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# Trade policy in a sovereign Palestinian State: What are the options in a final settlement?

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## Abstract

This paper quantifies the economy-wide effects of different trade policies on the Palestinian economy, using a detailed database and a general equilibrium model adjusted to the particularities of the Palestinian economy. The findings show that a liberal and non-discriminatory trade regime provides the highest benefits for the Palestinian economy, in terms of welfare effects, GDP growth and job creation. The choice of an exchange rate regime has a considerable influence on the effects of trade policy. Accordingly, a full control over trade and monetary policy instruments could improve the capacity of the Palestinian National Authority to address the prevailing high unemployment and sluggish economic growth.

## KEYWORDS

applied General Equilibrium, exchange rates, Middle East, Palestine, tariff-rate-quotas, unemployment

## 1 | INTRODUCTION

Economic development and trade performance in Palestine are strongly affected by the unusual links with Israel. After years of occupation and sluggish economic growth, the Oslo Accords and Paris Protocol were expected to achieve a rapid growth of the Palestinian economy and healthier

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economic relations with Israel (Momani, 2007). However, the power asymmetry between the two parties and the incomplete implementation of the Protocol provisions led to a low economic and trade performance in Palestine (Missaglia & Valensisi, 2014). Both economic and security conditions call for negotiations on a final status. The 2020 Peace Plan and the Abraham Accords between Israel and Arab nations in the Middle East sought to improve economic cooperation between the signing parties but completely disregarded the Palestinian issue (Bayrak, 2021). There is a wide consensus that long-term economic prosperity and political stability in the region cannot be achieved without getting to the root of the problem and ensuring direct dialogue between Israel and Palestine. Along with the United Nations (UN)-backed 'two-state solution', the envisaged Palestinian State must possess in a final solution these four characteristics: (i) a territory with unambiguous borders, (ii) an authority with control over policy; (iii) a population and (iv) recognition by the international community. While the State of Palestine is recognised by most UN members, the Palestinian National Authority (PNA)'s ability to govern is so far limited, and both the Palestinian territory and population remain fragmented (Baroud, 2021). Assuming the characteristics of a sovereign state will to a large extent be present in a final solution, this paper provides an assessment of the impact of different trade policies and exchange rate regimes for a future Palestinian State, using a general equilibrium model.

The assessment of different trade options in a future Palestinian state has mostly been addressed in the existing literature with descriptive analyses. Arnon and Bamyra (2007), and Vaggi and Baroud (2005) recommended a free trade agreement between Palestine and Israel, on the premise that clear borders are needed between the two economies but Palestine would benefit from free access to the Israeli market. Another group of studies (e.g. Abed, 1996; Kanafani, 1996) favoured a better implementation of the customs union with Israel, arguing that the absence of customs borders, and a proper working customs union with Israel would secure a smoother flow of the Palestinian trade. A third group of studies (e.g. Fischer et al., 2001) suggested that the future Palestinian economy should adopt a liberal and non-discriminatory trade regime.

Besides these descriptive studies, a few estimates of the impact of different trade regimes have been produced for Palestine using a cost-benefit analysis (e.g. Schiff, 2002) or a macro-econometric model (e.g. UNCTAD, 2009). However, these methods are unable to capture the economy-wide effects of policy changes based on a micro-optimisation approach of the kind that is found in a computable general equilibrium (CGE) model. The first CGE model to address the question of trade policy changes in Palestine was developed by Astrup and Dessus (2001, 2005) and was later extended by Missaglia and Valensisi (2014). However, this model did not incorporate detailed information on the Palestinian economy and had some rigidities, such as the imbedded assumption of the economy being at full employment, which sits at odds with the observed level of unemployment in Palestine.

Most of previous studies also ignored the physical and economic separation of Gaza from the West Bank. The economies of the two territories exhibit different patterns (IMF, 2016). Moreover, since the blockade of Gaza in 2007, the economic relations between Israel and the Palestinian National Authority (PNA) are limited to the West Bank (UNCTAD, 2015). To reflect the current economic reality, this paper focuses exclusively on the West Bank<sup>1</sup>. The paper examines the effects of two alternative trade regimes on the West Bank economy, as compared to the current customs union with Israel. Such trade policies will affect differently the production sectors in the West Bank and will have whole economy implications; hence, the paper uses a CGE model (STAGE) that is modified to accommodate the specificities of the West Bank economy. First, the

