Lack of peaceful resolution with Israel: economic cost for Palestinians

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Abstract

We propose to estimate the economic cost for Palestine and for Palestinian residents due to the lack of peaceful resolution with Israel. Thereto we make use of the consensus estimates of the International Monetary Fund (IMF) and the World Bank (WB) of real growth rates of economic variables and of the nominal national accounts for Palestine over the period 1994-2006. We identify four periods: 1994-1999 with high real growth rates of gross domestic product (GDP) and of gross national income (GNI); 2000-2002 with a strong decline; 2003-2005 with a modest growth; and 2006 with a renewed decline. We derive the real national accounts (prices1999) for the end years: 1999, 2002 and 2005. It follows that over 2000-2002 the real GDP declined by 27.5%; GNI by almost one third; but that real gross disposable income (GDI) "only" declined by 11.3%; and that over 2000-2005 the declines were 13.8% (GDP) ; about 20%(GNI); and 2.9% (GDI), respectively. Consequently, in 2005, the year preceding the renewed isolation of Palestine, real GDP, GNI and GDI were still below their 1999 level. Based on the modest growth scenario of IMF and WB (3% real growth and 3% price increase) we estimate that over the period 2000-2002 the cost for Palestine, measured in terms of nominal GNI, was equal to the GNI of 1999 (5.5 billion US$), and over 2000-2005 to two-and-a-half times the 1999 GNI. Based on the same growth scenario, we estimate the loss for a Palestinian resident, measured in terms of nominal GDI per capita, to be 30% of the 1999 level by the end of 2002 and 25% by the end of 2005.

Key words: economic cost, macro-economic indicators, Palestine

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1. Introduction

In a previous paper (Missaglia and De Boer, 2004)[1] we simulated the impact of different foreign assistance policies on the economy of Palestine from the beginning of the second intifada, 29 September 2000, until ultimo 2002. Thereto we constructed a computable general equilibrium (CGE) model that we calibrated on the 1998 social accounting matrix (SAM) constructed by the World Bank (WB). Based on information supplied in the study WB (2003b)[2] and on information obtained from the Palestinian Central Bureau of Statistics (PCBS) we gave a shock to the model and constructed a counterfactual SAM for 2002 on which we based our policy simulations.

At the time of writing we only disposed of estimates of the World Bank (WB, 2003 a, b, c) and of the International Monetary Fund (IMF, 2003) of macro figures for 2002. We were struck by the fact that there were substantial differences between these estimates and we decided to propose our own evaluation (De Boer and Missaglia, 2006)[3]. Our conclusion was that our estimates with the help of a static CGE model were remarkably close to those of IMF that based its estimates on an entirely different methodology (a macro-founded income-expenditure model). At the time of writing the first version of the last mentioned paper (March 2004) we learned from private communications that IMF, WB and PCBS were closely working together to reach consensus estimates.

In March 2007, IMF and World Bank (IMF&WB, 2007) published a first assessment of the economic developments in 2006 of the economy of Palestine and provided, among others, the consensus estimates of the macroeconomic figures for 2002 using data that are more up-to-date and more complete than the data IMF disposed of in 2003.

In De Boer and Missaglia (2007) we showed that our 2004 estimates of macro figures for 2002 are closer to the 2007 consensus estimates by IMF and WB than the 2003 estimates of IMF. We argued that the shortening of the time horizon and the quantity adjustment following the dramatic shock explain why our model performed better.

In the present paper we only consider the consensus estimates of the International Monetary Fund and the World Bank (IMF&WB, 2007) and extend the period of interest from 1999-2002 to 1994-2006.

In section 2 we summarize the most important political events of the last two decades with important economical consequences. Based on the real growth rates of gross domestic product (GDP) and gross national income (GNI) we distinguish four periods: 1994-1999 with high growth rates (on average: GDP 8.2%; GNI 9.2%); 2000-2002 with a strong decrease in GDP (on average 10.2%) and in GNI (on average 12.2%); 2003-2005 witnessing a modest recovery (both GDP and GNI increasing on average by 5.9%); and 2006 during which GDP decreased by 8.0% and GNI by 7.7%. It follows that three years are of special interest: 1999, the last complete year before the outbreak of the second intifada; 2002, the end of the period of strong decline; and 2005, the end of the period of modest recovery.

The International Monetary Fund and the World Bank give the nominal national accounts from 1999 up to 2006 included, but do not give the real national accounts for 2002 and 2005. However, they supply the real growth rates of GDP, GNI and of gross disposable income (GDI), as well as the real growth rates of the components of GDP, enabling us to derive the real national accounts of 2002 and 2005 (prices 1999). In the appendix to this paper we give account of our computations. In section 3 we present the real national accounts for 1999, 2002 and 2005, as well as a comparison between these years.

