

# **Enforcing Israeli Labour Market Laws against Non-Israelis: Who Pays the Price?**

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## **Abstract**

A high number of Palestinian workers used to work in Israel for decades. These people are mostly employed in low-skilled jobs in Israeli sectors which are highly dependent on foreign labour, namely agriculture and construction. With the beginning of the second Intifada in 2000, border restrictions increased severely due to security concerns, limiting employment possibilities for Palestinians and leaving Palestine with severe unemployment and loss of income. Israeli employers have substituted Palestinian workers with an increasing number of foreign workers, mostly from Asia. Growing unemployment among Israeli unskilled workers caused Israel to impose quotas on the employment of foreigners. The weak enforcement of the permit system leads to a growing number of foreign workers which are working illegally without a valid permit in Israel. Regularly the Israeli government enunciates to decrease the number of non-Israeli workers in Israel. The purpose of this paper is to estimate the effects which would accrue to Israel and the West Bank from enforcing the Israeli labour law and restricting the number of Palestinian workers and workers from the rest of the world to the amount of working permits issued. Therefore, we use an extended version of the single country CGE model STAGE (McDonald, 2009), adapted to a Social Accounting Matrix (SAM) of Israel for the year 2004 (Siddig et al., 2011) to simulate the effects of different Israeli labour policy regimes.

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# 1 Introduction

Israeli and Palestinian labour markets were strongly integrated for decades. Palestinian workers commute to Israel on a day-to-day basis where they are usually employed at considerably higher wages than at home. In Israel, the agricultural and construction sectors are particularly highly dependent on the availability of cheap foreign labour. However, political relations between Israel and the Palestinian Territories remain tense. The situation fluctuates between periods of high tensions and somewhat more stability. The first election of the Palestinian Authority in 1995 took place when the peace process was ongoing and borders were open. In 1999 Israel was the biggest employer of Palestinian workers, with 23% of the employed Palestinians working in Israel and the settlements (PCBS, 2010). However, the situation suddenly changed with the outbreak of the second Intifada, the Palestinian uprising, in the last month of 2000. Accordingly, a partial closure of the Israeli-Palestinian border for goods and people was imposed which varies overtime in its degree of restrictiveness. As a result, only 8% of Palestinian employees were still working in Israel and the settlements in 2004, leading to severe unemployment and loss of income in Palestine (PCBS, 2010). Until recently, crossing the border is subject to serious restrictions. Israeli employers have substituted Palestinian cross-border workers with an increasing number of foreign workers, mostly from Asia. A growing unemployment rate among Israeli low and unskilled workers caused Israel to impose quotas on the employment of foreign workers, which are said to crowd out Israeli workers. But weak enforcement of the permit system leads to a growing number of foreign workers working illegally without a valid permit in Israel. In this context the Israeli government regularly enunciates to decrease the number of non-Israeli workers in Israel.

Against this background, the objective of this paper is to estimate the effects which would accrue to both economies from enforcing the Israeli labour law and restricting the number of Palestinian workers and workers from the rest of the world to the amount of working permits issued. The study relies on an extended version of the CGE model STAGE (McDonald, 2009), together with a detailed Social Accounting Matrix (SAM) for Israel (Siddig et al., 2011).

The Palestinian Territories consist of the West Bank and the Gaza Strip. These two regions have de facto little economic interactions, face different economic and social development, are ruled by different parties, and experience different treatment from Israel. Regarding the labour market, the regions show significant differences. While unemployment in the West

Bank slightly decreased from 28.2% in 2002 to 17.8% in 2009, it remained high at 38.6% in 2009 in the Gaza Strip (see Figure 1; PCBS, 2010). Furthermore, while there are no cross-border workers from Gaza working in Israel anymore, about 14.0% of West Bank workers are still working in Israel (PCBS, 2010). As the political situation between the governments of the Gaza Strip and Israel remain tense, the blockade of the Gaza Strip is unlikely to be lifted soon. Furthermore, the economic interdependence of the two Palestinian regions is weak, particularly with respect to the labour market: less than 1.0% of West Bank workers have been employed in Gaza since 1995 and vice versa. Accordingly, this paper focuses only on the labour markets of the West Bank and Israel.

Chapter 2 provides an overview of the Israeli and Palestinian labour markets with a special focus on foreign labour in Israel. Chapter 3 explains the single country CGE model used in this study and describes its underlying database, namely the Israeli SAM for the year 2004. Moreover, this chapter covers the adjustments that are incorporated in the model which capture the intended simulations of labour movements across borders between the West Bank and Israel. Chapter 4 introduces simulated scenarios and subsequently presents and discusses the results of the analysis. In the last chapter, conclusions are drawn and potential policy implications are discussed.