<sup>1</sup>In the remaining of the paper, West Bank and Palestine are used interchangeably.

modified model incorporates a multi-trade partner specification that depicts Palestine's membership in various trade agreements. Second, regions accounting for small shares of import/export of a commodity are treated differently from those representing large shares. This allows capturing the importance of Israel as the main trade partner of the West Bank, while assuring that regions with small shares will not have disproportionately large terms of trade effects due to the simulation of a policy shock. Third, the tariff-rate quota system applied in the West Bank has been embedded in the model. Finally, the composition of the labour force in the West Bank is captured in the model via an extended production module with a six-level nesting structure. The data used to calibrate the model are provided by a unique social accounting matrix (SAM) for the West Bank (Agbahey et al., 2016).

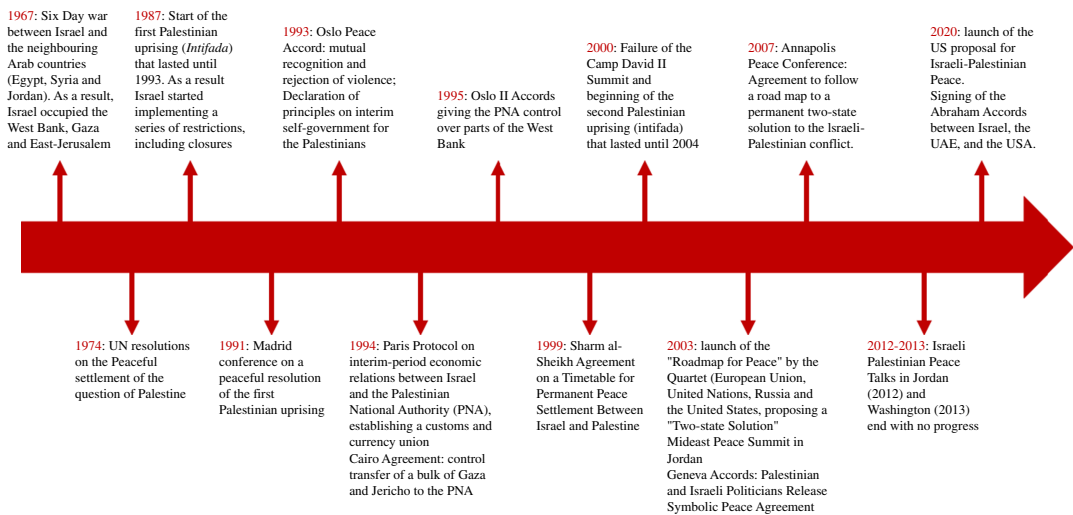
The next section, two, provides an overview of the current trade pattern in the West Bank. Section three starts with an overview of approaches to model trade flows and then presents the specifications of the model used as well as the features of the database that serves as benchmark for the model. Section four describes the policy options that are simulated. In section five, the key results are presented and discussed. Finally, section six draws conclusions.

## 2 | OVERVIEW OF TRADE CONDITIONS IN THE WEST BANK

In the aftermath of the 1967 war, also referred to as the Six-Day war, Israel implemented a partial economic integration with both the West Bank and Gaza, turning the two Palestinian territories to have largely open borders and tariff-free trade with Israel (Arnon, 2007). This economic integration was however imperfect due to administrative regulation, which was to a large extent non-transparent (Michaely, 2003). All decisions were made by Israel, and predominantly served the Israeli interests (Dessus, 2004). While Israeli products benefitted from a free access to the Palestinian markets, the Palestinian exports to Israel were subject to strict regulations (Botta, 2010). This situation contributed to the sluggish growth and trade performance of the Palestinian economy through the 1970s and 1980s.

Following the first Palestinian uprising, from 1987 to 1993, a political breakthrough was reached with the signing of the Oslo Agreements (see Figure 1 for a selection of major events and attempts to achieve a peaceful settlement of the Israeli-Palestinian conflict since 1967). As part of those agreements, the Paris Protocol was enacted in 1994 with the aim of providing healthier economic relations between Israel and Palestine (Roy, 2002). The protocol was initially intended to cover a transitory period of five years, after which the PNA would gradually be empowered with full control over trade and economic policies and eventually the provision of clear borders for a sovereign Palestinian state. However, more than two decades later, the Protocol still governs the Palestinian trade and economic relations. Against its vision to create favourable conditions for the development of the Palestinian economy, the protocol did not entail any structural break. Instead, it formalised the customs union prevailing between Israel and Palestine since 1972. While the protocol recognised that the two parties might have different interests, it only offered the Palestinians a limited policy space. The customs union was not bilaterally coordinated. The trade regime in Palestine continued to follow the Israeli rules and the PNA could only set tariffs on a few imported goods and within certain limits (Vaggi & Baroud, 2005).