Having described the development of real GDP, its components, real GNI and GDI over the period 1999-2005, we turn to an assessment of the economic cost for Palestine due to the lack of peaceful resolution with Israel. The substantial decline in income earned in Israel and its settlements, a consequence of the Israeli policy of cutting back heavily on the issuance of work permits, is not incorporated in nominal gross domestic product. Therefore, we only give in section 4 an estimate of the economic cost for Palestine in terms of nominal gross national income (GNI). In order to estimate this cost, we need to have an estimate of GNI in the counterfactual situation that the lack of peaceful resolution did not take place. This estimate is based on the modest growth scenario, given in the footnote 7 of the report by IMF and

World Bank (IMF&WB, 2007): the real growth is put at 3%, whereas the price increase is put equal to 3%, as well. Based on this scenario the estimated cost over the period 2000-2002 is equal to 5,424 million US$, an amount equal to the consensus estimate of the GNI in 1999 (5,454 million US$). At the end of 2005 the estimated cost equals 2.5 times the 1999 GNI, whereas the loss at the end of 2006 is more than three times the 1999 GNI.

However, the economic cost for a Palestinian resident was less dramatic than anticipated from the cost for Palestine in terms of nominal GNI. Real net current transfers, consisting of private remittances from the large Palestinian expatriate population and aid flows (emergency assistance and budget support), increased from 399 million US$ in 1999 to 1,503 million US$ in 2002, and amounted to 1,298 million US$ in 2005. That is the reason why we also estimate the economic cost in terms of nominal GDI per capita. We use the same scenario of 3% real growth in GDI, together with a 3% price increase. In section 5 we present our findings: at the end of 2002 nominal GDI per capita decreased by 30% as compared to 1999, while at the end of the period of modest growth, 2005, the economic cost for a Palestinian amounted to an estimated loss of 25%.

Section 6, finally, contains our conclusions.

2. Conflict and growth

2.1. Conflict

We summarize the most important political events of the last two decades with important economical consequences.

In 1987 the first intifada (uprising) broke out and Hamas (in English: Islamic Resistance Movement) was founded. It is considered to be a terroristic organization by Western countries and is therefore not considered being a valid discussion partner in the peace process ever since. The first intifada formally ended with the 1993 Oslo agreements where Israel and the PLO recognized each other mutually. The main party in the PLO (Palestine Liberation Organization) was Fatah (in English: Palestinian National Liberation Movement), which, until 2003 was considered to be a terroristic organization, but became the discussion partner in the peace process ever since. Hamas was not a member of the PLO. In 1995 an Israeli extremist opposed to the peace accord assassinated Prime Minister Yitzhak Rabin. It led to violence in Israel and in the Palestinian territories to which the government of Israel responded with frequent closures of the border implying that Palestinian workers could not go and work in Israel and its settlements causing a considerable loss in their earnings. On 29 September 2000 the second intifada (Al Aqsa intifada) broke out. Besides closure, Israel reacted by a regime of check points and curfews in the Palestinian territories hindering the movement of people and goods, and by withholding the revenues (import duties and VAT) that Israel collects on behalf of the Palestinian Authority (PA). Although the second intifada never ended formally, some people consider the Road map to peace of the Quartet: European Union, Russia, United Nations and United States in April 2003 as the beginning of a new period in the history of Palestine. In January 2006 Hamas won the general elections and the Hamas-led government was confronted with a diplomatic and financial isolation by the international community, with internal tensions, and with tensions with Israel. In June 2007 Hamas seized power in the Gaza strip. In December 2007 the donor conference was held in Paris at which the Palestinian Authority asked for 5.5 billion US$ for financing its Reform and Development Program for 2008-2010 and at which donors pledged 7 billion US$.

2.2. Growth

In March 2003 the International Monetary Fund published the report "West Bank and Gaza: Economic Performance and Reform under Conflict Condition" (IMF, 2003) that dealt with the economic consequences of the second intifada over the period 2000-2002. From this publication we took the growth rates of real gross domestic production (GDP) and of real gross national income (GNI) over the period 1995-2000 that are reported below in the columns 2 and 3 of Table 1.

In March 2007 IMF and World Bank published the report "West Bank and Gaza: Economic Developments in 2006- A First Assessment" (IMF&WB, 2007) which dealt with the economic consequences of the victory of Hamas at the general elections in 2006. It was used during the preparation of the donor conference held on 17 December 2007 in Paris. From this publication we take the growth rates of real GDP, real GDI and of real gross disposable income (GDI) over the period 1999-2006 reported below in the columns 2, 3 and 4 of Table 1. The growth rates for 1999 and 2000 are the same in both publications. In the columns 5, 6 and 7 we give the index numbers of real GDP, GNI and GDI. We choose as base year 1999, the last complete year before the outbreak of the second intifada (on 29 September 2000).

