The Economic Costs of the Israeli Occupation for the Palestinian People: Arrested Development and Poverty in the West Bank

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Note

This study was prepared by the UNCTAD secretariat, drawing on research prepared by UNCTAD consultant Mr. Jean-Louis Arcand, Professor, International Economics, Graduate Institute of International and Development Studies, Geneva. The study seeks to stimulate debate on the research topic.

The term "dollars" ($) refers to United States dollars.

In tables, a hyphen (-) indicates that the item is not applicable.

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Abbreviations

EBP	empirical best prediction
ECDF	empirical cumulative density function
GDP	gross domestic product
GIC	growth incidence curve
OCHA	Office for the Coordination of Humanitarian Affairs
PCBS	Palestinian Central Bureau of Statistics

Executive summary

On 28 September 2000, the second popular uprising (intifada) broke out in the Occupied Palestinian Territory. Thousands of Palestinians were killed and tens of thousands were injured. Israel tightened its closure policy and implemented more stringent measures in the territory. More than two decades since the outbreak of the second intifada, the complex matrix of controls over the Palestinian economy persists. It features a permit system, roadblocks, earth mounds, trenches, road checkpoints, road gates and the separation barrier. The impact of the control system on the fragile regional economy of the West Bank has been far from being limited to the loss of one third of its gross domestic product (GDP) between 2000 and 2002. More significantly, it has had a long-lasting negative impact that has affected all economic sectors for at least 20 years. In addition, it has inflicted serious dislocations and enormous income losses on the Palestinian economy and has entailed volatile economic growth and persistently high unemployment and poverty rates, as well as chronic internal and external imbalances, which have been difficult to reverse.

After the signing of the Oslo Accords in 1993 and 1995, the West Bank experienced negative economic growth in the three years between 2000 and 2002, which corresponds to the peak of the second intifada. In these three years, the regional economy of the West Bank shrank by 32.8 per cent, GDP per capita dropped by 40 per cent and unemployment peaked, reaching 28 per cent in 2002. In the period 2007–2019, the economy of the West Bank grew to 2.5 times its size in 1999, yet the average unemployment rate was nearly twice as high as in 1999. In fact, the negative growth associated with the second intifada was followed by two decades of jobless growth, fostering an unemployment rate of about 18 per cent between 1995 and 2019. Without employment in Israel and settlements, unemployment would have been 16 per cent higher, on par with the extremely high rates in the Gaza Strip. The cumulative economic cost of the Israeli measures in the West Bank, in the period 2000–2019, is estimated at 4.5 times the size of the regional economy of the West Bank in 2019.

This study provides estimates of the economic costs incurred by the Palestinian people, due to the closures, restrictions and military operations in the West Bank imposed by the occupying Power in the aftermath of the second intifada, in the period 2000–2019, by considering what the situation would have been had these events not occurred. A counterfactual (alternative) growth path for the period 2000–2019 is constructed by assuming that the 32.8 per cent drop in the West Bank GDP did not occur and that, instead, the economy grew at the average rate of the periods 1995–1999 and 2007–2019, that is, 7.1 per cent per year. Under this alternative scenario, in the 2000–2019 period, the annual GDP of the West Bank would have been, on average, 35 per cent higher than its actual level, leading to a cumulative real GDP increase of $57.7 billion (economic cost in constant 2015 dollars), equivalent to 4.5 times the GDP of the West Bank in 2019 or 3.5 times the GDP of the Occupied Palestinian Territory in 2019. In 2019, GDP per capita would have been $2,142, or 44 per cent higher than its realized, actual level. It is important to stress that these are only estimates of lost potential GDP and do not include the cost of damage and destruction of Palestinian assets under Israeli military operations and other measures.

The study also provides an analysis of the deterioration of household living conditions and welfare due to the closures, restrictions and military operations in the West Bank in the wake of the second intifada (1998–2017), using data from household surveys and censuses. The impact is assessed in terms of the poverty headcount, the poverty gap and the minimal cost of raising all households to the poverty line in selected years in the period 1998–2017, namely, 1998 (before the second intifada), 2004 (during the second intifada) and 2007 and 2017 (after the second intifada). The analysis is based on two methods: survey-based and empirical best prediction.

The evolution of the poverty headcount and the poverty gap reflects the economic and social consequences of the severe response of the occupying Power to the second intifada. The poverty rate increased from 11 per cent in 1998 to 35 per cent in 2004. It only returned to its pre-second intifada level nearly two decades later, in 2017. In 2004, the poverty gap was four times higher than in 1998, reaching 11 per cent, and returning to its 1998 level only in 2017. The cost of occupation, in terms of poverty, is substantial, with the poorer segments of the population disproportionately impacted. Had the stricter Israeli restrictions imposed after the second intifada not occurred, the poverty rate in the West Bank in 2004 could have been 11.7 per cent; only one third of the observed 35.4 per cent. The analysis indicates that the real minimum cost of eliminating poverty in the West Bank jumped from $73 million (constant 2015 dollars) in 1998 to $356 million and $428 million in 2004 and 2007, respectively.

Finally, this study sketches several lessons learned and recommendations for putting the West Bank on a more sustainable development path. All mobility restrictions in the Occupied Palestinian Territory need to be lifted and contiguity of its constituents, including East Jerusalem, needs to be re-established. Palestinian public and private operators must be allowed to function in Area C, which represents at least 60 per cent of the West Bank and contains its most valuable economic and natural resources.

I. Introduction and objectives

A. Mandate

The Israeli occupation has had profound socioeconomic impacts on the Palestinian people and the heavy costs imposed on them have been accumulating over time. The General Assembly of the United Nations, in seven resolutions (69/20, 70/12, 71/20, 72/13, 73/18, 74/10 and 75/20), requested UNCTAD to report to it on the economic costs of the Israeli occupation for the Palestinian people. Analyses and estimations of these economic costs have been presented in various reports prepared in response to the resolutions.

In 2016, UNCTAD prepared a note transmitted by the Secretary-General of the United Nations to the General Assembly titled "Economic costs of the Israeli occupation for the Palestinian people". This was followed by several detailed reports submitted to the General Assembly.[1]

In these reports, UNCTAD emphasizes that occupation continues to impose substantial economic costs on the Palestinian people. It also highlights the urgent need for further evaluation of the totality of costs and a greater understanding of their impact on the welfare of the Palestinian people and the prospects for economic development in the Occupied Palestinian Territory. Within this context, UNCTAD stresses the need to establish, within the United Nations system, a systematic, evidence-based, comprehensive and sustainable framework for estimating the economic costs of occupation as an essential step in reversing its damages, achieving the Sustainable Development Goals in the Occupied Palestinian Territory and forging a just and lasting peace in the Middle East.

B. Objectives

The main objective of this study is to shed light on the impact of the Israeli restrictions on the economy of the West Bank and the socioeconomic conditions of its households in the period 1998–2019, with a special focus on the impact of the restrictions imposed by the occupying Power in the aftermath of the second intifada. This research is part of the work of UNCTAD on the economic costs of the Israeli occupation for the Palestinian people.

The first part of the study provides an overview of the Israeli restrictions and measures during the second intifada and in the post-intifada period. The second part considers a counterfactual (alternative) growth path for the West Bank from the year 2000 onwards, to give some indication of the range of the potential economic growth that could have been realized if the restrictions imposed upon the outbreak of the second intifada had not been implemented, or the economic costs in terms of GDP loss. The third part of the study applies the empirical best prediction (EBP) method of Molina, Rao and Datta (2015) to combine the strengths of household surveys and censuses in order to estimate the poverty headcount and other indicators,

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[1] Reports prepared by UNCTAD on the economic costs of the Israeli occupation for the Palestinian people include A/71/174 (2016), A/73/201 (2018), A/74/272 (2019) and A/75/310 (2020).

which in turn allow for an assessment of the impact of the second intifada using poverty gap and depth indicators. Finally, the study provides a set of conclusions and recommendations for the occupying Power, Palestinian policymakers, the international community and development partners.

C. Previous work by UNCTAD on the economic costs of the Israeli occupation

Further to the reports prepared for and submitted to the General Assembly mentioned above, UNCTAD has produced technical studies on the economic costs of the Israeli occupation for the Palestinian people. The series began with *The Economic Costs of the Israeli Occupation for the Palestinian People and their Human Right to Development: Legal Dimensions* and was followed by *The Economic Costs of the Israeli Occupation for the Palestinian People: The Unrealized Oil and Natural Gas Potential* and *The Economic Costs of the Israeli Occupation for the Palestinian People: Cumulative Fiscal Costs*.

The latest study in this series, published in 2020, is titled *The Economic Costs of the Israeli Occupation for the Palestinian People: The Impoverishment of Gaza under Blockade*. The study looked at the critical situation in Gaza since the beginning of the Israeli blockade in 2007. It provided an estimate of the costs of the closures, restrictions and military operations for the Palestinian people in Gaza in the period 2007–2018, with a particular focus on the level and depth of poverty as an indicator of the socioeconomic conditions at the household level.

The present study complements the previous one on Gaza by focusing quantitative attention on the major shock to the West Bank, that is, the restrictions and closure policy implemented by the occupying Power in the aftermath of the second intifada. The previous study focused on the ongoing shock experienced in Gaza and the present one considers the greater shock that affected the West Bank.

II. Overview: The West Bank and the second intifada

A. Background

The second popular uprising (intifada) broke out on 28 September 2000, following the failure of the Camp David Summit in July 2000 to reach a final peaceful settlement between the Palestinian National Authority and the occupying Power. Israel imposed a complete closure on the Occupied Palestinian Territory that caused a serious economic dislocation and significant income losses. According to the Israeli Information Centre for Human Rights in the Occupied Territories, the number of closure days increased significantly starting in October 2000, amounting to 244 days in 2001, then declining to 122 in 2006 before dropping to 34 days in 2007 (B'Tselem, 2021). On 29 March 2002, Israel launched Operation "Defensive Shield" in the West Bank, which started with the reoccupation of Ramallah, followed by the rest of the Palestinian cities. The Israel Defense Forces announced the official end of the operation on 21 April 2002. However, the incursions into Palestinian towns and cities from which the Israel Defense Forces had withdrawn continued unabated beyond 2002 (World Bank, 2004).

According to the Office for the Coordination of Humanitarian Affairs (OCHA), between September 2000 and the end of July 2007, at least 5,848 people were killed either directly or as an indirect consequence of the confrontations during the second intifada, and for every person killed, approximately seven were also injured. Overall, 4,228 Palestinians were killed, most of them civilians, and of the overall number of children killed, 88 per cent were Palestinian and 12 percent were Israeli (OCHA, 2007).

During the second intifada, Israel imposed a complex system of mobility restrictions that was incrementally tightened after October 2000. This system has effectively turned the West Bank into an archipelago of islands isolated by physical barriers in the form of permanent and flying checkpoints, metal gates, earth mounds and walls, roadblocks and trenches, in addition to being subject to the closure policy and curfews. By 2005, 600 of these mobility restrictions were still in place, and the separation barrier has created new physical and economic constraints. Moreover, Palestinians were either restricted or entirely prohibited from using 41 roads covering over 700 km of roadways, including several main roads (OCHA, 2005).

The term "closure" refers to the restrictions imposed by the occupying Power on the free movement of Palestinian labour and goods across borders, within the West Bank, within Gaza and between the two areas. These restrictions take three forms: internal closure within the West Bank and Gaza, reinforced periodically by curfews; external closure of the crossings between Israel and the West Bank and between Israel and Gaza; and external closure of the crossings between the West Bank and Jordan and between Gaza and Egypt (World Bank, 2004). Under the border closures, Palestinians were not allowed to enter occupied East Jerusalem or Israel or travel to Egypt and Jordan, which effectively disconnected them from the rest of the world. Under internal closures, Palestinians were not allowed to move between the West Bank and

Gaza or between urban centres within the West Bank and surrounding villages (World Bank, 2002; World Bank, 2003; World Bank, 2004).

In addition, Israel imposed a full curfew on Palestinian cities and villages that at times lasted several months. These curfews paralyzed economic activity and deprived large sections of the population of their income, magnifying their vulnerability to various types of shocks. Palestinians who worked in Israel and settlements could not reach their workplaces under curfew conditions and the demand for non-regular wage earners throughout the West Bank diminished. Self-employed persons in urban areas and refugee camps could not open shops and their relatives who served as unpaid employees could not go to work. In addition to the closures and curfews and the destruction of public and private infrastructure, Israel withheld Palestinian clearance revenues from December 2000 to December 2002, which not only undermined the ability of the Palestinian National Authority to plan and manage its finances and development projects but also posed a significant challenge to its ability to meet its financial obligations, in particular paying the public wage bill, paying contractors and private suppliers and covering current expenditures in the public budget (UNCTAD, 2019a).

This long-term closure has dissected the Occupied Palestinian Territory into small, isolated islands surrounded by the Israel Defense Forces and Israeli settlements and their infrastructure and has hampered the movement of goods and factors of production, thereby precipitating a drastic decline in economic activity. Furthermore, the second intifada aggravated deep-seated structural weaknesses and vulnerabilities to external shocks and the tightening and deepening of the prolonged occupation, as manifested by volatile economic growth, persistently high unemployment rates and chronic internal and external imbalances (UNCTAD, 2006).

B. The aftermath of the second intifada

Two decades after the second intifada, the complex matrix of controls over the Palestinian economy, featuring a permit system, road checkpoints, road gates, earth mounds, roadblocks and trenches, as well as the separation barrier, is still largely in place. The West Bank is divided into disconnected islands; the only contiguous part is Area C, which remains under the control of Israel and inaccessible to Palestinian producers, although it has the most valuable natural resources, such as fertile land, minerals and stones, as well as tourist attractions and cosmetic products. The separation barrier, along with settlements, deepens the physical, administrative and legal fragmentation of the Occupied Palestinian Territory.

As a result of conflict, Palestinians in the West Bank are subject to injuries and to loss of life, as well as punitive demolition of houses and productive assets, such as trees. Moreover, the construction of the separation barrier and the installation of several hundred checkpoints by the occupying Power interrupt the movement of Palestinian people and goods and hinder production and trade. Furthermore, the volatility of employment of Palestinian labour in the Israeli economy and settlements has a negative impact not only on the level of household consumption but on the whole economy. This combination of factors has been both destructive

and self-reinforcing, ultimately leading to significant distortions and structural changes in the Palestinian economy (UNCTAD, 2017).

C. The direct cost of measures imposed by Israel in the aftermath of the second intifada

Indicators of the impact and costs of the second intifada include the following:

- The cumulative economic opportunity cost in terms of lost potential income over the period 2000–2004 is estimated at $6.4 billion, or 82 per cent of the Palestinian GDP in 1999 (UNCTAD, 2005).