The provisions of the Paris Protocol granted the PNA the possibility to enter into bilateral trade agreements with other countries. However, the implementation of the agreements signed by the PNA is hampered by the lack of Palestinian control over their external borders (World



**FIGURE 1** Timeline of selected events and attempts to achieve a peaceful settlement of the Israeli-Palestinian conflict [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

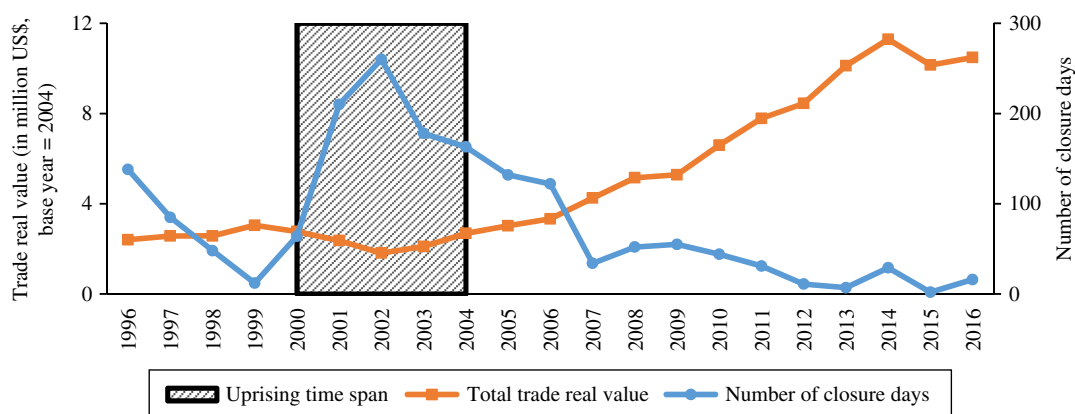
Bank, 2008). The working trade agreements in Palestine are those signed by Israel with other countries and which benefit Palestine because of being in a customs union with Israel. Most of these agreements involve tariff-rate-quotas. However, the quotas in Palestine are not determined by the PNA alone. They are rather negotiated with the Israeli Trade Authority. As of 2012, Palestinian quotas for imports from countries outside the customs union were set at 20% of the Israeli pledges (MAS, PCBS, & PMA, 2013).

The limited access of Palestine to global markets leads to trade diversion and a high dependence on Israel (Astrup & Dessus, 2005). In 2011, Israel accounted for 70% of total Palestinian imports and 86% of their exports (PCBS, 2012). As the value of imports was considerably larger than the value of exports, the Palestinian economy carried a large trade deficit of about 44% of the national GDP (PCBS, 2014). The trade deficit with Israel alone made up two-thirds of the total. A consequence of this unbalanced trade pattern is the transformation of the Palestinian economy into a captive market for the Israeli products (Naqib, 2003).

The Protocol also suffered from a selective application of its provisions (Elkhafif et al., 2014). Against the presupposed free movement of labour and goods, political and military realities imposed a different path. Following a series of attacks in 1993, Israel started implementing a closure policy, which consisted of roadblocks and curfews restricting the movement of goods, services and people between Israel and Palestine, between the West Bank and the Gaza Strip, and within the West Bank (Eltalla & Hens, 2009). Closures were declared on short notice and for different durations, hence disrupting Palestinian trade flows (Ihle & Rubin, 2013).

Figure 2 shows a negative correlation between the number of closure days per year and the volume of Palestinian trade valued at constant prices over time. While the Israeli closures are not the only factor affecting Palestinian trade, there is a statistically significant (at 1%) negative correlation ( $-0.70$ )<sup>2</sup> between the Palestinian total trade and the number of closure days.

<sup>2</sup>The Person correlation coefficient ( $r$ ) is  $-0.70$  and the  $p$ -value is  $4.68e-07$ .



**FIGURE 2** Evolution of Palestinian total trade (valued in 2014 million US\$) and the number of closure days, 1996–2016.