Table 1. Growth rates and index numbers of real GDP, GNI and GDI

1 Year	2 Growth rate real GDP	3 Growth rate real GNI	4 Growth rate real GDI	5 Index number real GDP	6 Index number real GNI	7 Index number Real GDI
1994				67.3	64.5	
1995	6.1	8.5		71.4	70.0	
1996	2.5	0.8		73.2	70.6	
1997	12.2	12.4		82.1	79.3	
1998	11.8	16.3		91.8	92.3	92.8
1999	8.9	8.4	7.8	100	100	100
2000	-5.4	-6.8	-3.5	94.6	93.2	96.5
2001	-15.4	-20.1	-4.4	80.0	74.5	92.3
2002	-9.4	-9.1	-3.8	**72.5**	**67.7**	**88.7**
2003	5.8	6.6	-0.4	76.7	72.2	88.4
2004	6.0	4.3	4.4	81.3	75.3	92.3
2005	6.0	6.8	5.2	**86.2**	**80.4**	**97.1**
2006	-8.0	-7.6	0.0	79.3	74.3	97.1

Based on the real growth rates we distinguish four periods:

1. 1994-1999 (Post Oslo; pre-second intifada): high growth

During this period real GDP and real GNI, with the exception of 1996, showed a high growth rate: real GDP increased on average by 8.2% per year and real GNI on average by 9.2% per year. In November 2005 Rabin was assassinated leading to violence and to frequent closure of the border so that Palestinian workers could not go and work in Israel or in its settlements. Since income from labor in Israel is an important source of revenues (in 1999, for instance, net factor income amounted to 20.7% of GDP, see Table 2 below) the growth rates of real GDP and real GNI decreased drastically (to 2.5 and 0.8 percent, respectively).

2. 2000-2002 (Second intifada): strong decline

During this period there is a strong decrease in real GDP (on average 10.2%) and in GNI (on average 12.2%). The three main causes are closure, namely the imposition of restrictions on the movement of goods and services across borders and within Palestine, destruction of capital, and withholding of clearance revenues by Israel. The World Bank (WB, 2003b) estimated the number of Palestinians working in Israel and the settlements in September 2000 at 128,000. With the outbreak of the second intifada Israel cut back heavily on the issuance of work permits. In the last months of 2002 it begun to increase the number of work permits. The World Bank estimated that at the end of 2002 about 32,000 work permits were issued, though only half of these were actually being used. The physical damage resulting from the conflict was estimated to be US$ 305 million by the end of 2001 and US$ 930 million by the end of 2002. As a result of damage and fall in investment, the real productive capital stock declined by US$ 1.7 billion between 1999 and 2002. IMF (2003) estimated the withholding of clearance revenues to amount to US$ 1,749 million in 2001 and US$ 1,275 million in 2002. The cumulative amount, US$ 3,024 million, is equivalent to 67% of the GDP of 1999 (US$ 4,517 million, see Table 2 below).
In the columns 5, 6 and 7 of Table 1 we give, in bold, the index numbers for 2002. Compared to 1999 real GDP declined by 27.5%, real GNI by about one third, whereas real GDI “only” decreased by 11.3%. In section 3 we will have a closer look at these figures.

3. 2003-2005 (Road map to peace): modest recovery

During this period real GDP and real GNI showed a modest growth: both increased on average by 5.9 % per year. Since the real growth rates in GDP and GNI in 2003 are almost equal to those of 2004 and 2005, we conclude that, from the *economical* point of view, the end of the second intifada can be dated at ultimo 2002; the intifada started on 29 September 2000, so that, from the *economical* point of view, it lasted twenty-seven months.
In the columns 5, 6 and 7 of Table 1 we give, in bold, the index numbers for 2005. Compared to 1999 real GDP declined by 13.8%, real GNI by about 20%, whereas real GDI “only” decreased by 2.9%. In section 3 we will have a closer look at these figures.

4. 2006-present (Post election victory of Hamas)

On 25 January 2006 Hamas won the parliamentary elections: it obtained 76 on 132 seats. In March the Hamas-led Palestinian Authority government was formed. It was confronted with diplomatic and financial isolation by the international community, and with internal and external tensions. The first assessment of IMF and World Bank of the economical consequences of the isolation is a decrease in real GDP by 8.0% and a decrease by 7.7% in real GNI.

3. Strong decline (2000-2002) and modest recovery (2003-2005)

3.1. Introduction

In the previous section we identified a period with a strong decline, followed by a period with a modest recovery. It followed that three years are of special interest: 1999, the last complete year before the second intifada; 2002, the end of the period of strong decline; and 2005, the end of the period of modest recovery.
The International Monetary Fund and the World Bank do not give the real national accounts for 2002 and 2005, but they can be derived from data supplied in their publication: IMF&WB (2007, Tables 2 and 3). In the appendix to this paper we derive in the Tables A2 and A4 the real national accounts for 2002 and 2005, as well as the relevant index numbers. Table 2 summarizes the computations; the columns 2, 3 and 4 are taken from Table A2 (columns 3, 5 and 6), whereas the columns 5, 6, and 7 are taken from Table A4 (columns 4, 6 and 5).