- Physical capital loss is estimated at $3.5 billion, as a result of the destruction of public and private infrastructure and capital stock and the overuse of surviving physical capital, equivalent to 30 per cent of pre-2000 Palestinian capital stock (UNCTAD, 2005).

- In the four years ending in August 2004, 2,370 housing units were destroyed in Gaza, with approximately 22,800 people left homeless and, in 2004 alone, 1,399 houses in the West Bank and Gaza were destroyed, with 10,683 people left homeless (UNCTAD, 2005).

- The estimated overall damage to the economy during the first 15 months of the second intifada was $2.4 billion; raw physical damage, $300 million; and lost investment opportunities, $1.2 billion (World Bank, 2002; for different estimates of the costs and damages incurred by the Palestinian economy, see annex IV).

- Palestinians are restricted from conducting business in Area C, which represents at least 60 per cent of the West Bank; it is estimated that if Palestinian businesses and firms were permitted to operate in Area C, this would add 35 per cent to the Palestinian GDP (World Bank, 2013a).

- According to a survey by the Palestinian Central Bureau of Statistics (PCBS) on the impact of Israeli measures on the conditions of Palestinian households, about half of Palestinian households lost more than 50 per cent of their usual income and about 16 per cent experienced highly precarious living conditions; the median monthly income in the Occupied Palestinian Territory decreased from $750 before September 2000 to $450 at the end of 2004 (PCBS, 2005).

III. The economic costs of the Israeli occupation for the Palestinian people in the West Bank: Ramifications of Israeli measures in the aftermath of the second intifada, 2000–2019

A. The Palestinian regional economy in the West Bank: Performance and trends

Since the signing of the Oslo Accords, the Palestinian economy has gone through three distinct phases. In the first phase, between 1994 and 2000, optimism prevailed for a final status solution, the Palestinian National Authority was able to balance the budget, Israeli restrictions were less severe and donor aid was used mainly to finance development, not current expenditure or humanitarian outlays. In the period 1995–1999, the West Bank experienced, on average, a 10.7 per cent annual growth rate. Unemployment in the West Bank reached an all-time low of 9.5 per cent in 1999.

This was followed by the second intifada, which started in 2000 and subsided in 2006. During this phase, Israel imposed a rigid closure policy in the West Bank, which was under a curfew for several months in a row. In addition, Israel launched a military operation in the West Bank that led to the destruction of much of the Palestinian infrastructure, including public institutions. The movement of Palestinian labour and goods was also severely restricted. Consequently, GDP growth was negative for the first time since the establishment of the Palestinian National Authority in 1994, the economy of the West Bank shrank by 32.8 per cent and GDP per capita fell by 40 per cent in the three years between 2000 and 2002 (figures 1, 2 and 3). Meanwhile, unemployment increased from 9.5 per cent of the labour force in 1999 to 28.5 per cent in 2002 (figure 4). The poverty rate rose from 11.6 per cent in 1998 to over 40 per cent of the population of the West Bank in 2004. In the period 2000–2006, the economy in the West Bank only grew by 2.6 per cent, while GDP per capita registered zero growth in seven years; GDP per capita only returned to its 1999 level in 2007.

If these three years (2000–2002) are excluded, the average annual growth rate in the West Bank in the period 1995–2019 would have been as high as 8.4 per cent. Examining the second intifada period and its aftermath is crucial, to clarify not only the direct impact of the Israeli measures, restrictions and military operations on the economy of the West Bank but also their long-term impact.

Subsequently, by 2007, growth performance had improved. However, it is still pertinent to enquire about the distribution of its benefits, which are also important. This leads to the following questions: "Has growth been pro poor? Has it been generating decent jobs in large numbers? Is it sustainable?"

The third phase, from 2007 to date, is characterized by Israeli restrictions, aid dependency and the costly separation between the West Bank and Gaza, without major shocks such as those that occurred during the second intifada or the military operations in Gaza. Donor support reached 32 per cent of GDP in 2008 and has constantly declined since then. In the period 2007–

2019, the annual growth rates of GDP and GDP per capita in the West Bank were 6.2 and 4 per cent, respectively. Nevertheless, unemployment remained at around 18 per cent in this period.

In the period 2007–2019, the economy of the West Bank grew to 2.5 times its size in 1999, yet the average unemployment rate was almost twice as high as in 1999. This lacklustre employment performance means that the West Bank has had two decades of jobless growth. This fact corroborates the analysis in UNCTAD (2017), namely that, without employment in Israel and settlements, unemployment in the West Bank would have been much higher, as the domestic economy would not have been able to absorb the growing workforce.

In the full period 1995–2019, the economy of the West Bank grew on average by 6.1 per cent per year, which represents a cumulative total of 152 per cent. In the same period, GDP per capita grew on average by 3.1 per cent, for a total cumulative growth of 78 per cent over the entire period. Yet the economy continues to suffer from restrictions, political instability and uncertainty, which constrain its potential and severely distort its structure. The constrained economic performance deepens the dependence on imports and transfers, including aid, remittances and income from the employment of Palestinians in Israel and settlements. With regard to the dependency of the West Bank on employment in Israel, the share of Palestinian employment in the West Bank accounted for by Israel and settlements has never fallen below 10 per cent and even reached 25 per cent in 1999 (figure 4).

Figure 1
The West Bank: Real gross domestic product
(Millions of constant 2015 dollars)
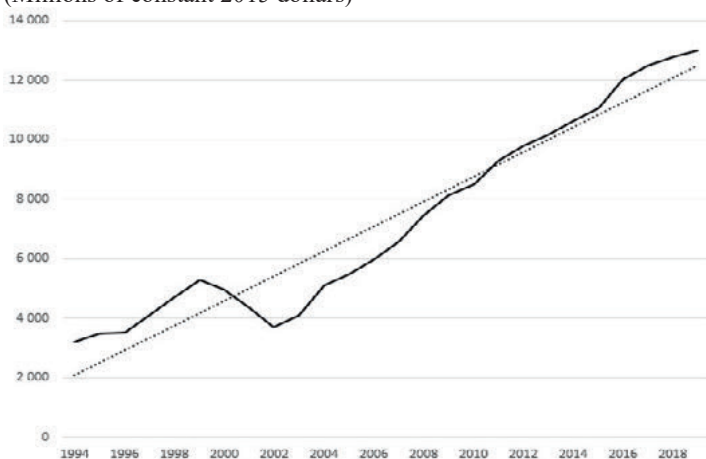
Source: PCBS, 2020a.

Figure 2
The West Bank: Real gross domestic product per capita
(Constant 2015 dollars)
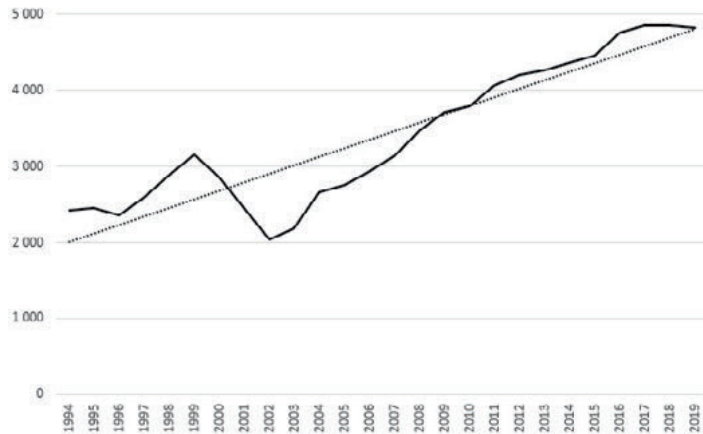
Source: PCBS, 2020a.

Figure 3
The West Bank: Real gross domestic product growth
(Percentage)
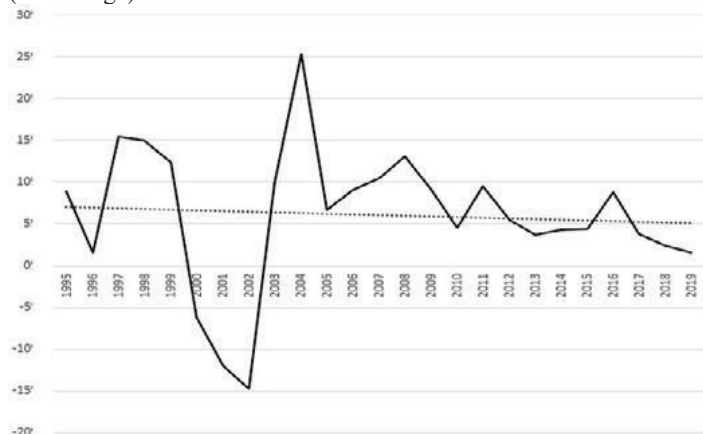
Source: PCBS, 2020a.

Figure 4
The West Bank: Unemployment rate and share of employment in Israel and settlements
(Percentage)

Source: PCBS, 2020b.

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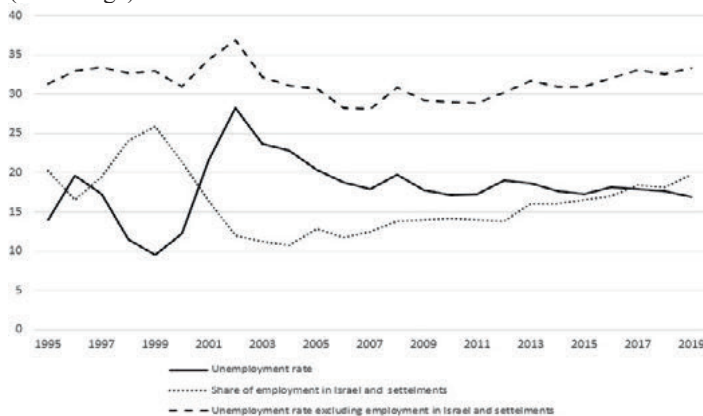
For more than two decades, the West Bank has experienced strict Israeli restrictions and their cost continues to accumulate. The World Bank estimates that easing road obstacles just enough to improve market access by 10 per cent would increase local output in the West Bank by 0.6 per cent and, therefore, in the absence of such obstacles, GDP per capita in the West Bank would be 4.1–6.1 per cent higher than its observed level (World Bank, 2018). Furthermore, some easing of other restrictions by Israel would, by 2025, enlarge the Palestinian economy by 33 per cent.

According to PCBS, as a result of mobility restrictions, Palestinians lose 60 million work hours per year, equivalent to $274 million (Applied Research Institute–Jerusalem, 2019). The World Bank, in a study in 2013, found that closures substantially reduced the probability of being employed, hourly wages and the number of days worked, while they increased the number of working hours per day; much of this impact was driven by reduced firm profitability and labour demand (World Bank, 2013b). The study concluded that checkpoints alone cost the West Bank economy a minimum of 6 per cent of GDP and that placing one checkpoint one minute away from a locality reduced the probability of being employed by 0.41 per cent, the hourly wage by 6.3 per cent and working days by 2.6 per cent.

The inability of the constrained economy of the West Bank, under occupation, to generate jobs, in the face of a growing population, forces a high number of Palestinians to seek employment in Israel and settlements. There is a strong negative correlation between the share of Palestinian workers in Israel and settlements and the unemployment rate in the West Bank, demonstrating the dependence of the West Bank economy on Israel for employment (figure 3).

Without employment in Israel and settlements, unemployment in the West Bank would have been much higher, at levels not far from the extremely high rates in Gaza, besieged since 2007. On average, unemployment in the West Bank would have been 16 per cent higher in the period 1995–2019 (figure 4). In 2019, without employment in Israel and settlements, unemployment could have been at the 37 per cent level instead of the recorded 17 per cent. However, even with employment in Israel, the regional economy of the West Bank has not been able to make a dent in the stubbornly high unemployment rates.

In 2019, 133,000 Palestinians (10 per cent of the West Bank workforce) were employed in Israel and settlements, mostly in the construction sector, followed by agriculture and low-technology industries and services (UNCTAD, 2020a). An overwhelming 99 per cent of them were men and classified as low-skilled in terms of educational attainment, with less than 13 years of schooling (Economic Policy Research Institute, PCBS and Palestinian Monetary Authority, 2018). The growing dependence of the Palestinian labour market on Israel is also made possible by a shortage of low-skilled labour in Israel, in particular in agriculture and construction. Attempts to fill the gap with workers from Asia have not been successful. Employers in Israel and settlements seem to have a preference for Palestinian workers, due to their skills and to familiarity. A crucial difference is that Palestinian workers return to the West

Bank at the end of the workday, or period, and thus do not have an impact on the demographic structure of Israel (UNCTAD, 2019b).

While employment in Israel and settlements may provide short-term benefits, it remains precarious, volatile, vulnerable to the vagaries of politics and antithetical to long-term sustainable growth. It undermines the Palestinian economy by eroding its competitiveness through its effects on domestic wages and the real exchange rate. In addition, exporting labour to Israel in the long term undermines the capacity of the Palestinian economy to export goods and services. Empirical evidence suggests that employment in Israel and settlements is associated in the long term with a reduction in exports of 5 per cent, an increase in imports of 6 per cent and a lower GDP, with the manufacturing sector, followed by the mining sector, experiencing the worst decline in absolute and relative terms (Agbahey, 2018). Moreover, while it increases factor income received from Israel, it also decreases labour supply to the domestic market, dampens incentives to invest in human capital and negatively affects GDP growth (Agbahey, Siddig and Grethe, 2016).

B. The economic costs of the Israeli occupation for the Palestinian people: After the second intifada, 2000–2019

This section provides estimates of the economic costs incurred by the Palestinian people as a result of the significant tightening of Israeli closures and restrictions and of military operations in the West Bank in the aftermath of the second intifada. As explained above, the immediate cost of these restrictions was the shrinking of the West Bank regional economy by one third in the period 2000–2002. It should be noted, however, that the restrictions triggered long-lasting damage, the cost of which continues to accumulate, as the occupying Power maintains the constraints that prevent the necessary rebuilding.

The mobility and other restrictions imposed on the West Bank started immediately after the outbreak of the second intifada on 28 September 2000. However, it is difficult to determine the date on which these restrictions were eased to pre-intifada levels. In observing the fluctuations of economic growth, it is reasonable to assume that the restrictions were to some extent relaxed, but not lifted, in 2006 (figure 2).[2] Therefore, the estimation of the direct, long-lasting cost of the Israeli restrictions post-second intifada is based on a counterfactual growth path, or scenario, for the West Bank regional economy that assumes that the stricter Israeli restrictions and closure policy did not occur in the period 2000–2006.

