslo Agreements is both under Israeli civil administration and Israeli security control. There, all construction of any kind – even an animal pen or a drip irrigation system – requires obtaining a permit, which is costly to apply for, and rarely given. Structures built without permits are frequently demolished, and many more are threatened with demolition. World Bank (2013b) provides estimates of losses not included in the ARIJ/MNE study, which add roughly 8 percent to the costs. That was for 2010; but the cumulative loss increases annually, because freed from the constraints imposed by the Israeli occupation and the Oslo Agreements, potential investors could and would have invested in structures and equipment that would have increased GDP if, for example, investment had been

---

14 World Bank (2013b) estimates some of the same types of items estimated by ARIJ/MNE (2011), notably natural resource based economic activities such as commercialization of Dead Sea minerals – but only for Area C, and the extent of overlap is not completely clear. The World Bank report finds a total of $3.4 billion in costs to the Palestinian economy for 2011, of which roughly $2.6 billion appear to be the same costs estimated in ARIJ/MNE (2011) for 2010.
permitted in Area C – including investment in construction of power plants, reservoirs, pipelines, public buildings, residential housing, factories, schools, and other structures. Moreover the cumulative loss from stunted economic growth, the difference between actual GDP and the GDP that would have been achieved with a higher level of investment per year, grows rapidly over time.

Apart from constraints on economic activity, however, the finding in this study that growth in labor income was a relatively small share of growth in value added suggests that income equality is another factor that may be a drag on growth of output and employment. A substantial literature holds that macroeconomies can under some circumstances be characterized as profit-led growth regimes, and under other circumstances as wage-led growth regimes. If a rising labor share of income promotes growth in GDP, all else equal, the economy is wage-led; if it retards growth, it is profit-led. An economy that depends heavily on demand for its exports, for example, is more likely to be profit-led, while an economy that depends primarily on domestic demand for its output is more likely to be wage-led. The Palestinian economy, an economy that faces obstacles and heavy costs for its exports, and has an enormous trade deficit, is very likely wage-led. Thus a declining labor share of value added, as occurred during 2006-2010, could weaken the prospects for further growth, particularly in the context of the constraints mentioned above, where many investment projects also face formidable challenges and extraordinary costs, especially those in Area C.
References


http://www.mas.ps/2012/node/510#.U9km30hbx7w


Palestinian Central Bureau of Statistics. c2013. “Per capita by region and quarter for the years 2011-2012 at current prices.”


http://unispal.un.org/UNISPAL.NSF/0/63503F7B0AEDDFB4852578F5006780A6


World Bank. 2013a. World Development Indicators.

Appendix 1: Indicators of growth of labor force and employment

Various concepts of labor force and employment growth are used here. We define:

L = number of Palestinians in the labor force residing in the West Bank/Gaza Strip

P = total employment of all residents of the Palestinian West Bank and the Gaza Strip (including employment in Israel and the settlements)

P_ = employment in the Palestinian economy of residents of the West Bank and Gaza Strip (excluding employment in Israel and the settlements)

L_W = number of Palestinian residents of the West Bank who are in the labor force

W = total employment of West Bank Palestinians, including in Israel and the settlements

w = total employment of West Bank Palestinians in the Palestinian economy (excluding employment in Israel and the settlements)

L_G = number in the Palestinian labor force who reside in the Gaza Strip

G = total employment of residents of the Gaza Strip

Now define \( \Delta X/X = (X_{2010} - X_{2006})/X_{2006} \), which can more conveniently be written as \( X_{2010}/X_{2006} - 1 \), for X any of the variables above. Then

Palestinian territory:

\[
\Delta L/L = 976/834 - 1 = 17.0 \text{ percent} = \% \text{ change in the labor force in the West Bank and Gaza combined}
\]

\[
\Delta P/P = 744/636 - 1 = 17.0 \text{ percent} = \% \text{ change in total Palestinian employment, including Palestinians employed in Israel and the settlements before and after the change}
\]

\[
\Delta P_/P_ = 581.4/665.8 - 1 = 14.5 \text{ percent} = \% \text{ change in employment in the Palestinian economy proper, excluding Israel and the settlements}
\]

West Bank:

\[
\Delta L_W/L_W = 665/575 - 1 = 15.7 \text{ percent} = \% \text{ change in WB labor force}
\]

\[
\Delta W/W = 551/467 - 1 = 18.0 \text{ percent} = \% \text{ change in total WB employment}
\]

\[
\Delta w/w = 472.8/412.4 - 1 = 14.6 \text{ percent} = \% \text{ change in employment of West Bank residents in the Palestinian economy (excludes Israel/settlements)}
\]

\[
\Delta w/W = 12.9 \text{ percent} = \% \text{ change in total employment due to new employment in the Palestinian economy (includes Israel/settlements before, not after)}
\]