Source: B'Tselem - Israeli Information Center for Human Rights in the Occupied Territories, 2017; PCBS, 2017; UNCTAD, 2009 [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

While Israel is the main entry point for most Palestinian imports from the rest of the world, taxes collected by Israel on the Palestinian imports from other countries transiting via Israel are often not transferred to the PNA. This leads to significant fiscal losses to the PNA (Fjeldstad & al-Zagha, 2004). The Paris Protocol and subsequent attempts to achieve a permanent settlement of the conflict that would have provided for a sovereign Palestinian state also failed to provide the Palestinian Monetary Authority the power to issue an independent currency (see Figure 1). The absence of its own currency deprives the PNA of seigniorage revenues and eliminates the option to use monetary policies to respond to specific economic needs (IMF, 2013).

In addition to Israeli policies and to the asymmetric relationships embedded in the Paris Protocol, the PNA also played a role in the deterioration of the economic environment in Palestine. The establishment of import monopolies, and the failure to establish an appropriate legal and regulatory framework environment to attract investments exacerbated the sluggish economic conditions (Roy, 2001).

In conclusion, the determinants of the Palestinian low trade performance are multiple. The protocol on economic relations with Israel – projected to develop an export-oriented Palestinian economy – failed to bear the desired fruit (Astrup & Dessus, 2001). Under the current situation, the Protocol is outdated and no longer addresses the challenges faced by the Palestinian economy (UNCTAD, 2016). Recent attempts to achieve a permanent peace settlement have so far borne little fruit. Nevertheless, a final settlement with a more balanced agreement for long-term healthier economic relations between Israel and Palestine has the potential to substantially improve the situation. Among scholars and observers, there is a wide consensus that the economic integration with no internal border failed (Arnon & Weinblatt, 2001). Consequently, the final settlement needs to entail the creation of economic borders and to grant the Palestinians a control over trade and monetary policies (Malul et al., 2008). After exiting the customs union with Israel, the Palestinian authorities could choose among several trade options. Conceding that the choice of a future trade regime in Palestine would not be determined by economic criteria alone and that political choices will affect the range of possible options, this paper provides a quantitative assessment of the potential impact of different trade options from an economic perspective in order to inform the debate.



### 3 | METHOD

This study uses a new modelling framework and database to investigate the implications of different trade regimes for the West Bank's economy.

#### 3.1 | Overview of modelling trade

The modelling of trade comprises simulation and econometric models (Kepaptsoglou et al., 2010). Simulation models replicate the underlying structure of the economies, including the state of trade, production and consumption. These models respond to exogenous shocks and simulate their effects. Simulation models typically have a strong microeconomic foundation, depict changes in trade endogenously and derive welfare implications (Cardenete et al., 2012). Among simulation models, CGE models have been widely used to estimate the effects of trade agreements on trade and the economy as a whole (see Anderson, 2003; De Melo, 2015; and Devarajan et al., 2021 for selected CGE applications to trade policy). However, the parameterisation of CGE models is often challenged by the lack of estimated country/region specific elasticities (Bacchetta et al., 2012). Therefore, researchers often support their model findings and robustness by conducting sensitivity analyses.

Among econometric approaches to model trade, gravity models are the most popular. Baier & Standaert (2020) provide a review on gravity models from their onset, and Kepaptsoglou et al. (2010) present a review of the empirical literature based on gravity models. The theory of the gravity model refers to Newton's universal law of gravitation physics and likewise assumes that trade between two partners is proportional to their economic size and inversely related to distance from each other. This class of models has also been widely used to demonstrate trade flow effects of factors such as cultural ties, colonial history, exchange rate mechanisms, trade agreement membership, and international borders. Although empirical studies were consistent with the concept of the gravity model, the gravity equation has for long lacked theoretical foundation (Anderson & Wincoop, 2003). Improvements to the data and econometric techniques as well as theoretical innovations have substantially improved the theoretical underpinning as well as the analytical capacity of gravity models. However, several areas still need to be addressed, from explaining the growth of trade to developing a better understanding of trade costs (Baier & Standaert, 2020).

Although a gravity model could provide interesting insights with respect to the share of Israel in Palestinian trade due to their proximity, the economic size of Israel, the customs union, and historical ties between the two entities, a CGE analysis is chosen for this study as it allows to derive economy-wide, employment and welfare implications of the simulated policies for the West Bank economy.