It should be stressed that this exercise is not aimed at answering the question, "What if there were no occupation?" It is not intended to assess the total cost of occupation. Rather, it is designed to explore the economic cost of the Israeli closures, restrictions and military operations in the aftermath of the second intifada.

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[2] This assumption is based on the number of closure days, which declined from 244 days in 2001 and 2002 to 122 in 2006, before dropping to 34 days in 2007.

Based on the growth rate in the West Bank in the period prior to the second intifada (1995–1999) and the period that followed (2007–2019), a counterfactual growth scenario is constructed for the period 2000–2006. This alternative scenario assumes that in 2000–2002, the 32.8 per cent contraction of the West Bank regional economy, as well as the rebound in the following three years, did not occur. Instead, it assumes that the economy grew in the period 2000–2006 at the compounded annual rate of 7.1 per cent, which was the average annual growth rate in the periods 1995–1999 and 2007–2019.

The results, shown in table 1 and figure 5, suggest that the loss of potential GDP captured under the alternative scenario is significant, in the sense that per capita output would have been much higher than its actual level. Under this alternative scenario, in the period 2000–2019, the West Bank annual GDP would have been, on average, 35 per cent higher than its actual level, leading to a cumulative loss in potential real GDP of $57.7 billion (constant 2015 dollars), equivalent to 4.5 times the GDP of the West Bank in 2019 or 3.5 times the GDP of the Occupied Palestinian Territory in 2019. Without the stricter Israeli restrictions and closure policy, GDP per capita in the West Bank would have been $2,142, or 44 per cent higher than its actual level in 2019 (table 2 and figure 6). It is important to stress that these are only estimates of lost potential GDP and do not include the cost of damage and destruction of Palestinian assets under Israeli military operations and other measures.

Table 1
The West Bank: Real gross domestic product, actual and alternative scenario
(Millions of constant 2015 dollars)

Year	Actual real GDP	Alternative scenario		
		Real GDP	Difference	Percentage difference
2000	4 958.3	5 660.9	702.6	14.2
2001	4 365.9	6 064.0	1 698.1	38.9
2002	3 724.9	6 495.8	2 770.9	74.4
2003	4 090.7	6 958.4	2 867.7	70.1
2004	5 128.9	7 453.9	2 325.0	45.3
2005	5 468.5	7 984.7	2 516.2	46.0
2006	5 962.1	8 553.3	2 591.2	43.5
2007	6 587.6	9 086.4	2 498.8	37.9
2008	7 451.3	9 652.8	2 201.5	29.5
2009	8 126.3	10 254.5	2 128.2	26.2
2010	8 496.1	10 893.6	2 397.5	28.2
2011	9 305.9	11 572.6	2 266.7	24.4
2012	9 810.2	12 294.0	2 483.8	25.3
2013	10 171.9	13 060.2	2 888.3	28.4
2014	10 610.4	13 874.3	3 263.9	30.8
2015	11 072.3	14 739.1	3 666.8	33.1
2016	12 046.1	15 657.8	3 611.7	30.0
2017	12 505.5	16 633.8	4 128.3	33.0
2018	12 797.3	17 670.6	4 873.3	38.1
2019	12 998.8	18 772.0	5 773.2	44.4
Cumulative	165 679.1	223 332.6	57 653.6	34.8

Source: UNCTAD calculations.

Figure 5
The West Bank: Real gross domestic product, actual and alternative scenario
(Millions of constant 2015 dollars)
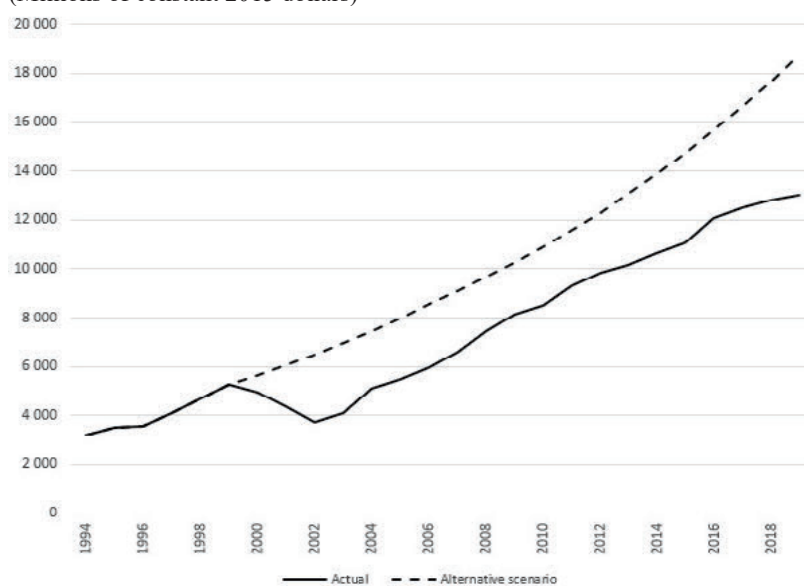
Source: UNCTAD calculations.

Table 2
The West Bank: Real gross domestic product per capita, actual and alternative scenario
(Constant 2015 dollars)

Year	Actual real GDP per capita	Alternative scenario		
		Real GDP per capita	**Difference**	**Percentage difference**
2000	2 865.5	3 271.6	406.0	14.2
2001	2 456.0	3 411.2	955.2	38.9
2002	2 040.0	3 557.6	1 517.6	74.4
2003	2 181.1	3 710.2	1 529.0	70.1
2004	2 661.8	3 868.4	1 206.6	45.3
2005	2 758.6	4 027.9	1 269.3	46.0
2006	2 923.0	4 193.4	1 270.4	43.5
2007	3 138.7	4 329.3	1 190.6	37.9
2008	3 470.9	4 496.4	1 025.5	29.5
2009	3 702.7	4 672.4	969.7	26.2
2010	3 788.4	4 857.5	1 069.1	28.2
2011	4 062.7	5 052.3	989.6	24.4
2012	4 195.0	5 257.1	1 062.1	25.3
2013	4 262.3	5 472.6	1 210.3	28.4
2014	4 358.7	5 699.5	1 340.8	30.8
2015	4 460.8	5 938.1	1 477.3	33.1
2016	4 761.1	6 188.6	1 427.5	30.0
2017	4 851.0	6 452.4	1 601.4	33.0
2018	4 854.4	6 703.0	1 848.6	38.1
2019	4 822.5	6 964.3	2 141.8	44.4

Source: UNCTAD calculations.

Figure 6
The West Bank: Real gross domestic product per capita, actual and alternative scenario
(Constant 2015 dollars)
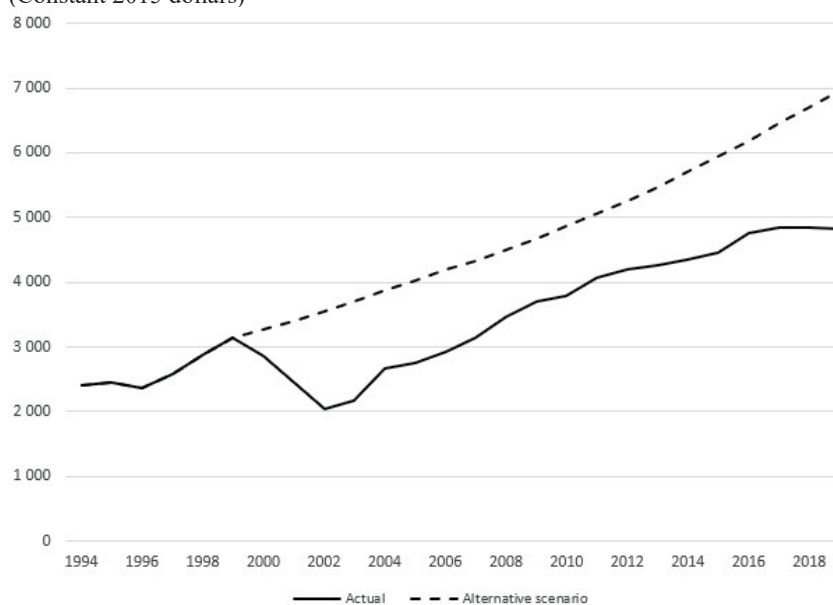
Source: UNCTAD calculations.

IV. Estimated poverty cost of occupation in the wake of the second intifada, 1998–2017

An assessment of the deterioration in the welfare and living conditions of Palestinians in the West Bank as a result of the stricter restrictions imposed by Israel after the second intifada is provided in this chapter. The poverty headcount, poverty gap and minimal cost of eliminating poverty are estimated for the period 1998–2017 using data from the censuses and Palestinian expenditure and consumption surveys conducted by PCBS. In addition, the patterns of inequality and allocation of assistance in the West Bank in the period 2004–2017 are analysed. Finally, the impact of the Israeli restrictions on poverty indicators are also estimated with, under the alternative scenario described in chapter III, the assumption that they were not imposed. The analysis in this chapter follows a similar methodology to that in UNCTAD (2020b; chapter IV).

A. Measuring poverty in the West Bank, selected years, 1998–2017

The evolution of the level and depth of poverty in the West Bank in the period 1998–2017 is analysed in this section. The poverty headcount is defined as the proportion of households living below the poverty line, with and without assistance.[3] However, headcounts do not take into account the severity or depth of poverty, which is reflected by how far a given household falls below the poverty line. Use of the poverty gap addresses this issue. For example, whether 50 per cent of households are $0.01 below the poverty line or $100 below, the headcount in both cases is 50 per cent. The poverty gap corrects for this by adding the distance, in monetary terms, that separates each household from the poverty line; a weight of 1 is assigned to households below the poverty line and 0, to those above. The poverty gap therefore represents the average percentage shortfall of households relative to the poverty line.

The two poverty indicators (poverty headcount and poverty gap) are measured for selected key years in order to assess the impact of the Israeli restrictions and measures, namely, 1998 (before the second intifada), 2004 (during the second intifada) and 2007 and 2017 (after the second intifada). The poverty indicators are estimated using two methods: survey-based and EBP. The latter improves the accuracy of poverty measures by combining information from expenditure and consumption surveys with the large sample available from census data.

1. Survey-based method

The survey-based method uses the definition of the poverty line as 60 per cent of the national median total household expenditures per adult equivalent and directly applies it to the relatively

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[3] Assistance includes all cash and in-kind assistance to households provided by the government and non-governmental agencies.

sparse survey data (table 3).[4] The poverty headcount and poverty gap in the West Bank are calculated based on the Palestinian expenditure and consumption surveys in 1998, 2004, 2007 and 2017. The survey samples indicate that the share of households in the West Bank living below the poverty line was 11.6, 15.2, 13.5 and 13.7 per cent in 1998, 2004, 2007 and 2017, respectively. Similarly, the poverty gap remained stable over time, oscillating between 2.8 and 4 per cent in the selected years (see table 6). In addition, as expected, poverty rates and poverty gaps were higher without assistance than otherwise.

A concern with the use of a relative measure in assessing the evolution of poverty in the West Bank over time is that the median level of income (at 60 per cent of the median) fell systematically in the wake of the second intifada (table 3). Consequently, this approach can be misleading because it uses the level of poverty relative to each year's income and its distribution and does not take into account the precipitous fall in living standards triggered by the Israeli restrictions after the second intifada. This is why, in relative terms, it is not surprising that the poverty rate and the poverty gap remained roughly constant. The empirical cumulative density functions (ECDFs) for the four years, provide a clear illustration of this phenomenon (figure 7).

On the contrary, with the poverty line maintained at the 1998 level, the poverty rate increased from 11 per cent in 1998 to 35 per cent in 2004, following the introduction of the post-second intifada restrictions. The rate declined slightly to 30 per cent in 2007, and only returned to its pre-second intifada level 20 years later, in 2017. The poverty gap quadrupled, from 3 per cent in 1998 to 11 per cent in 2004, and only returned to its 1998 level in 2017.

Table 3
The West Bank: Mean and 60 per cent of median expenditures per adult equivalent, 1998–2017
(Constant 2015 dollars)

Year	Mean expenditures per adult equivalent	60 per cent of median expenditures per adult equivalent
1998	410	176
2004	284	118
2007	335	122
2017	453	195

Source: UNCTAD calculations.

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[4] This measure of the relative poverty line is used by, among others, the European Union, the Organisation for Economic Co-operation and Development, the United Nations Children's Fund and the United Nations Development Programme (see https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:At-risk-of-poverty_rate (accessed 13 October 2021)). Adult equivalent is defined as (1 + (number of adults - 1) × 0.8 + (number of children × 0.5)), which is the definition used by the Organisation for Economic Co-operation and Development and the World Bank (see annex I). PCBS uses a slightly different definition, namely ((number of adults + 0.46 × number of children) ^ 0.89). Expressing matters in terms of adult equivalent rather than in per capita terms, among others, depicts a more accurate picture of poverty. This is because household structures in the Occupied Palestinian Territory, as in most developing countries, are highly heterogeneous, many of them including a large number of children. Consumption requirements in a household comprised of six adults are completely different from those in a household comprised of two adults and four children. Expressing matters in terms of adult equivalent permits such important sources of interhousehold heterogeneity to be taken into account.

2. Inequality and assistance in the West Bank, 1998–2017

As elaborated above, the impacts of the Israeli measures imposed on the West Bank after the second intifada were severe on the poorer segment of the population. This led to a significant increase in the rate and depth of poverty and, consequently, to a deterioration in income distribution and an increase in inequality. The Lorenz curve shifted out in 1998–2004, shifted out even further in 2007 and only returned (roughly) to its original shape in 2017 (figure 7). It has taken 20 years for inequality to return to its 1998 level, which is reflected by the evolution of the Gini coefficient, which increased from 0.325 in 1998 to 0.362 in 2004 and again to 0.393 in 2007 before declining to 0.336 in 2017 (figures 8 and 9).[5]

Figure 7
The West Bank: Empirical cumulative density functions for total monthly household expenditures per adult equivalent, including assistance
(Constant 2015 dollars)
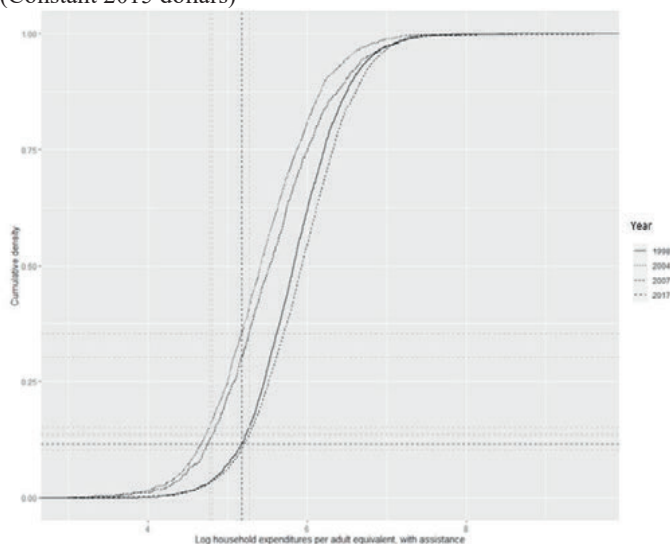
Notes: The horizontal axis shows the value of expenditures, and the vertical axis shows the proportion of households with expenditures below that level. The vertical dashed line represents the poverty line of 1998. Following the second intifada, ECDF shifted significantly to the left; it only returned to its 1998 level 20 years later, in 2017. The second intifada thus cost the West Bank two decades of development.
Source: UNCTAD calculations.