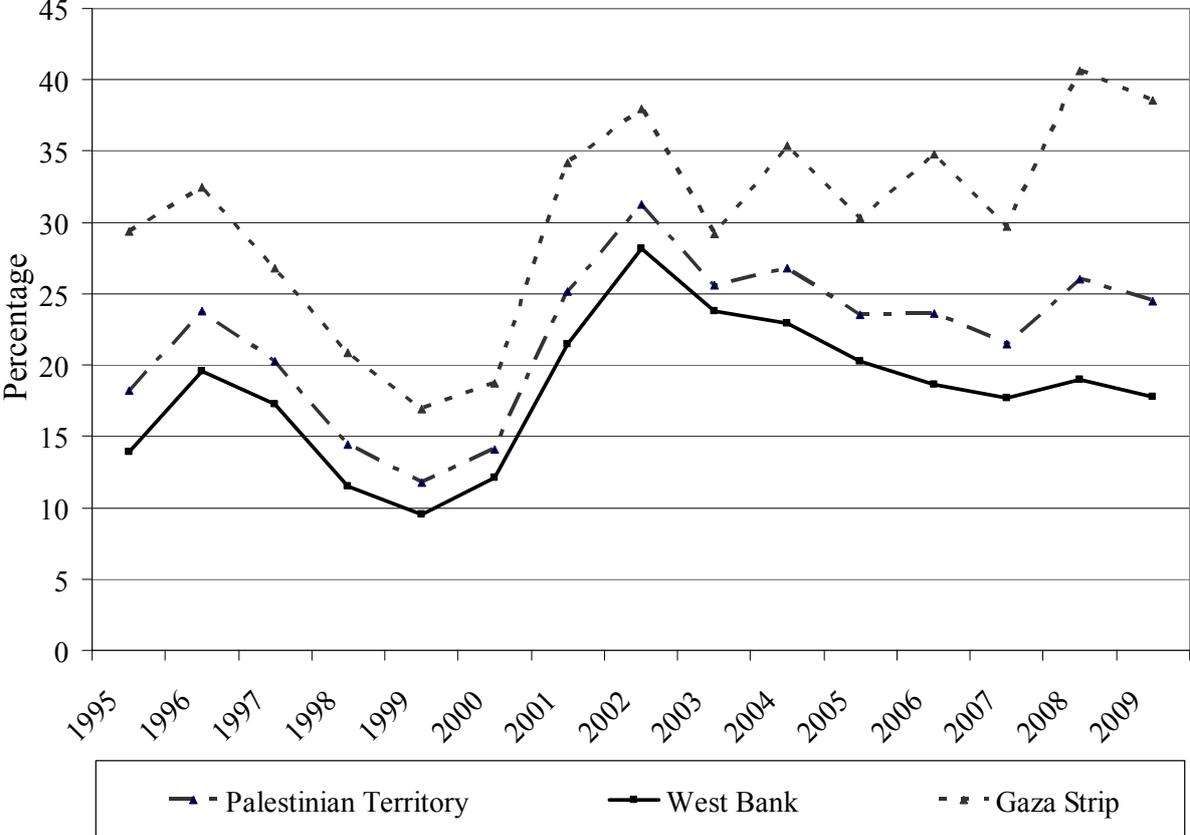
## **2 Labour markets in the West Bank and Israel**

### **2.1 The West Bank labour market**

Economic growth in the West Bank in recent years led to positive trends in the labour market, boosting employment and reducing unemployment. The West Bank labour force is fast growing: during the last 15 years the labour force nearly doubled from 358 thousand to 643 thousand persons in 2009 (PCBS, 2010). The labour force participation rate is increasing too, but it stays at a relatively low level of 43.8% in 2009. This is mainly because of the low participation rate of women of 17.4%. In the Gaza Strip, the labour force participation rate is considerably lower at 37.6% in 2009. As a result of high economic growth after the establishment of the Palestinian Authority in 1995, unemployment strongly declined in the late 1990s (Figure 1). This positive development came to a sudden stop with the outbreak of the second Intifada in 2000, resulting in the closure of the Israeli-Palestinian border as well as the establishment of movement obstacles, such as checkpoints and road barriers within the

Palestinian Territories. This led to a strong contraction of the Palestinian economy, which caused high unemployment.

**Figure 1: Unemployment rates in the Palestinian Territories (in percentage, 1995-2009)**



Source: Own compilation based on PCBS (2010).

However, restrictions on access to the Israeli labour market have been the major source of unemployment in the West Bank during this period, since a large portion of the unemployed were previously working in Israel and the settlements (PCBS, 2005). On the eve of the Intifada in 1999, 26% of total West Bank workers were employed in Israel and the settlements, but this rate declined to 13% by 2002 (PCBS, 2010). Since 2002, this number has slightly increased again: in 2009, 14% were working in Israel and the settlements. Due to the high growth of the labour force, even this slight increase implies significant effects in the West Bank. A report by the Palestinian Ministry of Finance states that the number of Palestinians employed in Israel increased by 20% from 2007 to 2008, which led to a significant increase in national income and demand (Palestinian Ministry of Finance, 2009).

Irrespective of their skill level, Palestinians are mainly employed in unskilled or low skilled jobs in Israel, predominantly in agriculture and construction. Nevertheless, the wages

Palestinians can receive in Israel are at least 60% higher than the average wage in the West Bank (Bank of Israel, 2010a; PCBS, 2010). Compared to neighbouring countries, the wage level in the West Bank is relatively high (Aix-Group, 2007), which may be mainly due to the possibility of employment in Israel, which raises the reservation wage (Bulmer, 2003). The reservation wage is the wage below which people would prefer waiting to get a job in Israel rather than working in the West Bank.

## **2.2 The Israeli labour market**

During the second Intifada, the Israeli economy struggled with security and political uncertainty which resulted in stagnating domestic demand. Unemployment rates increased and peaked in 2003 at 10.6%. However, since 2003 the Israeli economy is fast growing, with increasing employment rates and wages. In 2006 the Bank of Israel announced a situation of full employment in Israel with the lowest unemployment rate since two decades of 6.1% and the highest level of labour force participation in history of 56.5%. (Bank of Israel, 2010a). Nevertheless, the unemployment rate began to slightly increase in 2009. Industries that intensively employ low skilled labour were main contributors to this increase in unemployment. Increasing unemployment of unskilled labour has been observed for several years.