Table 2. Consensus estimates of IMF&WB (2007) of the real national accounts of 1999, 2002 and 2005 (millions US$,1999 prices) and index numbers

1	2 1999	3 2002	4 Index 2002 (1999=100)	5 2005	6 Index 2005 (2002=100)	7 Index 2005 (1999=100)
Household consumption	4,510	3,675	81.5	4,442	120.9	98.5
Consumption PA	1,049	956	91.1	1,084	113.3	100.3
Gross private investment	1,415	533	37.7	632	118.4	44.6
Gross investment PA	320	222	69.6	279	125.5	87.3
Change in inventories	151	23	15.1	23	100.0	15.1
Exports	896	467	52.1	548	117.3	61.2
Imports (-)	3,824	2,602	68.1	3,114	119.7	81.4
Gross domestic product	4,517	3,275	**72.5**	3,893	118.9	**86.2**
Net factor income	937	417	44.5	490	117.7	52.3
Gross national income	5,454	3,692	**67.7**	4,384	118.7	**80.4**
Net current transfers	399	1,503	376.7	1,298	86.4	325.4
Gross disposable income	5,853	5,194	**88.7**	5,682	109.4	**97.1**

3.2. Strong decline (2000-2002)

In section 2 we already concluded from the data given in Table 1 that the index numbers for real GDP, GNI and GDI for 2002 (with base year 1999=100) were 72.5; 67.7; and 88.7, respectively. In the columns 2, 3 and 4 of Table 2 information on the components of real GDP, GNI and GDI is supplied.

We observe that household consumption decreased by 18.5%; whereas the PA consumption, mainly the wage bill of civil servants, dropped by only 8.9%.

Gross private investment witnessed a huge decrease, more than 60%, while PA investment dropped by 30%.The change in inventories is but a minor item.

Exports fell by almost 50%, whereas imports decreased by 32%. The trade deficit in 1999 amounted to 2,928 million US$, whereas the deficit in 2002 was equal to 2,135 million; a decrease of 27%.The real gross domestic product, as said before, decreased by 27.5%.

In 1999 the net factor income amounted to 937 million US$, which is 20.7% of GDP, a figure given in the previous section. It dropped to 417 million $. Because of the Israeli policy of closure income earned in Israel and its settlements fell by 55%.The real gross national income, as said before, decreased by one third.

Private remittances from the large Palestinian expatriate population and aid flows (emergency assistance and budget support) were almost multiplied by the factor 4, so that, thanks to these net current transfers, the real GDI only dropped by 11.3%. Real net current transfers served as cushion: in 1999 it amounted to 7.9% of GNI, whereas in 2002 it rose to 40.7% !

3.3. Modest recovery (2003-2005)

3.3.1. Comparison with 2002

It follows from column 6 of Table 2 that real GDP and real GDI both grew by about 19% as compared to the last year of the period of strong decline (2002). Most components grew in the same order of magnitude; the consumption of the PA lagging slightly behind with an increase of 13.3%. But this was compensated by an increase of its investments by 25.5%: if we take the sum of PA consumption and PA investment, then the real expenditure of the PA was equal to 1,178 million US$ in 2002 and to 1,363 million US$ in 2005 (an increase by 15.7%). During this period inventories, as said before a minor item, were estimated to remain at their 2002 level.

Real GNI only grew by 9.4%. This was caused by the fact that real net current transfers declined by 13.6%: emergency assistance and budget support diminished because of the recovery of Palestinian economy. Real net current transfers, equivalent to 40.7% of real GNI in 2002, decreased to 29.6% of real GNI in 2005.

3.3.2. Comparison with 1999

In section 2 we already concluded from the data given in Table 1 that the index numbers for real GDP, GNI and GDI for 2005 (with base year 1999=100) were 86.2; 80.4; and 97.1, respectively. In the columns 5, 6 and 7 of Table 2 information on the components of real GDP, GNI and GDI is supplied.

Consumption of households is almost back at its 1999 level, whereas there is a very small increase in PA consumption. The decline in GDP of 13.8% is caused by a strong decline in private and PA investment (55% and 13%, respectively) and by the deterioration of the trade balance: exports declined by almost 40%, while imports “only” declined by almost 20%.

From 2002 to 2005 net factor income rose by 17.7%, but this increase hardly caught up the deterioration between 1999 and 2002. In 2002 real net factor income dropped to 44.5% of the pre-intifada level (1999), whereas in 2005 it was only equal to 52.3% of the level of 1999. This decline by 47.7%, as compared to 1999, caused the decline of almost 20% in GNI.

Net current transfers declined in 2005 by 13.6% as compared to 2002, but this decline was largely offset by the increase of 276.7% between 1999 and 2002. As compared to 1999 real net current transfers in 2005 increased by 225.4%, so that real GDI only decreased by 2.9%.