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[5] A Lorenz curve can help to summarize distribution and study its properties in terms of inequality. In this case, it plots the share of total expenditures accounted for by the poorest 20 per cent of all households in the West Bank when they are depicted in increasing order in terms of household expenditures. A Lorenz curve goes from the origin at 0.0 to 1.1, whereby the 100 per cent richest households necessarily account for 100 per cent of the total income. Moreover, a Lorenz curve is convex, that is, it slopes upward at an increasing rate, because the share of total expenditures accounted for by the Nth poorest households is always less than N per cent of total income. A Lorenz curve that lies on the 45-degree line corresponds to a perfectly egalitarian distribution of income, with all households having the same level of expenditures per adult equivalent. Therefore, the closer the curve to the 45-degree line, the more the distribution is equal, whereas the further it shifts towards the southeast corner, the more the distribution is unequal. As such, a Lorenz curve entirely below another indicates an increase in inequality. The shape of a Lorenz curve is often summarized using measures of scale; the most common is the Gini coefficient.
The Gini coefficient corresponds to the surface area between the Lorenz curve and the 45-degree line, expressed as a share of half of the square, that is, the triangle, below the 45-degree line. As such, the Gini coefficient is equal to 0 when the distribution of expenditures in the population is perfectly egalitarian (without a space between the Lorenz curve and the 45-degree line) and is equal to 1 when inequality reaches its maximum level (the Lorenz curve lies against the southern and eastern sides).

Figure 8
The West Bank: Standard Lorenz curves, 1998, 2004, 2007 and 2017
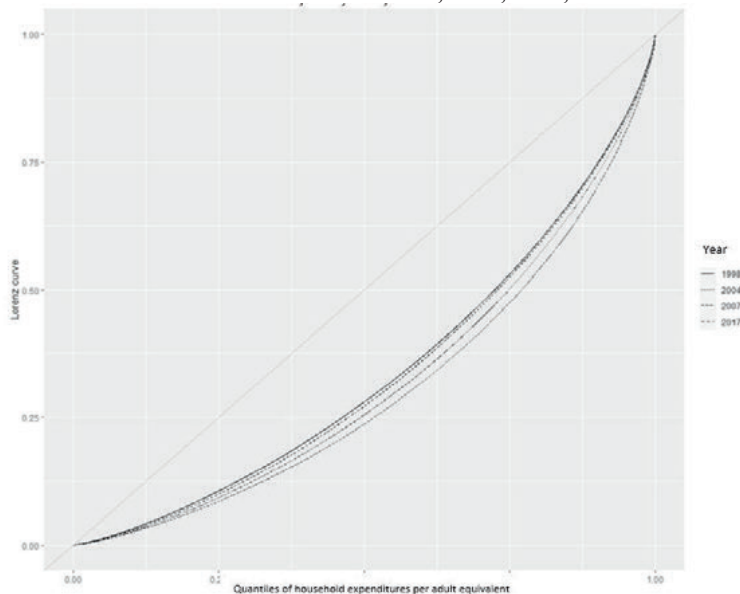
Source: UNCTAD calculations.

Figure 9
The West Bank: Generalized Lorenz curves (scaled by the mean), 1998, 2004, 2007 and 2017
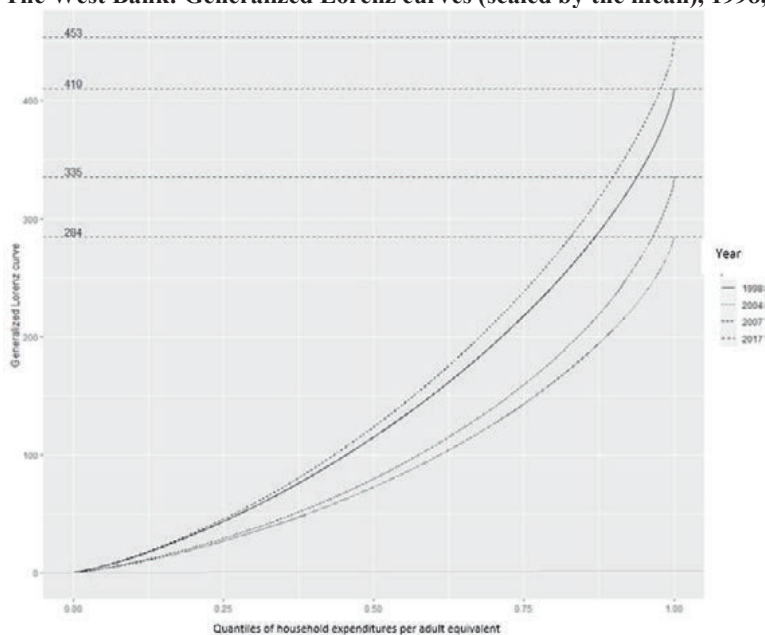
Note: The change in average expenditures and inequality can be combined by using generalized Lorenz curves, which scale the standard Lorenz curve by mean expenditures per adult equivalent.
Source: UNCTAD calculations.

In contrast with UNCTAD (2020b) findings with regard to Gaza, assistance contributes little to the welfare of the population in the West Bank; the Lorenz curves are virtually identical with and without assistance (figure 10).

Figure 10
The West Bank: Lorenz curves with and without assistance, 2004, 2007 and 2017
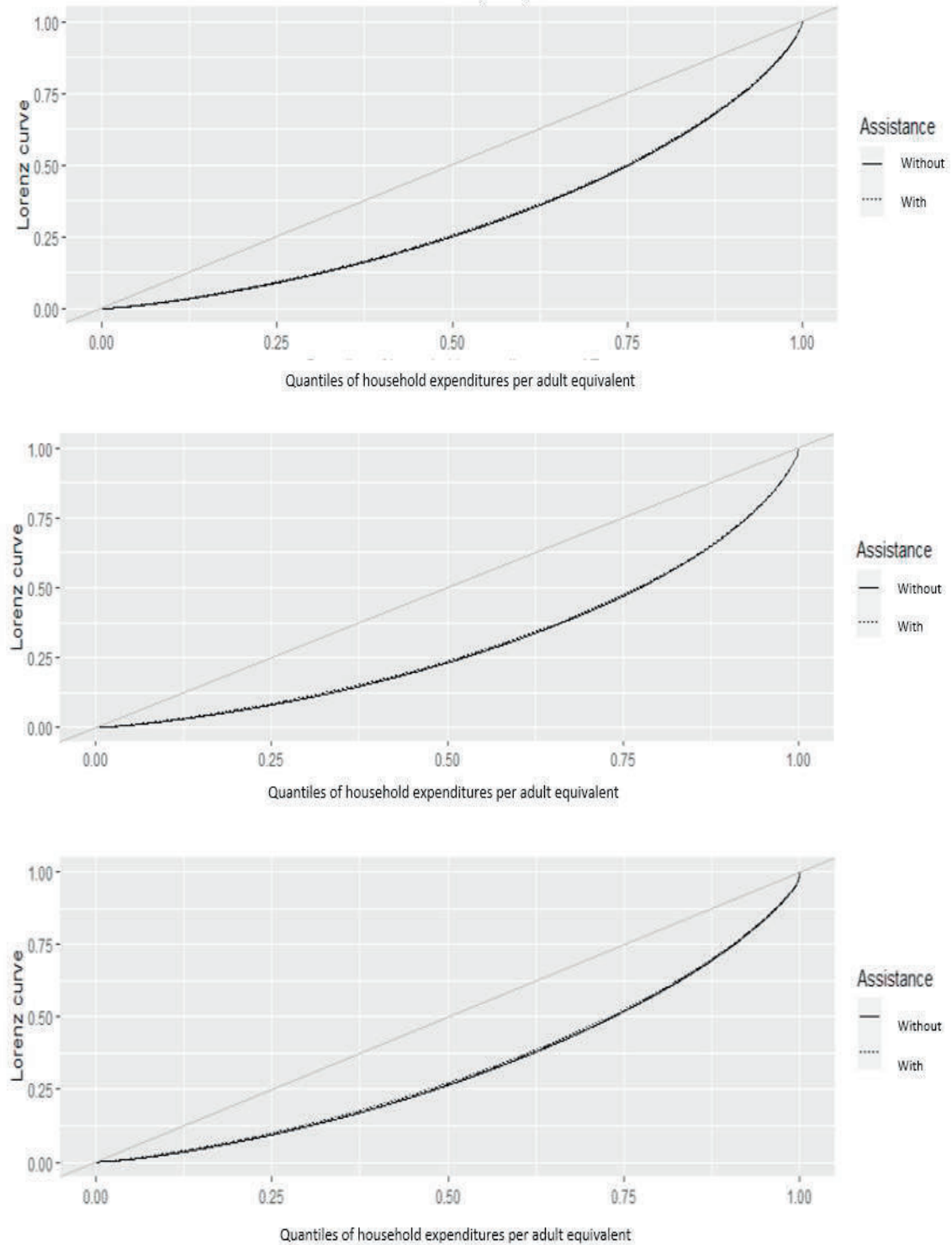
3. Empirical best prediction method

One limitation of the survey-based method is that it relies on relatively small samples. Recent developments in poverty mapping and small area estimation make it possible to improve this method by combining survey data with census data (Elbers, Lanjouw and Lanjouw, 2003; Molina, Rao and Datta, 2015). As is typical in almost all States, Palestinian census data do not include information on household or individual consumption, expenditures or income. However, the Palestinian expenditure and consumption surveys in 2004, 2007 and 2017 and the censuses in 2007 and 2017 compile data on a relatively broad set of common variables, including location, whether urban, rural or a refugee camp; characteristics of the household head, such as education level and employment status; sector of employment; demographic characteristics of the household; access to basic services, such as water; characteristics of the household dwelling; and household assets.

To determine the headcount and depth of poverty, the EBP method follows three steps. First, data from the Palestinian expenditure and consumption surveys are used to estimate statistical regression equations of household expenditures per adult equivalent and the observable characteristics of the households. Second, the estimated coefficients obtained from the regressions are combined with census data (covering a greater number of households) to impute the household level of expenditures per adult equivalent.[6] Third, the imputed measures of household expenditures are used to recalculate the poverty headcount and poverty gap measures for each year. For the statistical relationship linking household expenditures per adult equivalent to the household characteristics to be estimated, this information must be available in both the survey and census data that constitute the basis for the estimation.

The regression results of log real total monthly expenditures per adult equivalent with and without assistance, respectively, on the set of standard covariates at the national level. are shown in tables 4 and 5. A common set of covariates is maintained from the surveys in 2004, 2007 and 2017 in order to maximize comparability between the synthetic income measures constructed using census data and the parameter estimates. There are three exceptions, namely, employment in Israel and settlements in 2004; employment abroad in 2004; and access to electricity in 2017. The relatively small sample sizes are noted, and the regressions should not be interpreted in terms of causality.

Some interesting patterns emerge. Firstly, whether in 2007 or 2017, the divergence between households in Gaza and the West Bank is substantial yet was much lower in 2004. Expenditures per adult equivalent of a household in Gaza were lower than those of a household in the West Bank by 41 per cent in 2007 and 2017 and by only 12 per cent in 2004. Secondly, the level of education of the household head remains an important determinant of expenditures. Thirdly, the employment status of the household is paramount in terms of expenditures.

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[6] The estimated coefficients obtained from the regression using the Palestinian expenditure and consumption survey in 2004 are combined with the census data from 2007 (covering a greater number of households), to impute the household level of expenditures per adult equivalent in 2004.

The goodness-of-fit measure is appropriate for cross-sectional data of this type, with an R-squared of 0.5, 0.52 and 0.54 for 2004, 2007 and 2017, respectively. Nevertheless, it could be improved with more fine-grained geographical information on the location of the sample households. Such data would improve the goodness-of-fit measure by including average values of certain covariates at the level of locality. Since the goal in this exercise is not to estimate poverty or inequality measures at disaggregated local levels for areas covered by the census but not by the Palestinian expenditure and consumption surveys, it is possible to eschew complicated covariance structures (that is, household-specific and region-specific disturbances, essentially corresponding to a random-effects model) and to concentrate instead on generating bootstrapped synthetic measures of monthly household expenditures per adult equivalent for households in the census. These are generated by applying the coefficients estimated in the econometric model of expenditures in tables 4 and 5 to the values of the corresponding covariates available in the census sample, thereby combining survey and census data, in the EBP method. The final poverty measures are obtained by taking the average of the results from multiple replications. This procedure is followed separately for 2004, 2007 and 2017.

In interpreting the results based on the EBP method, the underlying statistical trade-offs should be kept in mind. On the one hand, poverty measures are estimated for all households included in the census sample, thereby boosting the sample size by more than one order of magnitude. On the other hand, this increase in sample size comes at the expense of using imputed measures of household expenditures rather than the actual measures available from the Palestinian expenditure and consumption surveys. The bootstrapping procedure is designed to mitigate any bias stemming from this imputation.