## **2.3 Palestinian cross border workers and foreign workers in Israel**

Israeli low and unskilled workers have to compete for jobs with foreign and Palestinian workers who are willing to work for lower wages. In Israel there is a minimum wage imposed and Israelis usually are not willing to work below that minimum wage (OECD, 2010). Weak enforcement of the minimum wage law makes it possible to employ foreign and Palestinian workers below that minimum wage (Bank of Israel, 2010b; OECD, 2010). The wage which Palestinians can receive in Israel differs by source (Table 1).

The wages for 2005 range from 127 NIS per day published by the Palestinian Central Bureau of Statistics up to the level of the minimum wage of 160 NIS per day. Even when calculating with the lowest wage rate, this wage rate is 70% higher than the wage Palestinian workers would earn on average in the West Bank. If the minimum wage were applied to Palestinian workers, the wages they would receive in Israel would be more than double wages in the West Bank. On the other hand, the wage rate foreigners (non-Palestinians) receive is on average higher than that for Palestinians (OECD, 2010c). Moreover, Palestinian workers are

subject to lower social contributions and fees than foreign workers, but employers in Israel pay for transportation costs of Palestinian workers.

**Table 1: Different reporting on wages for Palestinian workers in Israel, 2005**

Minimum wage in Israel	Wages according to OECD publications <sup>a</sup>	Wages according to PCBS and Bank of Israel publications	Average wage in West Bank (WB) (PCBS)
20 NIS/hour <sup>d</sup>	18 NIS/hour <sup>a</sup>	16 NIS/hour <sup>d</sup>	9 NIS/hour <sup>d</sup>
160 NIS/day	144 NIS/day <sup>d</sup>	127 NIS/day	74 NIS/day
3335 NIS/month	-	2772 NIS/month <sup>b</sup>	1739 NIS/month <sup>c</sup>

<sup>a</sup> Association of Contractors and Builders in Israel (2009) as cited in OECD (2010c).<sup>b</sup> calculated with 22 days. <sup>c</sup> calculated with 23.6 days in WB. <sup>d</sup> calculated with 8 working hours per day.

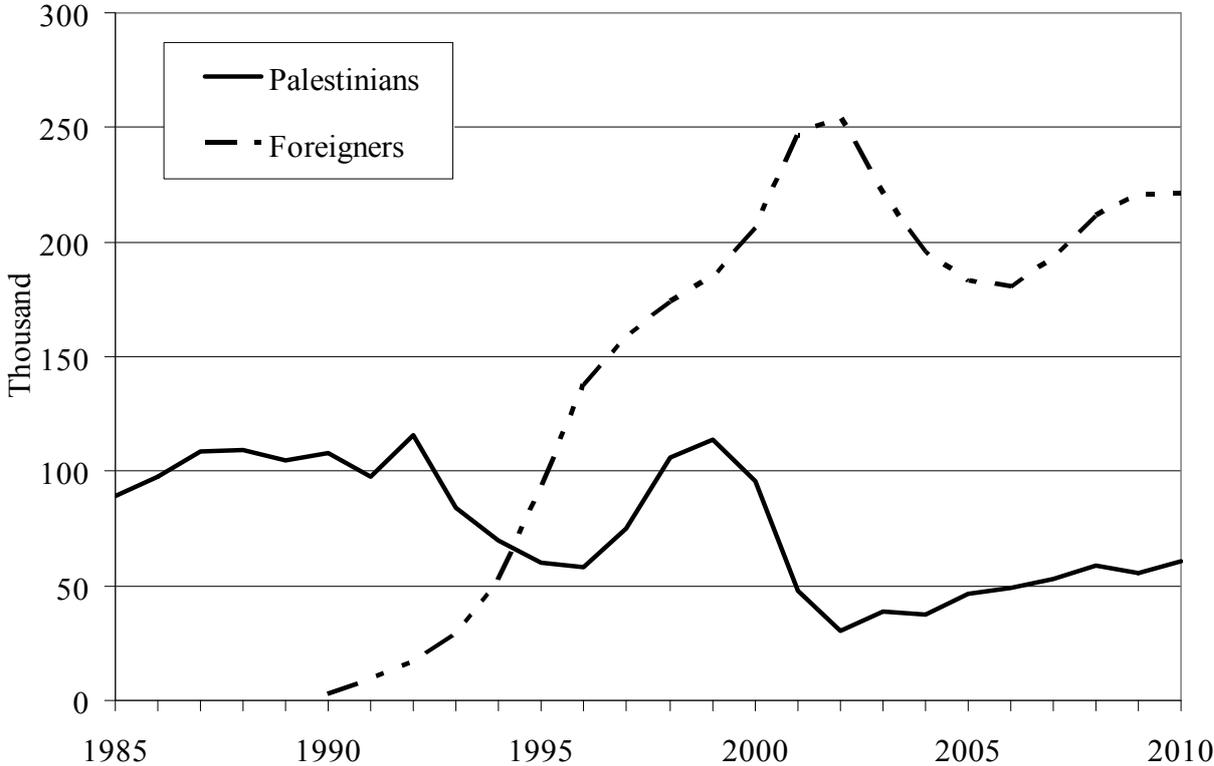
Sources: OECD (2010c), PCBS (2011), Bank of Israel (2010a).

As shown in Figure 2, for decades a high number of Palestinians used to work in Israel. The number decreased with intensifying tensions in the early 1990s, but recovered after the first election of the Palestinian Authority in 1995. The steep decline that begins in 2000 marks the outbreak of the second Intifada in which the number of workers coming from the Gaza Strip fully ceased. Since 2003 there is a slight increase, but the number of Palestinian workers barely reaches the low level in 1995. Furthermore a high number of these Palestinian cross-border workers is working illegally in Israel. The Workers Advice Center (2004), an independent Israeli workers Organisation, estimates in 2004 about 70% of Palestinian cross-border workers working without valid permit.