#### 3.2 | Model description

The model used in this study is the static applied general equilibrium model STAGE-2. STAGE-2 is a single country CGE model programmed in the General Algebraic Modelling System (GAMS) software. The STAGE family of models is a member of the class of CGE models that are neoclassical in origin (McDonald & Thierfelder, 2013). The agents in the model optimise their utility

and profit subject to technology and factor supply constraints. They operate in economies subject to a variety of macroeconomic closures, for example, fixed exchange rates, government budget constraints, factor market clearing conditions and structural rigidities.

The behavioural relationships in this model are a mix of non-linear and linear relationships that govern how the model's agents respond to exogenous shocks. A Social Accounting Matrix (SAM) provides the database to which the model is calibrated. Domestic agents – producers, households, enterprises and government – consume composite aggregates of domestic and imported commodities based on a Constant Elasticity of Substitution (CES) formulation (Armington, 1969). The distribution of domestically produced commodities among domestic demand and exports is governed by relative prices on these markets, using Constant Elasticity of Transformation (CET) functions, which reflects imperfect product transformation (see Appendix 1 – supplementary material – for a detailed description of the model and visual representation of the model's nesting structure).

For this study, the STAGE-2 model has been extended to depict relevant features of the West Bank economy and its trade relations. First, a multiple trade partner specification is introduced in order to capture Palestine's membership in different preferential trade agreements. A diagrammatic representation of the trade nesting structure in the extended model is presented in Figure A1, while a detailed description of the set-up, including the algebraic statements is provided in section 3.3.1 of Appendix 1 on model documentation.

Second, regions accounting for small shares of import/export of a commodity are treated differently from those representing large shares. This treatment aims at avoiding regions with small shares to have disproportionately large terms of trade effects after the simulation of a policy shock. For this purpose, the treatment developed by McDonald and Thierfelder (2015) for a multi-country CGE model is adapted to a single-country model. On the import side, if a trade partner  $w$  accounts for more than 10% of the Palestinian import for a commodity  $c$ , then for that commodity, this trade partner falls in the sub-nest of large partners. If the import share of a trade partner is less than 10% of the total import of a commodity, that trade partner falls in the sub-nest of small partners for this specific commodity. In each sub-nest, the characteristics of the product are assumed to be closer, and hence a high substitution is allowed. From the sub-nests, two aggregates are generated. A lower substitution is assumed between the two aggregates, implying that import from a small trade share region can only substitute import from a large trade share region to a lesser extent. On the export side, a similar nesting structure is developed using CET functions. A detailed description of the model set-up in this regard, including the algebraic statements, is provided in section 3.3.2 of Appendix 1, while a visual representation of the related nesting structure is provided in Figure A1.

Third, this paper models the tariff-rate-quota (TRQ) system in place in Palestine (see Section 1). For this purpose, the mixed complementary problem used by van der Mensbrugghe et al. (2003) and Flaig et al. (2013) in the context of an economy with a single trade partner is adapted to the context of a multi-trade partner model. A detailed description of how the TRQ regime has been modelled in this study is provided in section 3.3.3 of Appendix 1.

The fourth model extension performed in this paper relates to the production module, which is extended to accommodate a six-level production process that reflects the composition of the labour force in the West Bank. Each level of the production process involves CES functions. A detailed description of the production module and related model extensions, including the algebraic statements is provided in section 3.3.7 of Appendix 1, while a visual representation of the production nesting structure is provided in Figure A2.



### 3.3 | Macroeconomic closures

The West Bank is a small player in international markets. Accordingly, West Bank importers and exporters have no influence on international prices in the model. The current account balance is fixed to avoid passing benefits and costs to the future. The foreign exchange market is cleared by a floating exchange rate and the consumer price index serves as numéraire. In the sensitivity analysis, two alternative exchange rate regimes are explored. In the first alternative, a currency peg is considered with a flexible current account balance – implying that Palestine has extensive access to foreign capital markets – and the producer price index serves as numéraire. In the second alternative, a currency peg is associated with a fixed current account balance – assuming that Palestine cannot finance the budget deficit with foreign borrowing – and the exchange rate serves as numéraire.