Table 4

Regression results: Log real monthly expenditures per adult equivalent, with assistance

Independent variables from the Palestinian expenditure and consumption survey	2017	2007	2004
Intercept	5.641 (0.148)***	5.442 (0.462)***	4.991 (0.157)***
Location (West Bank and urban are base categories)			
Gaza	-0.408 (0.027)***	-0.414 (0.045)***	-0.120 (0.024)***
Rural	-0.053 (0.020)**	-0.045 (0.044)	0.070 (0.025)**
Camp	-0.016 (0.029)	-0.038 (0.052)	-0.012 (0.026)
Characteristics of household head			
Gender	0.036 (0.031)	0.078 (0.061)	0.102 (0.035)**
Marital status	-0.019 (0.058)	-0.008 (0.130)	0.072 (0.064)
Refugee status	-0.032 (0.019)	-0.064 (0.038)	-0.066 (0.021)**
Education level	0.064 (0.019)***	0.093 (0.039)*	0.066 (0.022)**
Employment status			
Sector of employment (services is base category)			
Agriculture	-0.067 (0.036)	-0.110 (0.058)	-0.142 (0.031)***
Construction	-0.030 (0.027)	-0.019 (0.052)	-0.079 (0.027)**
Industry	-0.032 (0.030)	0.012 (0.169)	-0.039 (0.031)
Number of employed household members	0.048 (0.011)***	0.066 (0.019)***	0.044 (0.011)***
Employment in Israel	0.166 (0.027)***	0.209 (0.058)***	-
Employment abroad	0.021 (0.127)	-0.198 (0.199)	-
Employment in national government	0.107 (0.025)***	-0.001 (0.048)	0.074 (0.027)**
Demographic characteristics of household			
Number of females	-0.118 (0.007)***	-0.105 (0.011)***	-0.098 (0.006)***
Number of males	-0.089 (0.007)***	-0.077 (0.013)***	-0.087 (0.007)***
Number of adult females	-0.008 (0.012)	0.018 (0.021)	0.003 (0.011)
Number of adult males	0.003 (0.009)	-0.002 (0.016)	-0.001 (0.009)
Access to basic services			
Access to public water	-0.158 (0.027)***	-0.134 (0.059)*	0.013 (0.031)
Access to electricity	-	0.027 (0.167)	-0.085 (0.078)
Connection to sewage network	-0.023 (0.021)	0.146 (0.041)***	0.122 (0.021)***
Characteristics of household dwelling			
House ownership	-0.053 (0.023)*	-0.237 (0.050)***	-0.201 (0.034)***
Number of rooms	0.039 (0.012)***	0.049 (0.016)**	0.014 (0.006)*
Number of bedrooms	-0.007 (0.017)	-0.049 (0.029)	0.047 (0.014)***
Kitchen	0.053 (0.115)	0.371 (0.344)	0.030 (0.103)
Bathroom	-0.067 (0.028)*	0.076 (0.325)	0.077 (0.085)
Toilet	0.034 (0.020)	-0.391 (0.328)	-0.219 (0.107)*
Main source of cooking energy is gas	0.026 (0.070)	-0.148 (0.112)	0.136 (0.058)*
Main source of heating is gas	-0.015 (0.021)	0.031 (0.040)	0.073 (0.023)**
Household assets			
Car	0.379 (0.020)***	0.236 (0.040)***	0.199 (0.023)***
Refrigerator	0.098 (0.052)	0.083 (0.085)	0.119 (0.040)**
Boiler	0.096 (0.018)***	0.109 (0.039)**	0.014 (0.021)
Central heating	0.072 (0.078)	0.323 (0.128)*	0.283 (0.068)***
Vacuum	0.075 (0.020)***	0.097 (0.043)*	0.146 (0.027)***
Cooking stove	0.025 (0.030)	-0.030 (0.193)	0.139 (0.086)
Washing machine	-0.057 (0.017)**	0.062 (0.068)	0.079 (0.034)*
Home library	0.090 (0.026)***	0.151 (0.041)***	0.129 (0.024)***
Television	0.170 (0.019)***	0.082 (0.082)	0.072 (0.042)
Telephone line	0.072 (0.019)***	0.197 (0.038)***	0.204 (0.021)***
Computer	0.060 (0.019)**	0.155 (0.038)***	0.133 (0.022)***
Mobile telephone	0.191 (0.025)***	0.267 (0.051)***	0.214 (0.023)***
R-squared	*0.535*	*0.515*	*0.495*
Adjusted R-squared	*0.530*	*0.498*	*0.489*
Number of observations	*3 708*	*1 223*	*3 089*

Notes: For variables and units of measurement and summary statistics from the surveys and censuses, see annexes I and II. Expenditures are in constant 2015 dollars. Standard errors are shown in parentheses.
Source: UNCTAD calculations.
* p < 0.05
** p < 0.01
*** p < 0.001

Table 5

Regression results: Log real monthly expenditures per adult equivalent, without assistance

Independent variables from the Palestinian expenditure and consumption survey	2017	2007	2004
Intercept	5.355 (0.176)***	5.297 (0.531)***	4.933 (0.173)***
Location (West Bank and urban are base categories)			
Gaza	-0.516 (0.032)***	-0.409 (0.052)***	-0.150 (0.026)***
Rural	-0.072 (0.023)**	-0.033 (0.050)	0.071 (0.027)**
Camp	-0.065 (0.034)	-0.049 (0.060)	-0.004 (0.028)
Characteristics of household head			
Gender	-0.028 (0.036)	0.079 (0.070)	0.083 (0.038)*
Marital status	-0.006 (0.069)	0.097 (0.150)	0.070 (0.070)
Refugee status	-0.032 (0.022)	-0.066 (0.044)	-0.088 (0.023)***
Education level	0.077 (0.022)***	0.112 (0.044)*	0.071 (0.024)**
Employment status			
Sector of employment (services is base category)			
Agriculture	-0.051 (0.043)	-0.089 (0.066)	-0.146 (0.035)***
Construction	0.002 (0.032)	0.011 (0.060)	-0.091 (0.030)**
Industry	-0.015 (0.036)	0.023 (0.194)	-0.041 (0.034)
Number of employed household members	0.086 (0.013)***	0.082 (0.022)***	0.049 (0.012)***
Employment in Israel	0.177 (0.033)***	0.212 (0.067)**	-
Employment abroad	0.056 (0.152)	-0.169 (0.228)	-
Employment in national government	0.175 (0.030)***	0.033 (0.055)	0.081 (0.030)**
Demographic characteristics of household			
Number of females	-0.125 (0.008)***	-0.095 (0.013)***	-0.101 (0.007)***
Number of males	-0.098 (0.008)***	-0.069 (0.014)***	-0.086 (0.007)***
Number of adult females	-0.021 (0.014)	0.022 (0.024)	0.008 (0.013)
Number of adult males	-0.009 (0.010)	-0.003 (0.018)	-0.002 (0.010)
Access to basic services			
Access to public water	-0.181 (0.032)***	-0.124 (0.068)	0.010 (0.034)
Access to electricity	-	0.020 (0.192)	-0.100 (0.086)
Connection to sewage network	-0.021 (0.025)	0.157 (0.048)**	0.127 (0.024)***
Characteristics of household dwelling			
House ownership	-0.050 (0.027)	-0.272 (0.057)***	-0.192 (0.038)***
Number of rooms	0.045 (0.014)**	0.060 (0.018)***	0.015 (0.007)*
Number of bedrooms	-0.007 (0.020)	-0.087 (0.033)**	0.044 (0.015)**
Kitchen	0.079 (0.137)	0.336 (0.395)	0.031 (0.114)
Bathroom	-0.075 (0.034)*	-0.020 (0.373)	0.077 (0.094)
Toilet	0.058 (0.023)*	-0.369 (0.377)	-0.228 (0.118)
Main source of cooking energy is gas	0.067 (0.083)	-0.164 (0.128)	0.140 (0.063)*
Main source of heating is gas	-0.012 (0.025)	0.046 (0.046)	0.073 (0.026)**
Household assets			
Car	0.384 (0.024)***	0.253 (0.046)***	0.217 (0.026)***
Refrigerator	0.204 (0.061)***	0.062 (0.097)	0.136 (0.044)**
Boiler	0.103 (0.021)***	0.107 (0.044)*	0.022 (0.023)
Central heating	0.070 (0.093)	0.345 (0.147)*	0.292 (0.075)***
Vacuum	0.084 (0.024)***	0.134 (0.050)**	0.135 (0.030)***
Cooking stove	0.012 (0.036)	0.068 (0.222)	0.151 (0.095)
Washing machine	-0.063 (0.021)**	0.021 (0.078)	0.104 (0.038)**
Home library	0.078 (0.031)*	0.151 (0.047)**	0.136 (0.026)***
Television	0.201 (0.023)***	0.060 (0.094)	0.050 (0.046)
Telephone line	0.081 (0.023)***	0.236 (0.044)***	0.221 (0.023)***
Computer	0.063 (0.023)**	0.134 (0.044)**	0.135 (0.024)***
Mobile telephone	0.242 (0.030)***	0.301 (0.058)***	0.221 (0.025)***
R-squared	*0.522*	*0.466*	*0.467*
Adjusted R-squared	*0.517*	*0.448*	*0.461*
Number of observations	*3 708*	*1 223*	*3 089*

Notes: For the variables and units of measurement and summary statistics from the surveys and censuses, see annexes I and II. Expenditures are in constant 2015 dollars. Standard errors are shown in parentheses.
Source: UNCTAD calculations.
* p < 0.05
** p < 0.01
*** p < 0.001

The EBP measure of the poverty headcount is approximately 6 per cent higher than the survey-based counterpart. Using the EBP method, the poverty headcounts in 2004, 2007 and 2017 are estimated at 21, 19 and 20 per cent, respectively. This measure rises to 24, 22 and 26 per cent without assistance, which is still 6 per cent higher than when using the survey-based method. Concomitantly, the EBP method measure of the poverty gap in the West Bank is higher than the survey-based method measure by about 2 per cent in each of these years (table 6).

Table 6
The West Bank: Poverty headcount and poverty gap, with and without assistance
(Poverty line = 60 per cent of each year's median level of expenditures per adult equivalent)

Year	Poverty headcount		Poverty gap	
	Survey-based method	EBP method	Survey-based method	EBP method
With assistance				
1998	0.1155	-	0.0282	-
2004	0.1515	0.2117	0.0395	0.0609
2007	0.1348	0.1877	0.0341	0.0542
2017	0.1369	0.1948	0.0342	0.0502
Without assistance				
2004	0.1671	0.2422	0.0477	0.076
2007	0.1552	0.2234	0.047	0.0717
2017	0.1563	0.2638	0.0457	0.0819

Source: UNCTAD calculations.

However, when the poverty line of 1998 ($176) is used, the evolutions of the poverty headcount and the poverty gap are completely different, and it becomes clear that the stricter restrictions imposed after the second intifada by the occupying Power led to a substantial increase in poverty. With the poverty line maintained at the 1998 level, the poverty rate increased from 20 per cent in 1998 to 40 and 35 per cent in 2004 and 2007, respectively, and only returned to its pre-second intifada level nearly two decades later, in 2017. The poverty gap increased by nearly 2.5 times in 2004, reaching 14 per cent, returning to its 1998 level only in 2017 (table 7).

Table 7
The West Bank: Poverty headcount and poverty gap, with and without assistance
(Poverty line = 1998 poverty line)

Year	Poverty headcount		Poverty gap	
	Survey-based method	EBP method	Survey-based method	EBP method
With assistance				
1998	0.1155	-	0.0282	-
2004	0.3539	0.4074	0.1096	0.1433
2007	0.3020	0.3516	0.0902	0.1203
2017	0.1025	0.1528	0.0254	0.0374
Without assistance				
2004	0.3669	0.4313	0.1197	0.1626
2007	0.3249	0.3814	0.1072	0.1427
2017	0.123	0.2199	0.0362	0.0653

Source: UNCTAD calculations.

4. Increase in minimum cost of eliminating poverty

Based on the estimations above, a lower bound on the cost of raising all households to the poverty line can be estimated as follows:

Minimum cost of eliminating poverty = poverty gap × poverty line × 12
months × number of adult equivalents per household × number of households

The fourth element on the right-hand side of this relationship stems from the fact that the poverty gap measure is expressed per adult equivalent and must therefore be scaled up by the number of adult equivalents in a household. Using the poverty gap as estimated through the EBP method, the minimum real costs of eliminating poverty in the West Bank in 1998, 2004, 2007 and 2017 are calculated (constant 2015 dollars).

Following the stricter closures and restrictions imposed by Israel after the second intifada, the annual minimum real cost of eliminating poverty in the West Bank increased fivefold between 1998 and 2004, from $73 to $356, reaching $428 in 2007, or nearly six times the cost in 1998 (constant 2015 dollars). The difference between the minimum cost in 1998 and that in the following years is a measure of the cost of the Israeli measures in terms of poverty. This difference is equivalent to more than 5 per cent of the West Bank GDP in 2004 and 2007. Seventeen years after the outbreak of the second intifada, the percentage difference was 0.7 per cent of GDP. This reflects lost decades of development and the long-lasting effects of the restrictive Israeli measures (table 8).

Table 8
The West Bank: Minimum annual cost of eliminating poverty

Year	Cost (Millions of constant 2015 dollars)	Percentage of West Bank GDP	Difference compared with 1998	Percentage of West Bank GDP
1998	73	1.56	-	-
2004	356	6.94	283	5.5
2007	428	6.41	355	5.3
2017	162	1.29	89	0.7

Source: UNCTAD calculations.