There are three Israeli sectors which are highly dependent on non-Israeli workers, namely agriculture, construction, and homecare. In 2008, 30% of all employees in construction and 37% of all employees in agriculture were non-Israeli (Bank of Israel, 2009). Non-Israelis are employed in these sectors partly because their wages are low and partly because employers cannot find Israelis who are willing to work in these jobs.

Since 1993 the labour flow of Palestinians to Israel became irregular due to gradually increasing access restrictions. Reasons for the increased restrictions were security concerns, not economic ones. Changing security procedures increased uncertainty of whether the workers would be able to reach their workplace, even for those holding permits. This situation affected both employers and employees negatively (Aix-Group, 2007).

**Figure 2: Palestinian and foreign workers in Israel (in thousand, 1985-2010)**



Source: Own compilation based on Bank of Israel (2011)

The increased access restrictions led employers to successfully lobby for workers from abroad. Since 1990 workers from abroad are allowed to work in Israel. These are mainly Asian workers who receive working permits which they have to renew every three months. During the first 10 years, the number of foreign workers in Israel increased strongly and continued to increase during the second Intifada. At the same time, the number of issued permits remained almost constant since 1995 with approximately 60 thousand permits released annually (Bank of Israel, 2008; OECD, 2010) and with quotas on foreign labour in agriculture and construction. The increasing number of foreigners which can be observed is therefore mainly caused by illegal workers (people who stay in Israel after their working permit ended). The decline of foreign workers in 2003 was caused by a period of stricter enforcement of return as well as an economic recession in the Israeli economy. In recent years the number of foreign workers in Israel has been rising again.

## **3 Analytical Framework and Data**

### **3.1 Main features of the STAGE model**

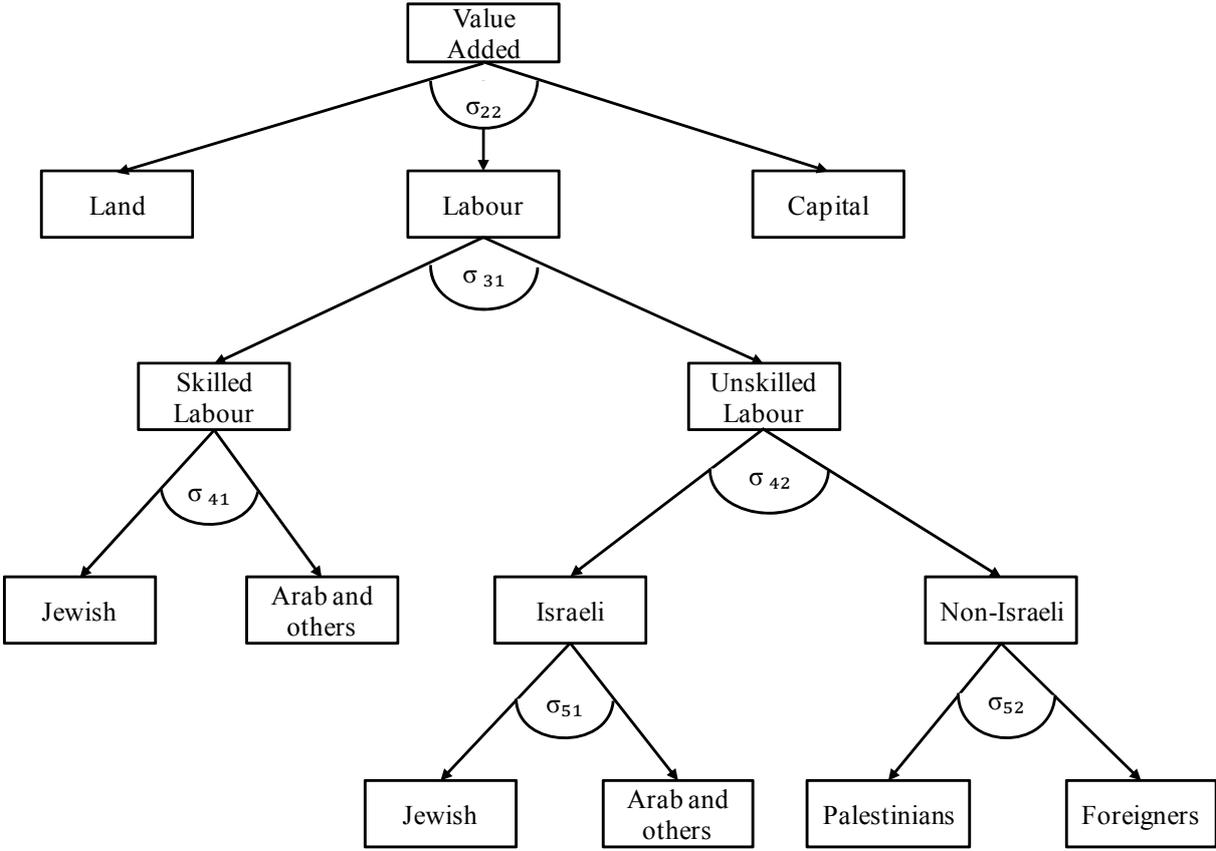
This study uses the single country Computable General Equilibrium (CGE) model STAGE (McDonald, 2009). In the STAGE model, production technologies can be specified as nested Constant Elasticity of Substitution (CES), which is the main feature for the purpose of this study. STAGE is calibrated using an Israeli Social Accounting Matrix (SAM) for the year 2004.