The remaining macroeconomic closures are such that savings are investment driven, the government consumes a fixed share of absorption and balances its account by a variable income tax. To keep the balance between savings and investments, household and enterprise savings rates vary equiproportionately. All factors are mobile across activities. Capital and land markets are assumed to be at full employment, and they adjust by variation of capital and land prices. By contrast, the labour market is modelled with unemployment to replicate the empirical evidence of a high unemployment rate in the West Bank. A regime switching formulation of the surplus labour assumption is used. As long as there is unemployed labour, the labour supply curve is perfectly elastic and the labour market adjusts by variation of the number of workers, while the real wages are fixed. Once the pool of unemployed labour is emptied, the labour supply curve becomes perfectly inelastic, and the labour market adjusts by variation of the real wages. This specification is likely to produce upper bounds estimates of welfare gains, absorption and GDP changes because the segment of the labour supply curve that is perfectly elastic assumes the opportunity cost of transferring labour across the production boundary (from unemployment to employment) to be zero (see Agbahey et al., 2020 for a discussion of labour market specifications). Despite this limitation, the surplus labour specification captures well the prevalent involuntary unemployment in the West Bank. It presumes that unemployed persons would take employment at current (real) wage rates, if employment opportunities were available, since evidence shows that many West Bank workers are ready to queue for jobs.

The macroeconomic closures are described in detail in section 3.4 of Appendix 1.

### 3.4 | Data

The database used is a Social Accounting Matrix (SAM) (Agbahey et al., 2016), which depicts the complex interactions between the Palestinian and Israeli economies. It focuses on the West Bank economy, which is currently the only Palestinian territory with official trade with Israel. The SAM comprises a total of 161 accounts, including seven foreign regions based on the major trade agreements in which Palestine is a member. These include the customs union with Israel, the preferential trade agreements with the EU-28, EFTA<sup>3</sup>, USA, Turkey, Jordan and the Greater Arab Free Trade Area (GAFTA). The other countries with the majority not having a specific trade agreement with Palestine are classified under the umbrella ‘rest of the world’.

<sup>3</sup>EU-28 refers to the 28 members of the European political and economic Union, while EFTA stands for the European Free Trade Association formed by Iceland, Liechtenstein, Norway, and Switzerland.



The SAM includes 34 tax accounts, among which are seven import tariffs and seven export taxes associated with each trade partner. This detailed disaggregation of trade partners and tax accounts allows for a thorough assessment of different trade options in the West Bank.

The SAM incorporates a multiple product activity setup, with 38 commodity groups produced by 28 activities. There are 30 representative household groups, 17 production factors and detailed data on trade and transport margins.

The data that support the findings of this study can be obtained from the authors upon request.

## 4 | POLICY SIMULATIONS

The analysis compares the outcomes of the current policy framework (the *status quo* represented by a base scenario that reflects the data in the SAM) to two different trade policy scenarios, all assuming the exit of Palestine from the customs union with Israel. Scenario 1 simulates the elimination of tariffs on imports from all trade partners (Israel as well as all third countries). It represents a non-discriminatory liberalisation of the West Bank external trade and is called *ND-Lib* scenario. Since agricultural and food products are sensitive commodities that are likely to remain protected, even in a liberalised trade regime, the current import quotas have been kept, while the in-quota tariff rates are removed. Later in the sensitivity analysis, a change in the size of the quotas is simulated to assess the effects of protecting the domestic agricultural and food sectors on the whole economy.

Scenario 2 introduces high tariffs on imports from Israel. It considers the West Bank to exit the customs union without forming any other trade agreement with Israel. Israel is treated like other trade partners without specific trade agreement and falls under the *MFN* trade regime. Scenario 2 is referred to as *MFN* scenario. The tariff structure with respect to the other trade partners is unchanged.

The two scenarios can be regarded as extreme and were chosen to reflect the range of effects a change in trade policy could have on the West Bank economy. Two other scenarios with moderate policy changes were simulated. The first assumed the conclusion of a preferential trade agreement between Palestine and Israel and the second assumed that after exiting the customs union with Israel, Palestine joins a customs union with other Arab countries. The produced results depart only slightly from those reported for the *MFN* scenario. Hence, the results of those scenarios are only briefly discussed in the sensitivity analysis section.

**Table 1** presents the weighted tariff rates, where the weights are the volumes of imports for the respective commodities in the base situation, as well as the rates in the two main scenarios.

For simplicity reasons, the scenarios and sensitivity analysis considered in this paper are unilateral, meaning that they are only implemented by the West Bank. The analysis ignored the retaliatory policies that Israel or other countries may initiate in response to new trade policies of the West Bank. For instance, exiting the customs union with Israel is likely to be associated with a more restricted access for Palestinians to the Israeli labour market. Changes in the Israeli policies are not captured in this paper to limit the scenarios to the policy space of the PNA. Moreover, a sovereign Palestinian state with control over its territory will be associated with the removal of existing internal closures and reduced transaction costs. Finally, building and maintaining a customs administration at the borders will involve new costs. These aspects are also not considered in this paper for simplicity reasons.