Table 9
Regression results: Log assistance per adult equivalent

Independent variables from the Palestinian expenditure and consumption survey	2017	2007	2004
Intercept	4.461 (0.480)***	3.983 (0.878)***	2.581 (0.321)***
Log expenditures per adult equivalent, without assistance	-0.510 (0.039)***	-0.384 (0.051)***	-0.321 (0.031)***
Location (urban is base category)			
Rural	-0.012 (0.047)	-0.023 (0.078)	-0.030 (0.041)
Camp	0.184 (0.087)*	-0.120 (0.133)	0.113 (0.055)*
Characteristics of household head			
Gender	0.754 (0.077)***	0.411 (0.118)***	0.261 (0.062)***
Marital status	-0.158 (0.139)	0.078 (0.246)	0.104 (0.119)
Refugee status	-0.001 (0.048)	0.103 (0.077)	0.033 (0.040)
Education level	-0.079 (0.047)	-0.148 (0.081)	-0.008 (0.041)
Employment status			
Sector of employment (services is base category)			
Agriculture	-0.012 (0.090)	-0.064 (0.113)	-0.001 (0.059)
Construction	-0.159 (0.065)*	-0.075 (0.093)	0.026 (0.047)
Industry	-0.155 (0.073)*	0.106 (0.302)	0.005 (0.053)
Number of employed household members	-0.163 (0.029)***	-0.064 (0.040)	-0.009 (0.019)
Employment in Israel	-0.059 (0.063)	0.008 (0.100)	-
Employment abroad	-0.162 (0.306)	-0.242 (0.323)	-
Employment in national government	-0.205 (0.069)**	-0.119 (0.111)	0.026 (0.057)
Demographic characteristics of household			
Number of females	-0.064 (0.018)***	-0.090 (0.023)***	-0.070 (0.012)***
Number of males	-0.016 (0.019)	-0.071 (0.026)**	-0.039 (0.013)**
Number of adult females	0.042 (0.030)	0.010 (0.042)	0.019 (0.022)
Number of adult males	0.093 (0.023)***	0.026 (0.032)	0.011 (0.017)
Access to basic services			
Access to public water	0.022 (0.063)	-0.127 (0.104)	-0.031 (0.052)
Connection to sewage network	-0.033 (0.051)	0.120 (0.084)	0.039 (0.042)
Characteristics of household dwelling			
House ownership	-0.023 (0.059)	-0.058 (0.092)	-0.077 (0.057)
Number of rooms	-0.060 (0.030)*	0.041 (0.033)	0.004 (0.010)
Number of bedrooms	-0.001 (0.043)	-0.018 (0.060)	-0.011 (0.026)
Kitchen	-0.442 (0.323)	-1.289 (0.700)	-0.265 (0.163)
Bathroom	0.000 (0.076)	0.777 (0.530)	-0.398 (0.141)**
Toilet	0.025 (0.051)	0.235 (0.538)	0.077 (0.197)
Main source of cooking energy is gas	0.498 (0.231)*	-0.096 (0.212)	0.136 (0.108)
Main source of heating is gas	-0.087 (0.047)	-0.007 (0.068)	0.060 (0.036)
Household assets			
Car	0.118 (0.049)*	0.010 (0.074)	0.056 (0.040)
Refrigerator	0.022 (0.166)	0.144 (0.173)	-0.088 (0.078)
Boiler	0.002 (0.045)	0.023 (0.076)	0.054 (0.038)
Central heating	-0.081 (0.178)	-0.016 (0.209)	-0.027 (0.107)
Vacuum	-0.124 (0.048)**	-0.158 (0.082)	-0.021 (0.046)
Cooking stove	-0.167 (0.078)*	-0.947 (0.380)*	0.042 (0.146)
Washing machine	0.082 (0.044)	-0.015 (0.138)	0.016 (0.066)
Home library	-0.004 (0.065)	0.046 (0.083)	-0.004 (0.043)
Television	-0.127 (0.048)**	0.042 (0.189)	0.070 (0.089)
Telephone line	0.051 (0.048)	0.122 (0.075)	0.032 (0.039)
Computer	0.083 (0.048)	0.052 (0.074)	-0.071 (0.039)
Mobile telephone	-0.218 (0.069)**	0.081 (0.105)	0.060 (0.046)
R-squared	*0.253*	*0.178*	*0.131*
Adjusted R-squared	*0.243*	*0.137*	*0.114*
Number of observations	*2 879*	*831*	*1 927*

Notes: For variables and units of measurement and summary statistics from the surveys and censuses, see annexes I and II. Expenditures are in constant 2015 dollars. Standard errors are shown in parentheses.
Source: UNCTAD calculations.
* p < 0.05
** p < 0.01
*** p < 0.001

B. Allocation of assistance

With regard to the poverty headcount and poverty gap, the differences between these two measures based on expenditures with and without assistance mean that an explanation is required of how assistance is allocated. Cash and in-kind assistance provided to households in the Occupied Palestinian Territory is considered in this section. The methodology involves estimating the statistical relationship between assistance and the household expenditures category, while controlling for key household characteristics. The non-parametric portion of semiparametric estimates of the determinants of assistance per adult equivalent as a function of pre-assistance expenditures per adult equivalent are shown in figure 11. It seems evident that the slope, in absolute value terms, of the relationship between log expenditures and log assistance is significantly steeper in 2017 than it was in either 2004 or 2007. This relationship is confirmed as shown in table 9, in which the results from a linear specification are presented separately for each year. The elasticity of assistance with regard to expenditures is equal to -0.321 in 2004,-0.384 in 2007 and -0.510 in 2017; as such, the progressive nature of assistance in the West Bank has increased over time, in that the marginal reduction in assistance corresponding to a given increase in household expenditures has increased. This is part of the explanation for the pro-poor growth incidence curve (GIC) between 2007 and 2017 (see section C).

Figure 11
The West Bank: Semiparametric estimates of the effect of pre-assistance expenditures per adult equivalent on assistance per adult equivalent
(Constant 2015 dollars)
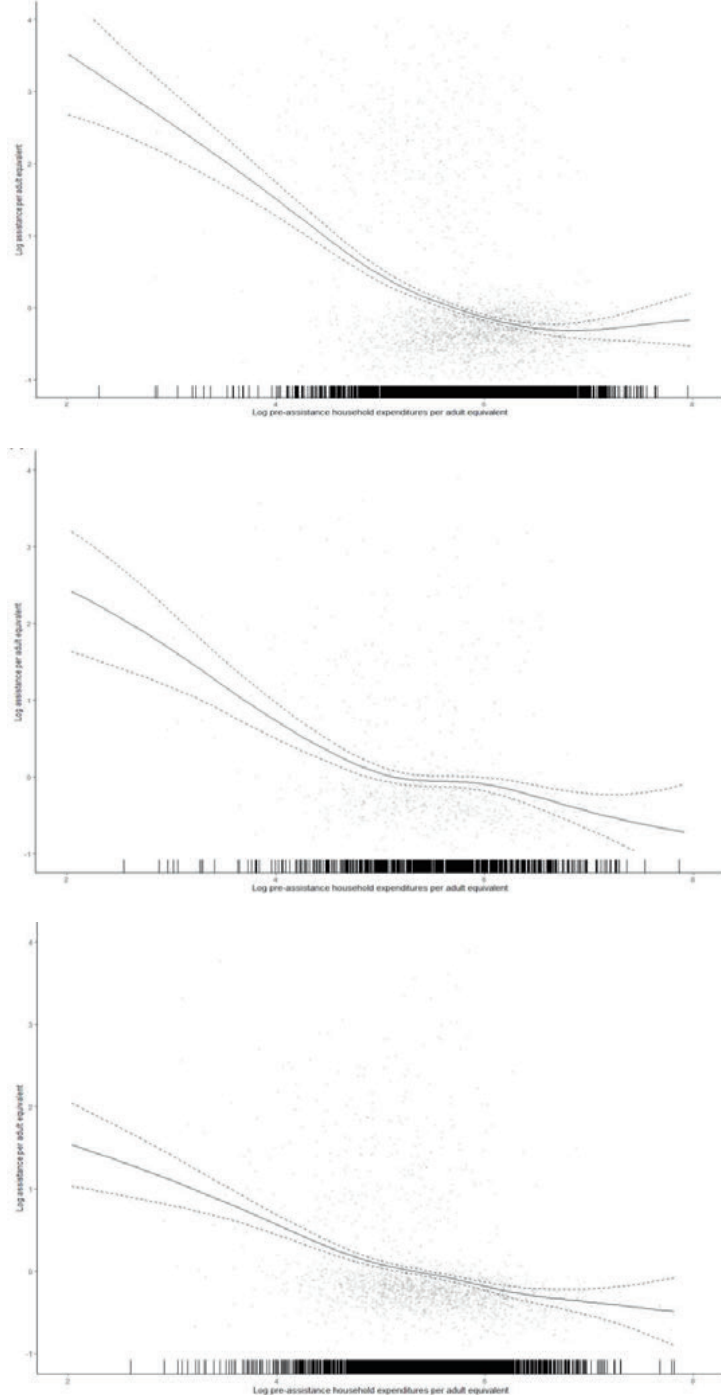
Note: Dotted lines correspond to a 95 per cent confidence interval.
Source: UNCTAD calculations.

C. The economic costs of the closures, restrictions and recurrent hostilities in terms of poverty in the West Bank

This section addresses the following question: "What would the poverty rate and poverty gap have been had the stricter Israeli restrictions and closure policy not been imposed in the wake of the second intifada?" This is evaluated by estimating the poverty indicators, consistent with the growth rates of the West Bank regional economy under the alternative scenario (see table 1). The tool used is the GIC methodology, first introduced by Ravallion and Chen (2003).

The use of this methodology is a particularly transparent way to understand changes in the distribution of household expenditures over time. While the mean growth rate of household expenditures over a given period is a useful datum, it does not shed light on whether and how different categories of households have been able to benefit from increases in average expenditures.

For example, given two categories of households, below and above the poverty line, if growth is pro-poor, a given mean increase in household expenditures per adult equivalent should benefit the poor households more than the non-poor households and the opposite should occur if growth is not pro-poor. Using the GIC methodology, this relationship is plotted for each quantile of distribution; the horizontal axis shows each quantile of distribution, and the vertical axis shows the percentage change in the total household expenditures of each quantile in the periods under consideration.

The immediate impact of the stricter Israeli restrictions and the closure policy imposed on the West Bank after the second intifada was significant on the poorer segment of the population and, therefore, the poorer segment of the population suffered more between 1998 and 2004 and between 2004 and 2007 (figure 12(a) and 12(b)). Only after the restrictive Israeli measures were relatively eased in the last decade did growth in the West Bank become pro-poor (figure 12(c)).

Figure 12
The West Bank: Growth incidence curves, 1998–2004, 2004–2007 and 2007–2017
(a) 1998–2004
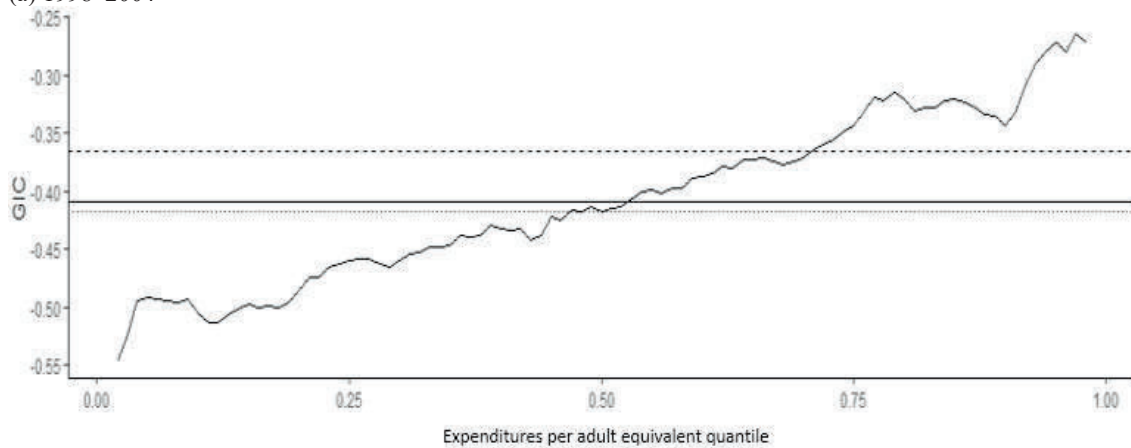
(b) 2004–2007
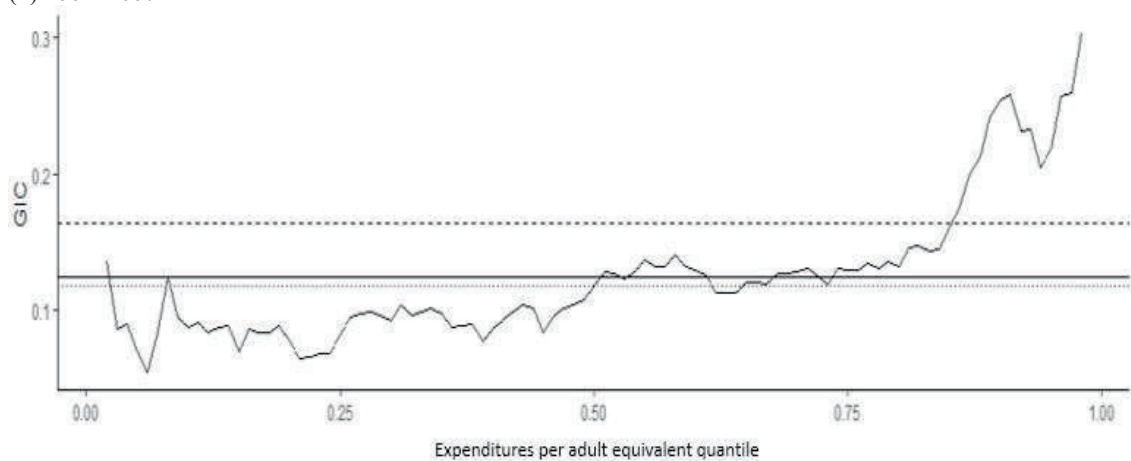
(c) 2007–2017
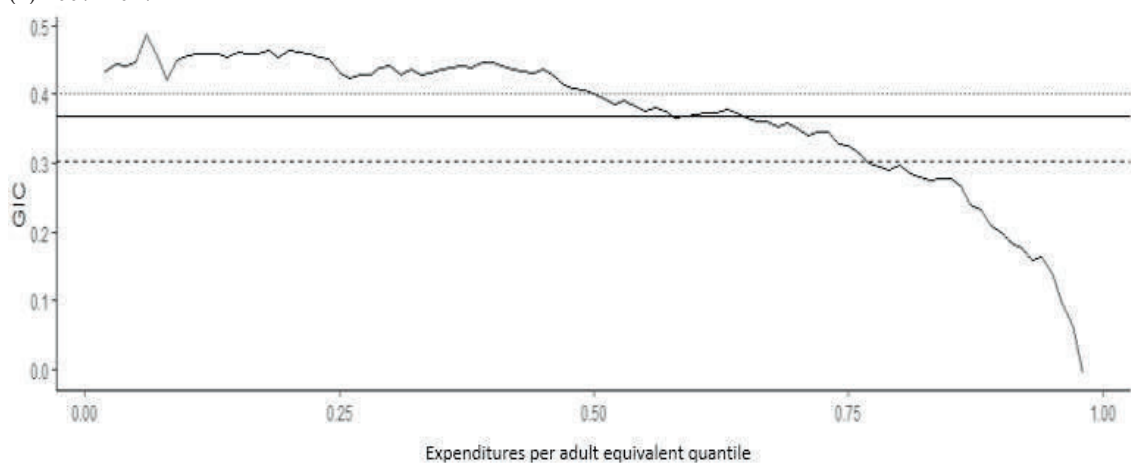
Note: The solid horizontal line in the upper part shows the mean growth rate, the dotted line shows growth at the mean and the dashed line shows growth at the median.
Source: UNCTAD calculations.

As detailed in chapter III, under the counterfactual (alternative) scenario, the level of GDP per capita would have been 45.3, 37.9 and 33.0 per cent higher than the actual level in 2004, 2007 and 2017, respectively. In this section, it is assumed that the average level of expenditures per adult equivalent would have followed the increases in GDP per capita under the alternative scenario, but that these increases would have been distributed to different households proportionally, in accordance with their relative position along the West Bank GIC.

Once the alternative values of household expenditures per adult equivalent are constructed, the survey-based method is applied, while the poverty line is maintained at its actual monthly level in 1998, that is, $176 per adult equivalent (constant 2015 dollars).