### **3.2 Modelling of the labour market**

#### **3.2.1 Labour demand**

Domestic production of the model is extended to use a five-level production process. Each level involves CES or Leontief aggregations of primary or aggregated inputs to produce aggregates. Using CES technology allows for the assumption of imperfect substitution in factor demand between specific factor groups. The optimal combination of primary inputs is determined by relative factor prices and the substitutability determined by the specific CES elasticities. In the first level of the production nesting, aggregate intermediate input and aggregate value added are combined to form domestic output in fixed shares. Aggregate intermediate input is a Leontief aggregation of intermediate inputs, while aggregate value added is a combination of primary inputs using CES technologies. The inputs forming aggregate value added are capital, land, and aggregate labour, with the substitution elasticity  $\sigma_{22}$  determining the substitution possibilities among them (Figure 3).

**Figure 3: Labour nesting**



Source: own compilation.

Aggregate labour differentiates in the third level between unskilled and skilled labour. In the fourth level, first, skilled labour is composed of Jewish and Arab (and others) Israeli skilled labour groups, which are imperfect substitutes. This is because there is broad recognition that in Israel ethnicity affects employment, which is partly due to service in the Israeli Defence Forces (IDF) (OECD, 2010a, b). While Jewish Israelis (with the exemption of the religious Haredim) serve for two to three years in the army, Arabs generally do not serve in the army. Accordingly, those who did serve in the IDF are supported with privileges in the labour market. This discriminates against those who did not serve. Nevertheless, it is common for countries to reward people who served in the army. In Israel, however, some minority groups do not serve and thus such supporting practices affect one population group more than the other (OECD, 2010c). Second, unskilled labour is composed of Israeli unskilled labour groups and non-Israelis. Non-Israelis mostly work in unskilled jobs in Israel, regardless of their skill-level (PCBS, 2005).

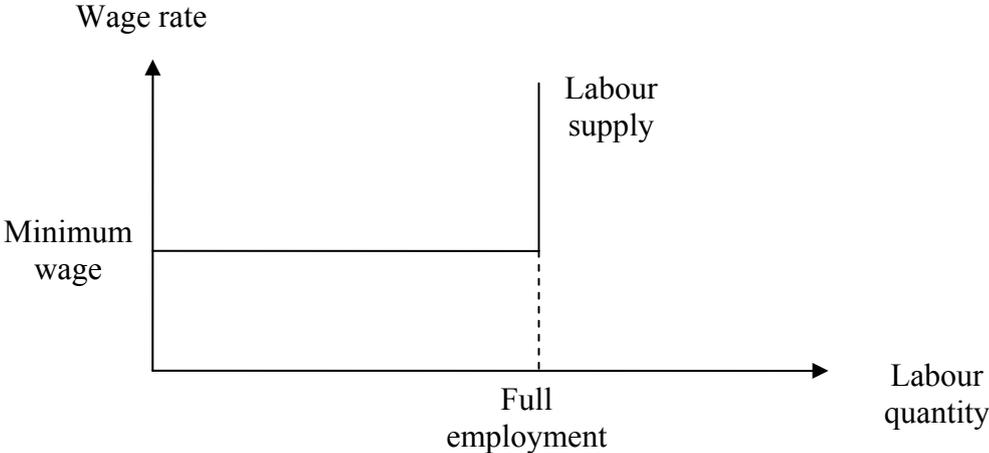
The fifth level consists of the unskilled branch of the labour nest. The Israeli unskilled labour group is a composite of Jewish and Arab (and others) labour groups. Non-Israelis are distinguished between Palestinians and workers from the rest of the world.

**3.2.2 Depicting the minimum wage**

The STAGE model allows for depicting a minimum wage and unemployment for each primary factor. The model is specified as mixed complementary problem (MCP) which allows for switching of regimes (Figure 4). If the level of the wage rate of a primary factor is above the minimum wage rate the factor is assumed to be fully employed, thus the quantity of labour is fixed. At the same time the wage rate is flexible. If the wage rate falls to the level of the minimum wage rate the regime changes. The wage rate is now fixed at the minimum wage level and the labour market adjusts by reducing labour quantities and thus creating unemployment. This process operates the other way round, too. Starting with a situation of unemployment, increasing demand for labour first absorbs unemployment and later switches the regime to fixed labour quantities and a variable wage rate when full employment is reached. The regime shift is possible for each factor separately.

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**Figure 4: The labour supply function**



Source: own compilation.

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In the basic situation the Israeli labour groups are situated on the vertical part of the labour supply function, hence their wage rates are above the minimum wage of monthly 3335 NIS and full employment is assumed. Exemptions are the groups of female agricultural skilled workers, both Jewish and Arab, and Palestinian workers. The wage rates of these labour groups are below the minimum wage in the base data. Their wage rates are not allowed to

decline further and they are thus assumed to be situated in the bend of the labour supply function.

### **3.3 The database**

#### **3.3.1 The Israeli SAM**

The Israeli 2004 SAM used in this study is compiled by the Agricultural and Food Policy Group at the University of Hohenheim, documented in Siddig et al. (2011), and characterised by several distinctive features. First, the SAM differentiates between activities and commodities. Second, the SAM provides detailed data on trade and transportation margins. Third, the government account is separated from the detailed tax account. Fourth, the SAM provides detailed data on factors of production and households as it distinguishes between 10 household groups. Furthermore, labour is disaggregated into 36 subaccounts that differ according to profession and ethnicity. The SAM contains data on seven skilled professions in different occupations in addition to unskilled labour groups. In terms of ethnic differentiation, it distinguishes between Jews and non-Jews, which include female and male labour groups. Additionally, there are four non-Israeli labour groups incorporated in the SAM, representing legal and illegal Palestinian cross-border workers and foreign workers from the rest of the world.