According to all indicators (GDP, GNI and GDI) the large decline in the Palestinian economy during the twenty-seven months of intifada was not caught up by the end of 2005; the year preceding the negative impact on the economy of Hamas’ victory at the January 2006 general elections that led to a renewed isolation of Palestine.

4. Economic cost in terms of nominal gross national income

The consequence of the Israeli policy of cutting back heavily on the issuance of work permits, the substantial decline in income earned in Israel and its settlements, is not incorporated in nominal gross domestic product. That is the reason why we only give an estimate of the economic cost for Palestine, due to the lack of peaceful resolution with Israel, in terms of nominal gross national income (GNI).

In order to estimate this cost, we need to have an estimate of GNI in the counterfactual situation that the lack of peaceful resolution did not take place. This estimate is based on the modest growth scenario, given in the footnote 7 of the report by IMF and World Bank (IMF&WB, 2007).The real growth is put at 3%, which is modest, because in the period of the Road map to peace (2003-2005) GNI grew on average by 5.9% per year (see our Table 1). The price increase in the growth scenario is also put at 3%.

In the second column of Table 3 we give the realized nominal GNI as reported by IMF&WB (2007, Table 3), whereas in the third column we calculate the nominal GNI according to the growth scenario (all figures reading in millions of US$). In column 4 we estimate the cost by subtracting the figures in column 2 from those in column 3, whereas in column 5 we give the cumulated cost (million US$). In the sixth column we give the figures in column 4 as percentage of the nominal GNI of 1999 whereas in column 7 we cumulate these percentages.

Table 3. Estimated economic cost due to lack of peaceful resolution with Israel (columns 2-5: millions US$, current prices; columns 6-7: % of GNI 1999)

	2 GNI consensus estimates IMF&WB	3 GNI growth scenario IMF&WB*	4 Estimated cost	5 Estimated cost (cumulative)	6 Estimated cost (% 1999)	7 Estimated cost (cumulative % 1999)
1999	5,454	5,454				
2000	5,274	5,786	512	512	9.4	9.4
2001	4,193	6,139	1,946	2,458	35.7	45.1
2002	3,546	6,512	2,966	5,424	54.4	99.4
2003	4,105	6,909	2,804	8,228	51.4	150.9
2004	4,534	7,330	2,796	11,024	51.3	202.1
2005	5,017	7,776	2,759	13,783	50.6	250.7
2006	4,929	8,250	3,321	17,104	60.9	313.6

*Real growth: 3%; price increase: 3%.

The second intifada broke out on 29 September 2000 so that the cost in 2000 is incurred over a period of three months only: it amounted to 512 million US$, representing 9.4% of GNI of 1999.

In section 2 we concluded that from the economical point of view the end of the second intifada can be dated at ultimo 2002. It follows from column 5 that the cumulated estimated cost amounted to 5,424 million US$ which is equivalent to the nominal GNI of 1999 (5,454 million US). It is as if the residents of Palestine completely stopped working in Palestine and in Israel and its settlements for one year out of 27 months. The estimated cost is also equivalent to the amount of 5.5 billion US$ that the Palestinian Authority asked at the 17 December 2007 Paris donor conference for financing its Reform and Development Program 2008-2010.

During the period of the Road map to peace (2003-2005) the estimated cost, based on the modest growth scenario of 3% real growth and 3% price increase, declined only marginally from 54.4% of 1999 GNI in 2002 to 50.6%, as can be seen from column 6. The cumulated cost over this period amounted to 150% of 1999 GNI. If we add this to the cumulative cost over the period of the second intifada (almost 100% of 1999 GNI), we arrive at an estimated cost of 2.5 times the nominal 1999 GNI by the end of 2005.

According to the first assessment of IMF and World Bank of the economical consequences of the victory of Hamas at the general elections of January 2006, the estimated cost in 2006 rose from 50.6% in 2005 to 60.9% and the cumulated estimated cost to 313.6%. This means that over a period of six years and a quarter (29 September 2000- ultimo 2006) the estimated cost is about three GNI’s of 1999.

5. Economic cost in terms of nominal gross disposable income per capita

Real net current transfers increased from 399 million US$ in 1999 to 1,503 million US$ in 2002, and amounted to 1,298 million US$ in 2005 (see Table 1). This huge increase was the reason why real GDI decreased by “”only” 11.3% over the period 1999-2002 (real GNI decreasing by one third), and why it “only” decreased by 2.9% over the period 1999-2005 (real GNI decreasing by almost 20%). Consequently, the economic cost for a Palestinian resident was less dramatic than anticipated from the cost in terms of nominal GNI evaluated in the previous section. That is the reason why we also estimate the economic cost in terms of nominal GDI per capita. As in section 4 we need to have an estimate of GDI in the counterfactual situation that the lack of peaceful resolution did not take place. As before, we base our estimate on the modest growth scenario of 3% real growth and 3% price increase.