The calculations assume that the relative growth of each household's expenditures per adult equivalent would have followed that which prevailed under the 1998–2004 GIC and the 1998–2017 GIC (figure 13(a) and 13(b)). The 2007–2017 GIC is then applied to the period 1998–2017, to ascertain what might have happened had the more pro-poor growth of this subperiod applied to the entire period (figure 13(c)).

The results are striking. For 2004, the alternative ECDF is quite close to that in 1998. Indeed, despite the anti-poor nature of the 1998–2004 GIC, the counterfactual, alternative, poverty rate in 2004 would have fallen with respect to 1998 and would have been equal to 11.7 per cent, in contrast to the actual poverty rate in 2004 of 35.5 per cent (using the poverty line of 1998). Similarly, the poverty gap under the alternative scenario would have been equal to 4.8 per cent instead of the actual 11 per cent (table 10).

For 2017, the alternative ECDF would have been far to the right of that actually observed and the anti-poor bias of the 1998–2017 GIC would have resulted in a higher poverty rate (18.7 per cent) than that observed (10.3 per cent), which would have been largely compensated for by the significant increase in expenditures per adult equivalent for all households situated above the poverty line of 1998. The anti-poor bias of the 1998–2017 GIC is apparent from the fact that the alternative ECDF lies above the actual ECDF for relatively low quantiles of the distribution and below the actual ECDF for high quantiles. Concomitantly, the poverty gap under the alternative scenario would have increased to 9.6 per cent, in contrast to the actual figure of 2.5 per cent.

Conversely, if growth in the period 1998–2017 had followed the pro-poor pattern observed in the period 2007–2017, the alternative ECDF would have been below the actual ECDF for low quantiles of the distribution and above the actual ECDF only for the uppermost reaches of the distribution. Under this pro-poor scenario, the counterfactual poverty rate would have fallen to 6 per cent and the counterfactual poverty gap to 4.4 per cent.[7] Thus, the restrictions imposed after the second intifada thwarted the economic expansion of the West Bank and led to

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[7] The reason for the slight increase in the 2017 counterfactual (alternative) poverty gap is that most of the poor households that moved above the poverty line were not actually far below the line and only those who were far below the line remained poor under the alternative scenario.

significant losses in terms of the livelihoods of Palestinians, with those living below the poverty line of 1998 paying the highest price.

Table 10
The West Bank: Poverty headcount and poverty gap, alternative scenario
(Poverty line = 1998 poverty line)

Year	Poverty headcount		Poverty gap	
	Survey-based method	Alternative scenario	Survey-based method	Alternative scenario
1998	0.116	-	0.028	-
2004	0.354	0.117	0.110	0.048
2017	0.103	0.060	0.025	0.045

Source: UNCTAD calculations.

Figure 13
The West Bank: Empirical cumulative density functions for total monthly household expenditures per adult equivalent, including assistance, actual and alternative
(a) 2004 counterfactual, 1998–2004 growth incidence curve
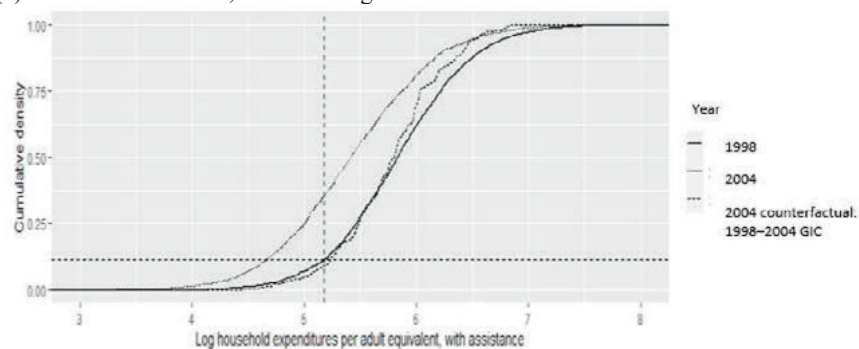
(b) 2017 counterfactual, 1998–2017 growth incidence curve
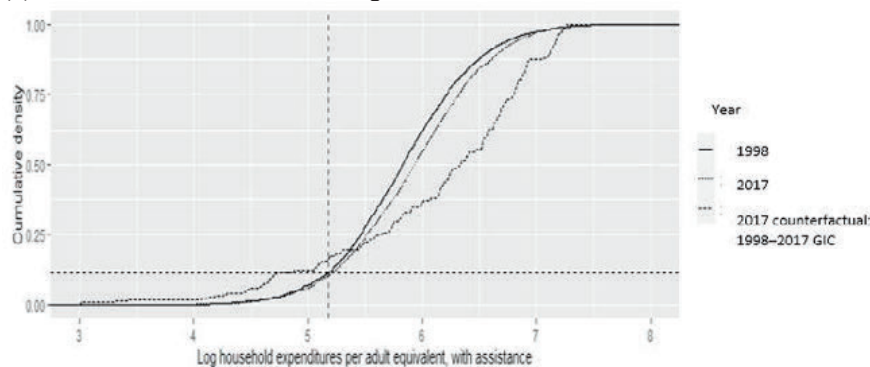
(c) 2017 counterfactual, 2007–2017 growth incidence curve
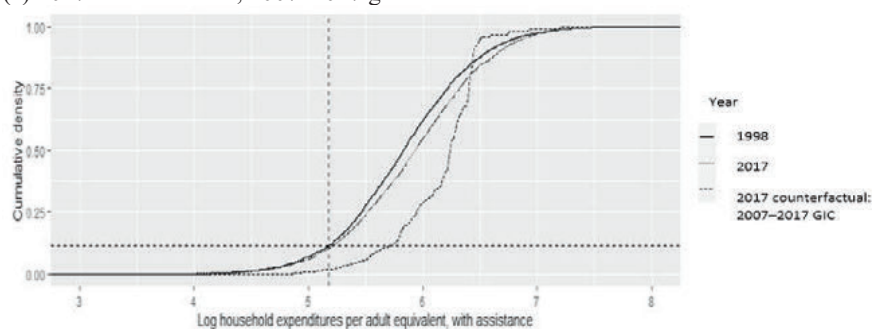
Source: UNCTAD calculations.

V. Conclusion and recommendations

A. Concluding remarks

The stricter closures and restrictions imposed by Israel on the West Bank in the aftermath of the second intifada have arrested development, exerted a long-lasting toll and aggravated the economy's deep-seated structural weaknesses and vulnerability. These are manifested by volatile economic growth, chronic fiscal and external deficits and persistently high unemployment and poverty rates. The measures imposed by the occupying Power have had a long-lasting impact that continues to constrain the regional economy of the West Bank to this day.

The regional economy of the West Bank experienced two decades of jobless growth, with the unemployment rate averaging 18 per cent between 1995 and 2019 in the context of extremely low labour force participation rates and a high level of dependence on employment in Israel and settlements. Without employment in Israel and settlements, the unemployment rate would have been 16 per cent higher, on par with the extremely high rates in the Gaza Strip, which has been under blockade since 2007.

The cumulative economic cost of the stricter Israeli restrictions, in the period 2000–2019, is estimated at $58 billion (constant 2015 dollars), equivalent to 4.5 times the size of the West Bank regional economy or 3.5 times the size of the entire economy of the Occupied Palestinian Territory in 2019.

In terms of poverty, the impact of the stricter Israeli restrictions was severe and long-lasting, especially for the poorer segments of the population in the West Bank, who were less able to benefit from the eventual economic recovery. Without the stricter Israeli restrictions, imposed after the second intifada, the poverty rate in the West Bank would have been 11.7 per cent in 2004 instead of 35.4 per cent and the poverty gap would have been 4.8 instead of 11 per cent. Furthermore, the real minimum cost of eliminating poverty in the West Bank jumped from $73 million in 1998 to $356 million and $428 million in 2004 and 2007, respectively (constant 2015 dollars).

B. Recommendations

The recovery period and the distortion of the growth structure in the West Bank in the wake of the second intifada should be taken as a lesson. It is key for Israel to remove all restrictions that arrest development and impede sustainable development in the West Bank and the entire Occupied Palestinian Territory. The occupying Power, Palestinian policymakers, the international community and development partners may wish to consider the following:

1. Terminating and reversing the evolving and accumulated costs of the Israeli occupation for the Palestinian people, which cannot be realized without ending the occupation, in line with the relevant United Nations resolutions.

2. Lifting all of the mobility restrictions in the Occupied Palestinian Territory and re-establishing the contiguity of the territory by reconnecting East Jerusalem and all of the cities and villages in the West Bank and the Gaza Strip with each other.

3. Enabling the Palestinian public and private sectors to establish and operate agricultural, industrial, commercial and mining businesses in Area C (at least 60 per cent of the West Bank), which contains the most valuable natural resources in the Occupied Palestinian Territory, including fertile land, minerals, stones and tourist attractions.

4. Ending and reversing all settlement activities in the Occupied Palestinian Territory, including East Jerusalem, as called for by the Security Council in its resolution 2334(2016), in which it reaffirms that the establishment by Israel of settlements in the Occupied Palestinian Territory, including East Jerusalem, has no legal validity and constitutes a flagrant violation under international law.

5. Implementing pro-poor, inclusive growth strategies that target the poor and involve large-scale investment in employment-intensive sectors, to reduce poverty and generate sufficient decent job opportunities in the domestic economy and, consequently, reduce dependence on precarious employment in Israel and settlements.

6. Establishing within the United Nations system a systematic, evidence-based, comprehensive and sustainable framework to assess the costs of occupation and report on the results to the General Assembly to fulfil the requests in relevant resolutions, towards achieving a just and lasting peace in the Middle East. The establishment of such a system will require securing additional resources.

Annex 1
Variables: Definition and measurement

The following table shows all of the variables used in the regressions presented in tables 4, 5 and 9.

Table 1.1
Variables: Definition and measurement

Variable	Description
Adult equivalent	Organisation for Economic Co-operation and Development and World Bank definition of adult equivalent using the equation: (1 + (number of adults - 1) * 0.8 + (number of children * 0.5))
Assistance	All government and non-government cash and in-kind assistance (constant 2015 dollars)
Total monthly expenditures per adult equivalent, with assistance	Total household expenditures with assistance (constant 2015 dollars) divided by adult equivalent of household
Total monthly expenditures per adult equivalent, without assistance	Total household expenditures without assistance (constant 2015 dollars) divided by adult equivalent of household
Gender of household head	Dummy variable that takes the value of 1 if head of household is female and 0 if male
Marital status of household head	Dummy variable that takes the value of 1 if head of household ever married and 0 if not
Refugee status of household head	Dummy variable that takes the value of 1 if head of household is a registered or unregistered refugee and 0 if they are not
Educational level of household head	Dummy variable that takes the value of 1 if attainment of head of household is secondary education level or above and 0 if below secondary education level
Employment status of household head	Dummy variable that takes the value of 1 if head of household is employed and 0 if not
Agriculture	Dummy variable that takes the value of 1 if head of household works in the agriculture and fishing sectors and 0 if not
Construction	Dummy variable that takes the value of 1 if head of household works in the construction sector and 0 if not
Industry	Dummy variable that takes the value of 1 if head of household works in the mining, manufacturing, electricity and water sectors and 0 if not
Services	Dummy variable that takes the value of 1 if head of household works in the services sectors and 0 if not
Number of employed household members	Number of employed members of household
Employment in Israel	Dummy variable that takes the value of 1 if head of household is employed in Israel or settlements and 0 if not
Employment abroad	Dummy variable that takes the value of 1 if head of household is employed abroad and 0 if not
Employment in national government	Dummy variable that takes the value of 1 if head of household is employed in the national government and 0 if not
Number of females	Number of females in household
Number of males	Number of males in household
Number of adult females	Number of females above 15 years old
Number of adult males	Number of males above 15 years old
Access to public water	Dummy variable that takes the value of 1 if household is connected to the public water network and 0 if not
Access to electricity	Dummy variable that takes the value of 1 if household is connected to the electricity network and 0 if not
Connection to sewage network	Dummy variable that takes the value of 1 if household is connected to the sewage network and 0 if not
House ownership	Dummy variable that takes the value of 1 if household owns the dwelling they live in and 0 if not
Number of rooms	Number of rooms in household dwelling
Number of bedrooms	Number of bedrooms in household dwelling
Kitchen	Dummy variable that takes the value of 1 if a kitchen is available in household dwelling and 0 if not
Bathroom	Dummy variable that takes the value of 1 if a bathroom is available in household dwelling and 0 if not

Variable	Description
Toilet	Dummy variable that takes the value of 1 if a toilet is available in household dwelling and 0 if not
Main source of cooking energy is gas	Dummy variable that takes the value of 1 if main source of cooking energy is gas and 0 if not
Main source of heating is gas	Dummy variable that takes the value of 1 if main source of heating is gas and 0 if not
Car	Dummy variable that takes the value of 1 if household owns a private car and 0 if not
Refrigerator	Dummy variable that takes the value of 1 if a refrigerator is available in household dwelling and 0 if not
Boiler	Dummy variable that takes the value of 1 if a boiler is available in household dwelling and 0 if not
Central heating	Dummy variable that takes the value of 1 if central heating is available in household dwelling and 0 if not
Vacuum	Dummy variable that takes the value of 1 if a vacuum is available in household dwelling and 0 if not
Cooking stove	Dummy variable that takes the value of 1 if a cooking stove is available in household dwelling and 0 if not
Washing machine	Dummy variable that takes the value of 1 if a washing machine is available in household dwelling and 0 if not
Home library	Dummy variable that takes the value of 1 if a home library is available in household dwelling and 0 if not
Television	Dummy variable that takes the value of 1 if a television is available in household dwelling and 0 if not
Telephone line	Dummy variable that takes the value of 1 if a telephone line is available in household dwelling and 0 if not
Computer	Dummy variable that takes the value of 1 if a computer is available in household dwelling and 0 if not
Mobile telephone	Dummy variable that takes the value of 1 if a mobile telephone is available in household dwelling and 0 if not

Source: Palestinian expenditure and consumption surveys and censuses, 2004, 2007 and 2017.