Gaza Strip:

\[
\Delta L_G/L_G = 311/259 - 1 = 20.1 \text{ percent} = \text{ labor force growth in GS}
\]

\[
\Delta G/G = 193/169 - 1 = 14.2 \text{ percent} = \text{ employment growth in GS}
\]
As an example, the concept $\Delta w/W$ is useful to answer the question: Of the total 18.0 percent increase in West Bank employment in this period, how many percentage points were supplied by employment in the Palestinian economy? The answer is $\Delta w/W = 12.9$ percentage points, while the remaining 5.1 percentage points were supplied by added employment in Israel and the settlements.
Appendix 2: Composition effects

The text explains how it is possible for the wages of existing workers to rise, and for new workers also to be hired, but for the average wage to stay the same or even fall, due to composition effects. To take account of both these opposing influences on the average daily wage, of course it would be ideal to have data on the change in the wages of existing workers, or data on the wages of newly hired workers, or both. But even when this information is not available, as in the case of the Palestinian economy from 2006 to 2010, without such data we can still define a simple relationship that must hold between the ratio of the 2010 to the 2006 wage of existing workers (call it $x$) and the ratio of the 2010 wage of new hires to the 2006 wage of existing workers (call it $y$). To derive this equation, we define the following known quantities:

$E_0 \equiv$ number employed in the beginning year (40 in the text’s hypothetical example)

$E_N \equiv$ the number of added employees in the ending year (10 in the numerical example)

$W_0 \equiv$ the initial average daily wage of existing employees (100 in our example)

$g \equiv$ percent growth in the average wage calculated based on all workers (both existing and new) $= \frac{[(W_0 + \Delta W_0)E_0 + W_N E_N]/(E_0 + E_N) - W_0}{W_0}$, where $W_N$ is the unknown wage paid to new hires in the ending year (60 in the example); also in the example, $g = 0\%$.

In addition to the unknown $W_N$ defined just above, the other unknowns are

$x \equiv \Delta W_0 / W_0$, where $\Delta W_0$ is the increment by end of period in the wage paid to those initially employed

$y \equiv W_N / W_0$ where $W_N$ is the unknown wage paid to new hires in the ending year (60 in the example)

The total wage bill at the end of the period $[W_0(1 + g)](E_0 + E_N)$ can also be expressed by adding the wages paid to existing employees $(W_0 + \Delta W_0)E_0$, to the wages paid to new hires $W_N E_N$:

$$(W_0 + \Delta W_0)E_0 + W_N E_N = [W_0(1 + g)](E_0 + E_N) \quad \text{(A2.1)}$$

In the hypothetical example given in the text, this equation is

$$(110 \text{ NIS})(80) + (60 \text{ NIS})(20) = [100(1 + 0\%)](80 + 20) = 10,000 \text{ NIS}$$

We now divide both sides of equation (A2.1) by $W_0(E_0 + E_N)$ and then use the following definitions to write equation (A2.2) below:

$r \equiv E_0/(E_0 + E_N)$ and so $1 - r = E_N/(E_0 + E_N)$

$x \equiv (W_0 + \Delta W_0)/W_0 =$ ratio of new to old wage paid to those initially employed

$y \equiv W_N/W_0 =$ ratio of wage paid to new hires to old wage paid to those already employed

In equation (A2.2), the left hand side is a weighted average, with weights $r$, the share of all employees at the end of the period who were already employed, and $1 - r$, the share of new hires in all end-of-period employees:

$rx + (1 - r)y = 1 + g \quad \text{(A2.2)}$

Solving for $y$,

$$y = \left[1/(1 - r)\right](1 + g) - \left[r/(1 - r)\right]x \quad \text{(A2.3)}$$

In the hypothetical example in the text, we do not know $x$ or $y$ but do know $r$ and $g$: 

29
\[ r = \frac{40}{50} = .8 \] so that \[ \frac{1}{1-r} = 5 \] and \[ \frac{r}{1-r} = 4 \] and \[ g = 0 \]

Equation (A2.3) in this case becomes \( y = 5 - 4x \). Hence, for example, if existing employees enjoyed a 10 percent wage increase, as postulated, then new hires must be earning \( 5 - 4(1 + .10) = .6 \) of existing employees’ initial wage, just as indicated in the hypothetical example in the text.