The sources of the data used to compile the SAM include the Israeli Central Bureau of Statistics (ICBS), the Central Bank of Israel (BOI), and the Israeli Tax Authority (ITA). In addition, data from sources outside of Israel are used to fill-in some gaps from the domestic reports. External sources include the World Trade Organization (WTO), the Organisation for Economic Co-operation and Development (OECD), and the World Bank.

#### **3.3.2 Additional databases**

There are two additional data sets used for this analysis. The first is a matrix of quantities of primary inputs, which is needed because the SAM contains information on values only. Finally, a series of elasticity values completes the database, including elasticities of substitution of imports and exports related to domestic commodities, elasticities of substitution for the CES functions in the production nest, income elasticities of demand as well as Frisch parameters for each household group for the specification of a CES demand system.

## **4 Policy scenarios and results**

### **4.1 Policy scenarios**

Two scenarios are run to estimate the effects of reducing the number of foreign and Palestinian workers in Israel.

For both scenarios the labour market closures are modelled as stated in chapter 3.2: The Israeli labour market for skilled and unskilled labour has full employment and adjusts by variation of the wage rate, keeping as lower border the minimum wage rate. The scenarios are defined by varying factor supply for the respective non-Israeli labour groups.

#### **4.1.1 Base Scenario:**

First, a base scenario is run, replicating the 2004 Social Accounting Matrix and thus reflecting a restrictive border policy against Palestinians. Furthermore, quotas on foreign workers are in place, hence only a limited number of foreigners and Palestinians are allowed to work in Israel. Besides workers with an official permit, workers from Palestine and the rest of the world who are working illegally in Israel are taken into account.

#### **4.1.2 Enforcing law scenario**

Second a scenario is run in which the Israeli government enforces its labour laws by expelling all illegal Palestinian workers and illegal workers from the rest of the world. Therefore only non-Israeli workers which hold a working permit are still working in Israel. Approximately half of the 188 thousand workers from the rest of the world are working without a permit in Israel. The number of workers from Palestine is reduced by two thirds; only 16 thousand out of 50 thousand Palestinian cross-border workers are holding a working permit for Israel.

## **4.2 Results**

This section presents and analyses the changes under the scenario of enforcing the Israeli labour law as percentage deviations from the base scenario. Effects on the Israeli economy are presented first. Afterwards, potential effects on the West Bank economy are discussed.

### **4.2.1 Effects on the Israeli economy**

When only allowing for workers which work with valid permit the number of foreign workers from the rest of the world decreases by 50% and the number of Palestinian workers decreases

by 67%. This policy in effect decreases the total number of unskilled labour supply in Israel by 29%.

Decreased non-Israeli labour supply in Israel changes the relative availability of factors and thus directly affects returns to factors. As displayed in Table 2, the average wage rate of labour increases slightly by 0.6% while capital and land become relatively abundant, resulting in decreasing returns. The effect is particularly strong for land because land is used in the agricultural sectors, which are mainly employing unskilled labour and are therefore strongly affected by the change in unskilled labour supply (Table 4).

**Table 2 Effects of the enforcing law-scenario on the wage rates of different factor groups**

Factors and aggregate factors	Wage rate changes in %
Capital	-1.405
Land	-4.109
Labour	0.633
Israeli unskilled female Jewish labour	11.413
Israeli unskilled female Arab labour	11.991
Israeli unskilled male Jewish labour	12.020
Israeli unskilled male Arab labour	13.288
Palestinian labour	49.001
Foreign labour from the rest of the world	37.833

Palestinian labour and workers from the rest of the world are employed in unskilled jobs in Israel. The 29 % decrease in quantity of unskilled labour makes unskilled labour relatively scarce, causing wages of unskilled Israeli labour groups to increase between 11,4% and 13,3%. The non-Israeli labour groups experience an increase in wages by 49.0% for Palestinians and 37.8% for other foreigners. Thus non-Israeli labour groups show a stronger increase in wages. When recalling, that especially Palestinians start from a lower level, this different growth rates lead to more convergence. When assuming the wage level in the base scenario at the level published by the PCBS (see Table 1) it is noticeable, that in enforcing the law in respect to the quantity of labour the wage rate of Palestinians increases above the minimum wage of approximately 40 thousand NIS per year. Thus the law in respect to the minimum wage is enforced, too.

As shown in Table 3, Israeli GDP declines by 1.3%. Foreign workers generally spent only a small amount of money in their host country. According to Israeli farmers, wages of foreign workers are regularly transferred direct on bank accounts in the home countries of their

workers. Palestinians use to work in Israel on a day to day basis, what implies that they, too, do spend their income not in Israel but in the West Bank. Therefore the employment of non-Israeli workers implies an export of capital for Israel. Decreasing the employment of non-Israelis therefore decreases these capital exports. Thus, the exchange rate appreciates to absorb this increase in the current account. This appreciation decreases the competitiveness of exports. Producer prices in Israel increase slightly by 0.2%. Higher producer prices and lower income lead to decreased import demand, despite the appreciation of the exchange rate.

**Table 3 Macroeconomic effects of the enforcing law-scenario in Israel, selected variables**

Variables	Change in %
Gross domestic product (GDPVA)	-1.305
Exchange rate	-0.208
Producer price index (PPI)	0.217
Imports	-1.812
Exports	-3.362

Table 4 presents sectoral effects on prices, domestic production and exports as well as shares of unskilled labour in the total labour input per sector. Output prices are determined by the price of value added, prices for intermediate inputs and export prices, while purchaser prices are determined by producer prices and import prices. Therefore purchaser prices deviate from output prices. Since Israel is a small country, world market prices are not affected by changes in the Israeli market. Thus, for wheat, for example, 74% of total Israeli demand for wheat is imported; hence the purchaser price is largely influenced by the world market price and thus changes only slightly compared to the relative strong increase in the output price.