Annex 2
Summary statistics

Table 2.1
Summary statistics: Palestinian expenditure and consumption survey, 2004

Variable	Mean	Standard deviation	Minimum	Percentile (25)	Median	Percentile (75)	Maximum
Expenditures per adult equivalent, with assistance	257.4	243.9	13.341	127.8	198.0	310.8	7 044.2
Expenditures per adult equivalent, without assistance	251.9	244.8	1.084	121.9	193.4	306.9	7 044.2
West Bank	0.624	0.485	0	0	1	1	1
Gaza	0.376	0.485	0	0	0	1	1
Urban	0.455	0.498	0	0	0	1	1
Rural	0.307	0.461	0	0	0	1	1
Camp	0.238	0.426	0	0	0	0	1
Gender of household head	0.087	0.282	0	0	0	0	1
Marital status of household head	0.980	0.141	0	1	1	1	1
Refugee status of household head	0.506	0.500	0	0	1	1	1
Education level of household head	0.323	0.468	0	0	0	1	1
Employment status of household head	0.829	0.377	0	1	1	1	1
Agriculture	0.119	0.324	0	0	0	0	1
Construction	0.156	0.363	0	0	0	0	1
Industry	0.107	0.309	0	0	0	0	1
Services	0.618	0.486	0	0	1	1	1
Number of employed household members	1.671	1.260	0	1	1	2	16
Employment in Israel	0.000	0.000	0	0	0	0	0
Employment abroad	0.000	0.000	0	0	0	0	0
Employment in national government	0.163	0.370	0	0	0	0	1
Number of females	3.300	1.901	0	2	3	4	14
Number of males	3.350	2.009	0	2	3	4	16
Number of adult females	0.675	0.928	0	0	0	1	6
Number of adult males	3.014	1.673	0	2	2	4	13
Access to public water	0.882	0.322	0	1	1	1	1
Access to electricity	0.984	0.124	0	1	1	1	1
Connection to sewage network	0.506	0.500	0	0	1	1	1
House ownership	0.919	0.273	0	1	1	1	1
Number of rooms	3.827	1.869	1	3	4	5	63
Number of bedrooms	2.406	1.056	1	2	2	3	11
Kitchen	0.989	0.106	0	1	1	1	1
Bathroom	0.981	0.138	0	1	1	1	1
Toilet	0.990	0.101	0	1	1	1	1
Main source of cooking energy is gas	0.972	0.166	0	1	1	1	1
Main source of heating is gas	0.252	0.434	0	0	0	1	1
Car	0.238	0.426	0	0	0	0	1
Refrigerator	0.928	0.258	0	1	1	1	1
Boiler	0.676	0.468	0	0	1	1	1
Central heating	0.019	0.136	0	0	0	0	1
Vacuum	0.185	0.389	0	0	0	0	1
Cooking stove	0.989	0.106	0	1	1	1	1
Washing machine	0.892	0.310	0	1	1	1	1
Home library	0.215	0.411	0	0	0	0	1
Television	0.935	0.247	0	1	1	1	1
Telephone line	0.376	0.484	0	0	0	1	1
Computer	0.655	0.475	0	0	1	1	1
Mobile telephone	0.746	0.436	0	0	1	1	1
Number of observations							3 089 households

Source: Palestinian expenditure and consumption survey, 2004.

Table 2.2
Summary statistics: Palestinian expenditure and consumption survey, 2007

Variable	Mean	Standard deviation	Minimum	Percentile (25)	Median	Percentile (75)	Maximum
Expenditures per adult equivalent, with assistance	282.1	273.7	7.352	126.5	204.8	337.9	4 445.1
Expenditures per adult equivalent, without assistance	274.5	273.3	0.324	117.7	201.3	330.2	4 445.1
West Bank	0.679	0.467	0	0	1	1	1
Gaza	0.321	0.467	0	0	0	1	1
Urban	0.551	0.498	0	0	1	1	1
Rural	0.289	0.453	0	0	0	1	1
Camp	0.160	0.367	0	0	0	0	1
Gender of household head	0.087	0.281	0	0	0	0	1
Marital status of household head	0.984	0.124	0	1	1	1	1
Refugee status of household head	0.424	0.494	0	0	0	1	1
Education level of household head	0.315	0.465	0	0	0	1	1
Employment status of household head	0.677	0.468	0	0	1	1	1
Agriculture	0.107	0.309	0	0	0	0	1
Construction	0.140	0.347	0	0	0	0	1
Industry	0.009	0.094	0	0	0	0	1
Services	0.470	0.499	0	0	0	1	1
Number of employed household members	1.312	1.061	0	1	1	2	8
Employment in Israel	0.100	0.300	0	0	0	0	1
Employment abroad	0.007	0.081	0	0	0	0	1
Employment in national government	0.158	0.365	0	0	0	0	1
Number of females	3.175	1.780	0	2	3	4	12
Number of males	3.226	1.806	0	2	3	4	10
Number of adult females	0.664	0.893	0	0	0	1	5
Number of adult males	3.002	1.580	1	2	2	4	9
Access to public water	0.895	0.306	0	1	1	1	1
Access to electricity	0.989	0.106	0	1	1	1	1
Connection to sewage network	0.493	0.500	0	0	0	1	1
House ownership	0.874	0.332	0	1	1	1	1
Number of rooms	3.983	1.437	1	3	4	5	15
Number of bedrooms	2.403	0.968	1	2	2	3	8
Kitchen	0.998	0.049	0	1	1	1	1
Bathroom	0.997	0.057	0	1	1	1	1
Toilet	0.997	0.057	0	1	1	1	1
Main source of cooking energy is gas	0.977	0.150	0	1	1	1	1
Main source of heating is gas	0.270	0.444	0	0	0	1	1
Car	0.251	0.434	0	0	0	1	1
Refrigerator	0.955	0.207	0	1	1	1	1
Boiler	0.725	0.447	0	0	1	1	1
Central heating	0.016	0.127	0	0	0	0	1
Vacuum	0.289	0.453	0	0	0	1	1
Cooking stove	0.993	0.086	0	1	1	1	1
Washing machine	0.927	0.260	0	1	1	1	1
Home library	0.267	0.442	0	0	0	1	1
Television	0.957	0.204	0	1	1	1	1
Telephone line	0.430	0.495	0	0	0	1	1
Computer	0.360	0.480	0	0	0	1	1
Mobile telephone	0.865	0.342	0	1	1	1	1
Number of observations							1 223 households

Source: Palestinian expenditure and consumption survey, 2007.

Table 2.3
Summary statistics: Census, 2007

Variable	Mean	Standard deviation	Minimum	Percentile (25)	Median	Percentile (75)	Maximum
West Bank	0.654	0.476	0	0	1	1	1
Gaza	0.346	0.476	0	0	0	1	1
Urban	0.735	0.441	0	0	1	1	1
Rural	0.735	0.441	0	0	1	1	1
Camp	0.089	0.285	0	0	0	0	1
Gender of household head	0.092	0.289	0	0	0	0	1
Marital status of household head	0.975	0.157	0	1	1	1	1
Refugee status of household head	0.416	0.493	0	0	0	1	1
Education level of household head	0.373	0.483	0	0	0	1	1
Employment status of household head	0.612	0.487	0	0	1	1	1
Agriculture	0.050	0.217	0	0	0	0	1
Construction	0.146	0.354	0	0	0	0	1
Industry	0.087	0.281	0	0	0	0	1
Services	0.717	0.450	0	0	1	1	1
Number of employed household members	0.970	0.867	0	0	1	1	11
Employment in Israel	0.246	0.431	0	0	0	0	1
Employment abroad	0.083	0.277	0	0	0	0	1
Employment in national government	0.173	0.378	0	0	0	0	1
Number of females	2.884	1.715	0	2	3	4	20
Number of males	2.960	1.780	0	2	3	4	27
Number of adult females	0.608	0.840	0	0	0	1	7
Number of adult males	2.732	1.533	0	2	2	4	16
Access to public water	0.806	0.395	0	1	1	1	1
Access to electricity	0.925	0.264	0	1	1	1	1
Connection to sewage network	0.461	0.498	0	0	0	1	1
House ownership	0.765	0.424	0	1	1	1	1
Number of rooms	3.558	1.327	1	3	3	4	24
Number of bedrooms	1.595	1.267	0	1	1	2	22
Kitchen	0.919	0.273	0	1	1	1	1
Bathroom	0.917	0.276	0	1	1	1	1
Toilet	0.919	0.272	0	1	1	1	1
Main source of cooking energy is gas	0.912	0.284	0	1	1	1	1
Main source of heating is gas	0.261	0.439	0	0	0	1	1
Car	0.176	0.381	0	0	0	0	1
Refrigerator	0.867	0.339	0	1	1	1	1
Boiler	0.629	0.483	0	0	1	1	1
Central heating	0.027	0.163	0	0	0	0	1
Vacuum	0.266	0.442	0	0	0	1	1
Cooking stove	0.922	0.268	0	1	1	1	1
Washing machine	0.855	0.352	0	1	1	1	1
Home library	0.187	0.390	0	0	0	0	1
Television	0.879	0.326	0	1	1	1	1
Telephone line	0.401	0.490	0	0	0	1	1
Computer	0.364	0.481	0	0	0	1	1
Mobile telephone	0.649	0.477	0	0	1	1	1
Number of observations						123 187 households	

Source: Palestinian census, 2007.

Table 2.4
Summary statistics: Palestinian expenditure and consumption survey, 2017

Variable	Mean	Standard deviation	Minimum	Percentile (25)	Median	Percentile (75)	Maximum
Expenditures per adult equivalent, with assistance	398.3	393.0	15.1	197.8	325.3	505.9	14 635.1
Expenditures per adult equivalent, without assistance	388.8	395.1	0.00	188.4	315.7	501.5	14 635.1
West Bank	0.776	0.417	0	1	1	1	1
Gaza	0.224	0.417	0	0	0	0	1
Urban	0.568	0.495	0	0	1	1	1
Rural	0.318	0.466	0	0	0	1	1
Camp	0.114	0.318	0	0	0	0	1
Gender of household head	0.104	0.305	0	0	0	0	1
Marital status of household head	0.979	0.143	0	1	1	1	1
Refugee status of household head	0.417	0.493	0	0	0	1	1
Education level of household head	0.660	0.474	0	0	1	1	1
Employment status of household head	0.727	0.446	0	0	1	1	1
Agriculture	0.062	0.242	0	0	0	0	1
Construction	0.173	0.379	0	0	0	0	1
Industry	0.090	0.286	0	0	0	0	1
Services	0.675	0.469	0	0	1	1	1
Number of employed household members	1.342	0.984	0	1	1	2	8
Employment in Israel	0.140	0.347	0	0	0	0	1
Employment abroad	0.004	0.063	0	0	0	0	1
Employment in national government	0.157	0.364	0	0	0	0	1
Number of females	2.681	1.486	0	2	2	4	9
Number of males	2.728	1.593	0	2	3	4	13
Number of adult females	0.549	0.814	0	0	0	1	5
Number of adult males	2.833	1.410	1	2	2	4	10
Access to public water	0.892	0.311	0	1	1	1	1
Access to electricity	1.000	0.000	1	1	1	1	1
Connection to sewage network	0.425	0.494	0	0	0	1	1
House ownership	0.832	0.374	0	1	1	1	1
Number of rooms	4.989	1.344	1	4	5	6	14
Number of bedrooms	2.206	0.859	0	2	2	3	7
Kitchen	0.995	0.071	0	1	1	1	1
Bathroom	0.130	0.336	0	0	0	0	1
Toilet	0.296	0.457	0	0	0	1	1
Main source of cooking energy is gas	0.986	0.118	0	1	1	1	1
Main source of heating is gas	0.221	0.415	0	0	0	0	1
Car	0.295	0.456	0	0	0	1	1
Refrigerator	0.973	0.162	0	1	1	1	1
Boiler	0.520	0.500	0	0	1	1	1
Central heating	0.011	0.105	0	0	0	0	1
Vacuum	0.401	0.490	0	0	0	1	1
Cooking stove	0.920	0.271	0	1	1	1	1
Washing machine	0.510	0.500	0	0	1	1	1
Home library	0.125	0.331	0	0	0	0	1
Television	0.563	0.496	0	0	1	1	1
Telephone line	0.373	0.484	0	0	0	1	1
Computer	0.368	0.482	0	0	0	1	1
Mobile telephone	0.838	0.368	0	1	1	1	1
Number of observations							3 708 households

Source: Palestinian expenditure and consumption survey, 2017.

Table 2.5
Summary statistics: Census, 2017

Variable	Mean	Standard deviation	Minimum	Percentile (25)	Median	Percentile (75)	Maximum
West Bank	0.608	0.476	0	0	1	1	1
Gaza	0.392	0.476	0	0	0	1	1
Urban	0.755	0.441	0	0	1	1	1
Rural	0.161	0.441	0	0	1	1	1
Camp	0.083	0.285	0	0	0	0	1
Gender of household head	0.100	0.289	0	0	0	0	1
Marital status of household head	0.979	0.157	0	1	1	1	1
Refugee status of household head	0.415	0.493	0	0	0	1	1
Education level of household head	0.442	0.483	0	0	0	1	1
Employment status of household head	0.363	0.487	0	0	1	1	1
Agriculture	0.037	0.217	0	0	0	0	1
Construction	0.159	0.354	0	0	0	0	1
Industry	0.083	0.281	0	0	0	0	1
Services	0.405	0.450	0	0	1	1	1
Number of employed household members	0.607	0.867	0	0	1	1	11
Employment in Israel	0.119	0.431	0	0	0	0	1
Employment abroad	0.089	0.277	0	0	0	0	1
Employment in national government	0.145	0.378	0	0	0	0	1
Number of females	2.527	1.715	0	2	3	4	20
Number of males	2.608	1.780	0	2	3	4	27
Number of adult females	0.518	0.840	0	0	0	1	7
Number of adult males	2.606	1.533	0	2	2	4	16
Access to public water	0.578	0.395	0	1	1	1	1
Access to electricity	0.997	0.264	0	1	1	1	1
Connection to sewage network	0.546	0.498	0	0	0	1	1
House ownership	0.861	0.424	0	1	1	1	1
Number of rooms	3.620	1.327	1	3	3	4	24
Number of bedrooms	2.163	1.267	0	1	1	2	22
Kitchen	0.995	0.273	0	1	1	1	1
Bathroom	0.194	0.276	0	1	1	1	1
Toilet	0.366	0.272	0	1	1	1	1
Main source of cooking energy is gas	0.990	0.284	0	1	1	1	1
Main source of heating is gas	0.220	0.439	0	0	0	1	1
Car	0.259	0.381	0	0	0	0	1
Refrigerator	0.978	0.339	0	1	1	1	1
Boiler	0.560	0.483	0	0	1	1	1
Central heating	0.016	0.163	0	0	0	0	1
Vacuum	0.400	0.442	0	0	0	1	1
Cooking stove	0.990	0.268	0	1	1	1	1
Washing machine	0.954	0.352	0	1	1	1	1
Home library	0.095	0.390	0	0	0	0	1
Television	0.135	0.326	0	1	1	1	1
Telephone line	0.336	0.490	0	0	0	1	1
Computer	0.371	0.481	0	0	0	1	1
Mobile telephone	0.966	0.477	0	0	1	1	1
Number of observations						170 938 households	

Source: Palestinian census, 2017.

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