In the second column of Table 4 we give the realized nominal GDI as reported by the IMF&WB (2007, Table 3), whereas in the third column we calculate the nominal GDI according to the growth scenario (all figures reading in millions of US$). The fourth column contains the realized nominal GDI per capita (IMF&WB, 2007, Table 4). From the columns 2 and 4 we can derive the size of the population in the various years which are used in the derivation of the nominal GDI per capita reported upon in column 5. The estimated cost in terms of GDI per capita are given in the sixth column, while in column 7 the cost is given as percentage of the GDI per capita in 1999.

Table 4 Estimated loss due to lack of peaceful resolution (columns 2-3: millions US$, current prices; columns 4 and 5 US$; columns 6-7: % of GNI 1999)

1 Year	2 GDI consensus estimates IMF&WB	3 GDI growth scenario*	4 GDI per capita consensus estimates IMF&WB	5 GDI per capita growth scenario*	6 Estimated loss 5-4	7 Estimated loss (% 1999)
1999	5,853	5,853	1,938	1,938		
2000	5,860	6,209	1,861	1,972	111	5.7
2001	5,557	6,588	1,697	2,012	315	16.2
2002	4,985	6,989	1,469	2,059	590	30.5
2003	5,395	7,414	1,535	2,110	575	29.6
2004	5,951	7,866	1,636	2,162	526	27.2
2005	6,486	8,345	1,724	2,218	494	25.5
2006	6,859	8,853	1,764	2,277	513	26.5

*Real growth: 3%; price increase: 3%.

The realized nominal GDI per capita amounted to 1,938 US$ per capita in 1999 and it decreased to 1,697 US$ by the end of 2002; a decrease by about one quarter. Thereafter, there is a modest increase to 1,724 US$ per capita by the end of 2005; still 11% below the 1999 level.

The estimated cost amounts 590 US$ per capita by the end of 2002, a decrease of 30% as compared to 1999. From 2002 to 2005 the estimated cost decreases, but the catch-up is very modest: by the end of 2005 there is still a decrease of about 25% as compared to the pre-intifada level. According to IMF&WB's first assessment, the cost in 2006 rose to 513 US$ per capita, an increase by one percentage point as compared to 2005.

6. Concluding remarks

In this paper we used the consensus estimates of the International Monetary Fund (IMF) and the World Bank (WB) of the national accounts of Palestine over the period 1994-2006 (IMF&WB, 2007). Based on the real growth rates of gross domestic product (GDP) and gross national income (GNI), we distinguished four periods:

1. 1994-1999, during which real GDP and real GNI showed a high growth rate: real GDP increased on average by 8.2% per year and real GNI on average by 9.2% per year.

2. 2000-2002, during which there is a strong decrease in real GDP (on average 10.2% per year) and in GNI (on average 12.2% per year). The three main causes are closure, namely the imposition of restrictions on the movement of goods and services across borders and within Palestine, destruction of capital, and withholding of clearance revenues by Israel.

3. 2003-2005, during which real GDP and real GNI both increased on average by a modest 5.9 % per year.

4. 2006, the Hamas-led Palestinian Authority government was confronted with diplomatic and financial isolation by the international community, and with internal and external tensions. The first assessment of IMF and World Bank of the economical consequences of the isolation is a decrease in real GDP of 8.0% and a decrease of 7.7% in real GNI.

Since the real growth rates in GDP and GNI in 2003 are almost equal to those of 2004 and 2005, we concluded that, from the *economical* point of view, the end of the second intifada can be dated at ultimo 2002; the intifada started on 29 September 2000, so that, from the *economical* point of view, it lasted twenty-seven months.

It also followed that three years are of special interest: 1999, the last complete year before the second intifada; 2002, the end of the period of strong decline; and 2005, the end of the period of modest recovery. In section 3 we presented the real national accounts for these three years.

As compared to 1999, real GDP in 2002 decreased by 27.5%. Because of the Israeli policy of closure income earned in Israel and its settlements fell by 55% and the real gross national income decreased even more than GDP: it declined by one third. Private remittances from the large Palestinian expatriate population and aid flows (emergency assistance and budget support) were almost multiplied by the factor 4 so that the real gross disposable income (GDI) “only” dropped by 11.3%. Real net current transfers served as cushion: in 1999 it amounted to 7.9% of GNI, whereas in 2002 it rose to 40.7%.

As compared to 2002, real GDP and real GDI both grew by about 19% over the period 2003-2005, while real GNI only grew by 9.4%. This was caused by the fact that real net current transfers declined by 13.6%.

As compared to 1999, real GDP in 2005 declined by 13.8%. From 2002 to 2005 net factor income rose by 17.7%, but as compared to 1999 it decreased by 47.7% causing a decline of almost 20% in GNI. Net current transfers declined in 2005 by 13.6% as compared to 2002, but this decline was largely offset by the increase between 1999 and 2002. As compared to 1999 real net current transfers in 2005 increased by 225.4%, so that real GDI “only” decreased by 2.9%.