Regarding the impact on different sectors of the economy, three groups of sectors can be distinguished. First, for sectors in which the share of unskilled labour in the total labour is high, higher wages for unskilled labour increase input costs and result in increasing composite prices of output (PX). Agricultural sectors such as wheat, other crops (except cereals), milk and vegetables-fruit production as well as construction are main employers of unskilled labour. These sectors therefore, show a relatively high increase in output prices (PX) between 0.9% and 1.5%. This increase can be observed in purchaser prices, too, with exemption of wheat, which is mainly imported and its purchaser price therefore mainly affected by the import price. Production quantities are declining in all sectors of this group. This decline is on the one hand caused by the lower competitiveness of exports and therefore strong in the sector other crops, which exports around 30% of its production. On the other hand the quantities

produced are affected by declining domestic consumption (Table 5 (QCD)). This decline in domestic consumption is relatively small because demand for agricultural goods as well as construction is assumed inelastic with respect to prices and income, but consumers substitute domestic produced goods with imports, which are increasing for agricultural goods.

**Table 4 Effects of the enforcing law-scenario on production and unskilled labour input, selected sectors**

Sectors	Change in %				Share of unskilled labour in total labour input (%)			
	Price of output (PX)	Purchaser price (PQD)	Domestic production (QX)	Exports (QE)	Israeli unskilled	Palestinian	Foreign	Total unskilled
Wheat	1.12	0.18	-2.34	-4.94	10.3	3.4	24.0	37.7
Other crops	1.27	1.30	-5.30	-8.05	9.9	3.8	27.1	40.7
Milk	1.14	1.17	-0.99	-3.60	10.0	2.8	19.5	32.3
Vegetables and fruits	0.91	1.13	-1.21	-3.41	9.9	3.8	27.1	40.7
Electronic equipment	0.04	0.06	-4.77	-5.15	7.1	2.7	0.6	10.3
Manufactures (nec.)	-0.03	0.08	-8.22	-8.39	6.9	1.9	0.4	9.2
Construction	1.51	1.53	-0.32	-3.70	4.4	9.2	26.7	40.3
Communication	-0.44	-0.44	-1.38	-0.91	4.1	0.6	0	4.7
Public services	-0.15	-0.16	-0.79	-0.90	4.9	0.6	3.7	9.2

Second, electronic equipment and manufactures (not else classified, nec.) represent the industrial sector. The share of unskilled labour in these sectors is around 10% or less. The price of output (PX) is slightly increasing for one sector and slightly decreasing in the other, caused by increased costs for labour and intermediate goods and simultaneously decreased costs for capital. The price changes are much smaller compared to the agricultural and construction sectors. However, the sectors experience a strong decline in production quantities, because of the drop in export competitiveness.

The third group of sectors, which employ little unskilled and especially non-Israeli labour, consists mostly of service sectors and is represented by the communication and the public services sectors in Table 4. The selected sectors experience slightly decreased returns to input factors, resulting in declining input costs. At the same time the quantity produced also decreases, driven by decreasing domestic and export demand. The decrease in the domestic demand in Israel is driven by the lower income of Israeli households.

Regarding effects on different household groups (Table 5), income of Jewish household groups declines more than income of Arab and other (henceforth, Arab) household groups; income of high income quintiles declines more than income of low quintiles. This is due to

the different ownership of factors: Arab households hold a larger share in unskilled labour, which is experiencing an increase in wages, than Israeli households and higher income groups own more skilled labour and capital than lower quintiles. The lowest quintiles show a higher decrease (Jews) or lower increase (Arabs) in income than the second and the third quintiles. This is because their income is composed of a higher share of transfers, which decrease, and less unskilled labour. Household income is not only composed of income from factors but also contains transfers from government, enterprises, other households and from the rest of the world. Transfer payments decrease, because income to government, enterprises and aggregated households decreases, leading to decreasing transfer spending of these institutions. Despite the positive impact on the income of some household groups, the equivalent variation (EV), expressed in percentage of income, is negative for all household groups. Hence, negative EVs imply that all household groups reach a higher utility level under the base scenario before enforcing the labour laws.

This effect is also reflected in the quantity of household consumption by commodity (QCD). While prices for some goods decrease and prices for others increase, the change in the quantity of household consumption is negative for all goods and household groups. While all households are negatively affected as indicated by the negative EV changes, households of higher income have to bear a higher decline in income and utility compared to households in the lower quintiles.

**Table 5 Effects of the enforcing law-scenario on household welfare**

	Household income (in %)	Equivalent variation (EV) in % of income	Household consumption by commodity (QCD) (change in %)								
			Other crops	Milk	Vegetable and fruits	Electron. equip.	Manu-factures (nec.)	Construc-tion	Water transport	Commu-nication	Public services
hj1	-0.249	-0.50	-0.224	-0.325	-0.321	-0.618	-0.778	-0.473	-0.695	-0.784	-0.224
hj2	-0.013	-0.39	-0.151	-0.241	-0.238	-0.517	-0.652	-0.428	-0.551	-0.644	-0.151
hj3	-0.159	-0.70	-0.166	-0.322	-0.319	-0.974	-1.224	-0.694	-1.142	-1.255	-0.166
hj4	-0.411	-0.87	-0.105	-0.306	-0.303	-1.246	-1.566	-0.878	-1.472	-1.611	-0.105
hj5	-0.720	-1.14	-0.098	-0.378	-0.374	-2.014	-2.540	-1.679	-2.133	-2.500	-0.098
hao1	0.111	-0.17	-0.129	-0.182	-0.179	-0.234	-0.298	-0.284	-0.164	-0.255	-0.129
hao2	0.196	-0.21	-0.111	-0.175	-0.172	-0.303	-0.384	-0.322	-0.255	-0.348	-0.111
hao3	0.133	-0.55	-0.144	-0.279	-0.276	-0.799	-1.006	-0.609	-0.901	-1.015	-0.144
hao4	0.003	-0.56	-0.079	-0.228	-0.226	-0.829	-1.045	-0.673	-0.895	-1.036	-0.079
hao5	-0.373	-0.92	-0.088	-0.335	-0.331	-1.667	-2.105	-1.508	-1.653	-2.021	-0.088