For wage employees in the West Bank Palestinian economy, we know \( r = .763 \) and \( g = .122 \), so that combinations of values for \( x \) and \( y \) necessarily lie on the line \( y = 4.73 - 3.22x \), shown in Figure 8 in the text. Further discussion of the figure and its implications is in the text.
**Table 1.** Growth in labor force and employment, 2006-2010, in the West Bank (WB), Gaza Strip (GS) and Palestinian Territory as a whole (PT).

<table>
<thead>
<tr>
<th></th>
<th>WB</th>
<th>GS</th>
<th>PT</th>
<th></th>
<th>WB</th>
<th>GS</th>
<th>PT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LABOR FORCE</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Percent change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>575</td>
<td>259</td>
<td>834</td>
<td></td>
<td>15.7%</td>
<td>20.1%</td>
<td>17.0%</td>
</tr>
<tr>
<td>2010</td>
<td>665</td>
<td>311</td>
<td>976</td>
<td></td>
<td>3.7%</td>
<td>4.7%</td>
<td>4.0%</td>
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<tr>
<td><strong>EMPLOYMENT (including Israel and the settlements)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Average annual growth rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>467</td>
<td>169</td>
<td>636</td>
<td></td>
<td>18.0%</td>
<td>14.2%</td>
<td>17.0%</td>
</tr>
<tr>
<td>2010</td>
<td>551</td>
<td>193</td>
<td>744</td>
<td></td>
<td>4.2%</td>
<td>3.4%</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>EMPLOYMENT (in Israel and the settlements)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Percent change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>54.6</td>
<td>0</td>
<td>54.6</td>
<td></td>
<td>43.2%</td>
<td></td>
<td>43.2%</td>
</tr>
<tr>
<td>2010</td>
<td>78.2</td>
<td>0</td>
<td>78.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EMPLOYMENT (excluding Israel and the settlements)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Average annual growth rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>412.4</td>
<td>169</td>
<td>581.4</td>
<td></td>
<td>14.6%</td>
<td>14.2%</td>
<td>14.5%</td>
</tr>
<tr>
<td>2010</td>
<td>472.8</td>
<td>193</td>
<td>665.8</td>
<td></td>
<td>3.5%</td>
<td>3.4%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

Source: PCBS Labor Force Survey Annual Report 2010 and author's calculations
Table 2. Decline in unpaid family members and the self-employed; increase in wage employees and employers. Data exclude those employed in Israel and the settlements.

<table>
<thead>
<tr>
<th></th>
<th>Unpaid family member</th>
<th>Self-employed</th>
<th>Employer</th>
<th>Wage employee</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>West Bank</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>59.3</td>
<td>123.6</td>
<td>21.4</td>
<td>207.6</td>
<td>411.9</td>
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<tr>
<td>2010</td>
<td>48.8</td>
<td>109.5</td>
<td>38.3</td>
<td>276.1</td>
<td>472.8</td>
</tr>
<tr>
<td><strong>Gaza Strip</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>11.5</td>
<td>32.8</td>
<td>7.1</td>
<td>117.6</td>
<td>169.0</td>
</tr>
<tr>
<td>2010</td>
<td>5.0</td>
<td>27.6</td>
<td>8.1</td>
<td>152.3</td>
<td>193.0</td>
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<td><strong>Palestinian Territory</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2006</td>
<td>70.8</td>
<td>156.4</td>
<td>28.5</td>
<td>325.2</td>
<td>580.9</td>
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<tr>
<td>2010</td>
<td>53.8</td>
<td>137.1</td>
<td>46.4</td>
<td>428.4</td>
<td>665.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Unpaid family member</th>
<th>Self-employed</th>
<th>Employer</th>
<th>Wage employee</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>West Bank</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>14.4%</td>
<td>30.0%</td>
<td>5.2%</td>
<td>50.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>2010</td>
<td>10.3%</td>
<td>23.2%</td>
<td>8.1%</td>
<td>58.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Gaza Strip</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>6.8%</td>
<td>19.4%</td>
<td>4.2%</td>
<td>69.6%</td>
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<td>2010</td>
<td>2.6%</td>
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<td>100.0%</td>
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<td><strong>Palestinian Territory</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>12.2%</td>
<td>26.9%</td>
<td>4.9%</td>
<td>56.0%</td>
<td>100.0%</td>
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<td>2010</td>
<td>8.1%</td>
<td>20.6%</td>
<td>7.0%</td>
<td>64.3%</td>
<td>100.0%</td>
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</table>
Table 3. Regional and economy-wide output elasticities of employment.