According to all indicators (GDP, GNI and GDI) the large decline in the Palestinian economy during the twenty-seven months of intifada has not been caught up by the end of 2005.

In section 4 we gave an estimate of the economic cost for Palestine, due to the lack of peaceful resolution with Israel, in terms of nominal gross national income (GNI). Thereto, we needed an estimate of GNI in the counterfactual situation that the lack of peaceful resolution did not take place. We based this estimate on the modest growth scenario given by IMF and World Bank (IMF&WB, 2007): real growth was put at 3%, and the price increase at 3%, as well. Based on this scenario the estimated cost over the period 2000-2002 is equal to 5,424 million US$, an amount equal to the consensus estimate of the GNI in 1999 (5,454 million US$). It is as if the residents of Palestine completely stopped working in Palestine and in Israel and its settlements for one year out of 27 months of intifada. The estimated cost is also equivalent to the amount of 5.5 billion US$ that the Palestinian Authority asked at the 17 December 2007 Paris donor conference for financing its Reform and Development Program 2008-2010.

At the end of 2005 the estimated cost equaled 2.5 times the 1999 GNI, and by the end of 2006 more than three. This means that over a period of six years and a quarter (29 September 2000- ultimo 2006) Palestine lost about three GNI's of 1999.

However, the economic cost for a Palestinian resident was less dramatic than anticipated from the cost for Palestine in terms of nominal GNI. Real net current transfers in 2002 were 276% higher than in 1999, whereas in 2005 they were 225% higher. In section 5 we estimated the economic cost in terms of nominal GDI per capita. We used the same scenario of 3% real growth in GDI; together with a 3% price increase for the counterfactual situation that the lack of peaceful resolution did not take place. According to our calculations, nominal GDI per capita decreased by 30% at the end of 2002, as compared to 1999, while at the end of 2005, the economic cost for a Palestinian amounted to an estimated loss of 25%.

The conclusion of this paper is far from being original: the economy of Palestine has been hit very hard ever since the outbreak of the second intifada and the economical situation of its residents have severely deteriorated. This calls for a peaceful resolution and a massive financial support from the international community.

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Appendix: Derivation of the consensus estimates of the real national accounts of 2002 and 2005

IMF&WB (2007) do not give the National Accounts in real terms, but we can derive them from the data contained in their Tables 2 and 3.

Below, we first give account of the derivation of the National Accounts for 2002 in real terms. In the columns 2-4 of table A1 the percentage changes in macro variables for the years 2000, 2001 and 2002 have been taken from Table 2 of IMF&WB (2007). In column 5 the index numbers are computed. The index of real household consumption, for instance, is equal to: [(1-0.044)x(1-0.054)x(1-0.085)]x100 =82.7504.

Table A1. Percentage changes in real macro variables and computation of the index numbers for 2002 (1999=100)

1 Macro variable	2 2000	3 2001	4 2002	5 Index number (1999=100)
Household consumption	-4.4	-5.4	-8.5	82.7504
Consumption PA*	9.4	-11.6	-4.3	92.5511
Gross private investment	-26.5	-52.1	8.7	38.2695
Gross investment PA*	-29.4	-9.9	11.1	70.6714
Change in inventories	-73.5	-8.9	-36.7	15.2816
Exports	-6.8	-34.7	-13.0	52.9479
Imports	-13.9	-18.1	-2.0	69.1056
Gross domestic product (GDP)	-5.4	-15.4	-9.4	72.5086
Gross national income (GNI)	-6.8	-20.1	-9.1	67.6903
Gross disposable income (GDI)	-3.5	-4.4	-3.8	88.7483

*PA stands for Palestinian Authority.

In column 2 of Table A2 the components of GDP in 1999 are taken from Table 3 of IMF&WB (2007). Calculating GDP from these figures, we arrive at 4,495 million US$, whereas the GDP reported in Table 3 of IMF&WB (2007) is equal to 4,517 million. In column 3 we balance the figures by multiplying the components of column 2 by the factor 4,517/4,495. We give the values of GNI and of GDI reported in Table 3 of IMF&WB. The value for net factor income is computed by taking the difference between GNI and GDP and the value of net current transfers by taking the difference between GDI and GNI.

Next, we multiply the figures of the components of GDP given in column 3 by the index numbers (divided by 100) calculated in column 5 of Table A1. According to these figures GDP is equal to 3,326 million US$. On the other hand, the GDP of 1999 given in column 3 (4,517) multiplied by the pertinent index number (divided by 100) in column 5 of Table A1 (0.725086) yields a value of 3,275 million US$. In column 4 we balance the figures of column 3 by multiplying them by the factor 3,275/3,326. In column 5 of Table A2, finally, we give the index numbers computed.