**Israeli household groups:**

hj1	Jewish households in first income quintile
hj2	Jewish households in second income quintile
hj3	Jewish households in third income quintile
hj4	Jewish households in fourth income quintile
hj5	Jewish households in fifth income quintile
hao1	Arabic and other households in first income quintile
hao2	Arabic and other households in second income quintile
hao3	Arabic and other households in third income quintile
hao4	Arabic and other households in fourth income quintile
Hao5	Arabic and other households in fifth income quintile

#### 4.2.2 Effects on the West Bank economy

Cross-border workers from the West Bank who work in Israel experience a substantial increase in wages of 49.0%, however, the substantial decline in the number of workers results in a decrease in overall labour income of Palestinians working in Israel, from 1374.0 NIS million in the base scenario to 662.9 NIS million in the scenario of enforcing the law (Table 6). Therefore the West Bank economy as a whole suffers from the drop in income. In the base scenario, remittances of Palestinian cross-border workers from Israel account for 13.8% of 2004 West Bank GDP. In relation to the West Bank's GDP of the year 2010 of 16 355.8 NIS Million (in constant 2004 prices) remittances still account for 8.4%, indicating the relevance of worker remittances for the economy. When Israel enforces its labour law, the income from remittances is cut by half. Additionally the West Bank experiences a strong increase in unemployment as two thirds of the 50 thousand previously in Israel employed workers loose access to their working place. The number of workers losing their work in Israel account for 8.6% of total West Bank employees. Thus the simulated policy decreases the income accruing to the West Bank and simultaneously increases unemployment in the West Bank.

**Table 6 Palestinian workers remittances from Israel and West Bank GDP (2004)**

	Base Scenario	Enforcing Law Scenario
Workers remittances from Israel	1374.0 NIS Million	662.9 NIS Million
West Bank GDP	Share of remittances in the GDP	
9899.1 NIS Million	13.8%	6.7%

Source: PCBS, 2011; own compilation

Large revenues from worker remittances can cause negative effects on the economy, resulting in an appreciation of the real exchange rate, a paradox known as Dutch disease. In this regard, less Palestinians employed in Israel could imply a chance for the Palestinian economy to enhance growth. Nevertheless, a study by Astrup and Dessus (2005) found that increased export competitiveness for the Palestinian territories was insufficient to compensate for the losses of income after closure of the Israeli labour market, indicating that cross-border employment is an important contributor to the living standard in the Palestinian territories.

### 4.2.3 Testing for the sensitivity of the results to the level of the substitution elasticities

#### $\sigma_{42}$ and $\sigma_{52}$

To build confidence in the results of the employed model and particularly in the substitution elasticities used in the labour market equations, several sensitivity analyses are run. These analyses show that one of the elasticities has an especially strong influence on the results, namely the substitution elasticity between Israeli and non-Israeli unskilled workers ( $\sigma_{42}$ , Figure 4).

Increasing the substitution elasticity between Israeli and non-Israeli unskilled workers ( $\sigma_{42}$ ) decreases negative effects on Israelis. Assuming the elasticity is 8 instead of 4, reduces the negative equivalent variation and even turn it positive for the two poorest Arab quintiles, however with small values of 0.023 (hao1) and 0.005 (hao2) respectively. Increasing the substitutability of Israeli unskilled workers and non-Israeli workers mitigates the negative effects on the economy, GDP decreases by 1.2% instead of 1.3%. The substitution elasticity between Israeli and non-Israeli unskilled workers is likely to vary with the political situation. It describes the extend of the reluctance of employers to employ non-Israelis and in particular Palestinians. In case of strong conflicts, this reluctance is expected to be higher than in more peaceful situations.

## 5 Conclusions and outlook

In this paper we examine the potential effects of enforcing Israeli labour law and expelling illegal workers from the country. For this purpose we simulate a scenario which decreases the number of Palestinian cross-border workers by 67% and halves the number of foreign workers from the rest of the world.

The results indicate that decreasing the number of non-Israeli workers would decrease domestic production and harm economic growth in Israel. Considering the effects on household groups, decreasing the number of non-Israelis would increase income to poor Arab households, which own relatively much unskilled labour. However, the positive effect of increasing factor income from unskilled labour is smaller than negative effects accruing to all household groups from increasing prices and decreasing transfer income, resulting in welfare losses for all household groups in Israel.

The West Bank economy would loose as labour income of Palestinians in Israel would strongly decline. Nevertheless, such an inflow of money in the West Bank from employment abroad could also have negative effects on the Palestinian economy. Thus the decline of

remittances could bear chances for the West Bank economy. Previous studies have found no positive effect of declining labour income from Israel on the West Bank, but further research is needed to analyse the effects of these income flows on the Palestinian economy. We therefore envisage to endogenize Palestinian labour supply in a first step and to combine the CGE model for Israel with a CGE model for the West Bank in a second step. Further we intend to improve the empirical base of labour substitution elasticities applied.

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