(Employment numbers are in 000s; real GDP is in millions of constant 2004$)

<table>
<thead>
<tr>
<th>Region</th>
<th>2006</th>
<th>2010</th>
<th>Percent change</th>
<th>Avg. annual percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>West Bank</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real GDP</td>
<td>2978</td>
<td>4250</td>
<td>42.7%</td>
<td>9.3%</td>
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<tr>
<td>Employment, excl. Israel/settlements</td>
<td>412.4</td>
<td>472.8</td>
<td>14.6%</td>
<td>3.5%</td>
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<tr>
<td>Output elasticity of employment</td>
<td></td>
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<td></td>
<td>0.37</td>
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<tr>
<td><strong>Gaza Strip</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Real GDP</td>
<td>1345</td>
<td>1505</td>
<td>11.9%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Employment, excl. Israel/settlements</td>
<td>169</td>
<td>193</td>
<td>14.2%</td>
<td>3.4%</td>
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<tr>
<td>Output elasticity of employment</td>
<td></td>
<td></td>
<td></td>
<td>1.18</td>
</tr>
<tr>
<td><strong>Palestinian territory</strong></td>
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<tr>
<td>Real GDP</td>
<td>4322</td>
<td>5754</td>
<td>33.1%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Employment, excl. Israel/settlements</td>
<td>581</td>
<td>666</td>
<td>14.5%</td>
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<tr>
<td>Output elasticity of employment</td>
<td></td>
<td></td>
<td></td>
<td>0.46</td>
</tr>
</tbody>
</table>

Source: Author’s calculations from PCBS National Accounts and Labor Force Survey data.
Figure 1. Average income in the West Bank, Gaza Strip, and whole Palestinian Territory, 2006-2010.

Source: PCBS National Accounts data
Figure 2. Growth of real GDP and of employment in producing it, 2006-2010

Source: Author’s calculations from PCBS Labor Force Survey and National Accounts data
**Figure 3.** Employment growth in the West Bank Palestinian economy lagged behind labor force growth; increased employment in Israel and the settlements made total employment growth faster than labor force growth. The pattern was similar in the Gaza Strip, but there was no employment in Israel or the settlements. Source: Author’s calculations from PCBS Labor Force Survey data.

(a)

(b)
Figure 4. Wage employment grew in both the West Bank and Gaza Strip, while self-employment and work unpaid in a family business both declined as a percent of total employment in the Palestinian economy. (Employment in Israel and the settlements is omitted.)

Source: Author’s calculations from PCBS Labor Force Survey, 2006 and 2010
Figure 5. Palestine has the lowest employment-to-population ratio in the world, and it was almost unchanged 2006-2010. This ratio is even lower in the Gaza Strip than in the West Bank, partly due to the lower female labor force participation rate, but also due to the somewhat lower male LFPR.

Source: Author’s calculations from PCBS Labor Force Survey data, Table 1.
Figure 6. Underemployment fell as a percent of all those employed in the West Bank from 2006 to 2010, and grew in the Gaza Strip. By 2010 this measure had converged in the two regions at 9.3 percent.

Source: Author's calculations from PCBS Labor Force Survey data
Figure 7. Although employment and wage employment in the Palestinian economy grew (excluding employment in Israel and the settlements), the real average daily wage fell. The total real wage bill grew 22 percent in the West Bank Palestinian economy, fell 13 percent in the Gaza Strip, and grew 12 percent in the whole Palestinian economy, much less than the 43 percent growth in value added.

Source: Author’s calculations from PCBS data
Figure 8. Given the actual growth in the average daily wage in the West Bank from 2006 to 2010, and the actual growth in employment there, the downward-sloping straight line shows the possible combinations of $x$, the ratio of the 2010 nominal wage of those already employed in 2006 to the 2006 nominal wage of those employed in that year, and $y$, the wage paid to new hires in 2010 as a percent of the 2006 nominal wage of those employed in that year.

Source: Author’s calculation from PCBS Labor Force Survey data.

NOTE: Inflation 2006-2010 was 16 percent, so $x = 116$ percent marks a 0 percent increase in the real wage. (The fact that it corresponds to new hires getting paid 100 percent of the 2006 pay of existing employees is a coincidence.) The equation is $y = 4.73 - 3.22x$. 