Table A2. Consensus estimates of IMF&WB (2007) of the real national accounts for 2002 (US$ million, prices 1999) and index numbers 2002 (1999=100)

1 Macro variable	2 1999	3 1999 (balanced)	4 2002	5 2002 (balanced)	6 2002 (index 1999=100)
Household consumption	4,488	4,510	3,732	3,675	81.5
Consumption PA	1,044	1,049	971	956	91.1
Gross private investment	1,408	1,415	541	533	37.7
Gross investment PA	318	320	226	222	69.6
Change in inventories	150	151	23	23	15.1
Exports	892	896	475	467	52.1
Imports (-)	3,805	3,824	2,642	2,602	68.1
Gross domestic product (GDP)	4,495	4,517	3,326	3,275	72.5
Net factor income		937		417	44.5
Gross national income (GNI)		5,454		3,692	67.7
Net current transfers		399		1,503	376.7
Gross disposable income(GDI)		5,853		5,194	88.7

Secondly, we derive the national accounts in real terms for 2005. In column 2 of Table A3 we give the index numbers of 2002 (1999=100) reported in column 5 of Table A1. The data in the columns 3, 4 and 5 are taken from Table 2 of IMF& WB (2007). In column 6 we give the computed index numbers of 2005 (1999=100).

Table A3. Percentage changes in real macro variables and computation of the index numbers 2005 (1999=100)

1 Macro variable	2 Index 2002 (1999=100)	3 2003	4 2004	5 2005	6 Index 2005 (1999=100)
Household consumption	82.7504	6.0	8.5	5.6	100.5008
Consumption PA	92.5511	-1.6	9.5	5.7	105.4061
Gross private investment	38.2695	16.9	0.4	1.4	45.5448
Gross investment PA	70.6714	20.6	1.2	3.3	89.0988
Change in inventories	15.2816	0	0	0	15.2816
Exports	52.9479	-4.0	13.5	8.2	62.4227
Imports	69.1056	4.8	9.9	4.4	83.0946
Gross domestic product	72.5086	5.8	6.0	6.0	86.1960
Gross national income	67.6903	6.6	4.3	6.8	80.3784
Gross disposable income	88.7483	-0.4	4.4	5.2	97.0814

In column 2 of Table A4 the components of GDP in 1999 are taken from column 3 of Table A2 above. We multiply the figures of the components of GDP given in this column 2 by the corresponding index numbers computed in column 6 of Table A3 above.

Calculating GDP from these figures, we arrive at 3,973 million US$. On the other hand, the GDP of 1999 given in column 2 (4,517) multiplied by the pertinent index number (divided by 100) in column 6 of Table A3 (0.861960) yields a value of 3,893 million US$.

In column 4 we balance the figures of column 3 by multiplying them by the factor 3,893/3,973. Next, we multiply GNI (5,454) and GDI (5,853) of 1999 given in column 2 by the pertinent index numbers (divided by 100) given in column 6 of Table A3 (0.803784 and 0.970814, respectively) to obtain GNI and GDI of 2005. Then, the value for net factor income is computed by taking the difference between GNI and GDP and the value of net current transfers by taking the difference between GDI and GNI. In column 5 we give the index numbers of 2005 with base year 1999=100, whereas, using the real national accounts for

2002 given in column 4 of Table A2 above, we give in column 6 the index numbers of 2005 with base year 2002 =100.

Table A4. Consensus estimates of IMF&WB (2007) of the real national accounts for 2005 (US$ million, prices 1999) and index numbers for 2005 (1999=100) and for 2005 (2002=100)

1 Macro variable	2 1999 (balanced)	3 2005	4 2005 (balanced)	5 2005 (index 1999=100)	6 2005 (index 2002=100)
Household consumption	4,510	4,533	4,442	98.5	120.9
Consumption PA	1,049	1,106	1,084	100.3	113.3
Gross private investment	1,415	644	632	44.6	118.4
Gross investment PA	320	285	279	87.3	125.5
Change in inventories	151	23	23	15.0	100.0
Exports	896	560	548	61.2	117.3
Imports (-)	3,824	3,177	3,114	81.4	119.7
Gross domestic product	4,517	3,973	3,893	86.2	118.9
Net factor income	937		490	52.3	117.7
Gross national income	5,454		4,384	80.4	118.7
Net current transfers	399		1,298	325.4	86.4
Gross disposable income	5,853		5,682	97.1	109.4

[1] A preliminary version of this paper was presented at the Second International Conference of the Middle East Economic Association, Paris, France, June 2003.
[2] The reports of De Boer and Missaglia (2007), IMF&WB (2007), IMF (2003) and WB (2003a,b,c) can be found at http://people.few.eur.nl/pmdeboer/research.
[3] A preliminary version of this paper was presented at the Third International Conference of the Middle East Economic Association, Byblos, Lebanon, May 2004.