**TABLE 1** Weighted tariff rates (in %) aggregated over all commodities in the base and the two scenarios

	Base	ND-Lib scenario	MFN scenario
Israel	15.3	0.0	55.5 <sup>a</sup>
USA	3.2	0.0	3.2
EU–28 + EFTA	0.8	0.0	0.8
Turkey	5.9	0.0	5.9
Jordan	4.3	0.0	4.3
GAFTA zone	7.6	0.0	7.6
Rest of the world	62.7	0.0	62.7

<sup>a</sup>Using the weighted averages to come to a single figure that can be displayed in the table leads to a weighted tariff rate for Israel in the MFN scenario of 55.5% which is different from the 62.7% for the rest of the world because the volumes used as weights are different for the two regions.

Source: Own calculations.

## 5 | RESULTS

This section starts with the effects of the two main policy scenarios assuming a floating exchange rate and a fixed current account balance. Next, the sensitivity of the results of the two main scenarios to changes in the exchange rate regime is analysed, followed by a brief discussion of alternative scenarios. Due to space contingency, the results are displayed for aggregated categories. The full set of results can be obtained from the authors upon request in the GDX format that is readable with Demo GAMS<sup>4</sup>.

### 5.1 | Effects on trade performance

Removing tariffs in the *ND-Lib* scenario leads to an increase in the total West Bank import by 10.7% (Figure 3). While the import demand from Israel and the ‘rest of the world’ increases, the import demand from the other five regions decreases. This differentiated outcome stems from changes in the domestic prices of imports from the different regions, and from the trade pattern of certain commodities in the base year. While the elimination of tariffs drives the domestic prices of imports down, the currency depreciation resulting from the rising import demand drives domestic prices of imports up. The net effect varies according to the region.

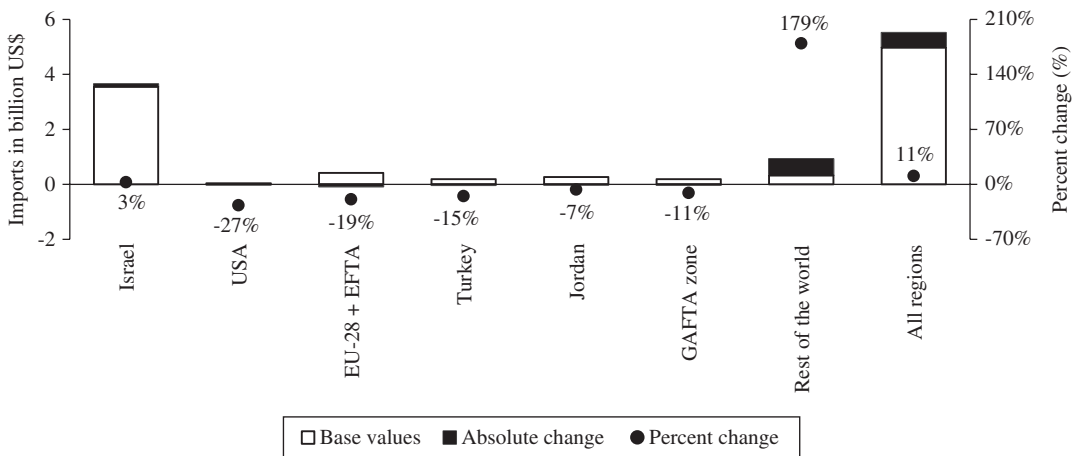
For the ‘rest of the world’, as tariffs were high in the base year (see Table 1), the net effect is a drop in the domestic prices of imports leading to a more than doubled import demand (Figure 3). For the other regions, which have low tariff rates in the base year – due to their preferential trade agreements with Palestine – the currency depreciation effect dominates and the outcome is an increase in the domestic prices of imports between 4.9% and 6.1%. Consequently, the import demand from those regions declines, except for Israel (Figure 3). The increase in import demand from Israel by 2.7% stems from Israel being the dominant, if not the only source of West Bank imports for certain products (e.g. petroleum products). The general increase in demand in the West Bank’s economy leads to increasing import demand for those commodities that are imported only from Israel.

<sup>4</sup>Free to download from [www.gams.com](http://www.gams.com).

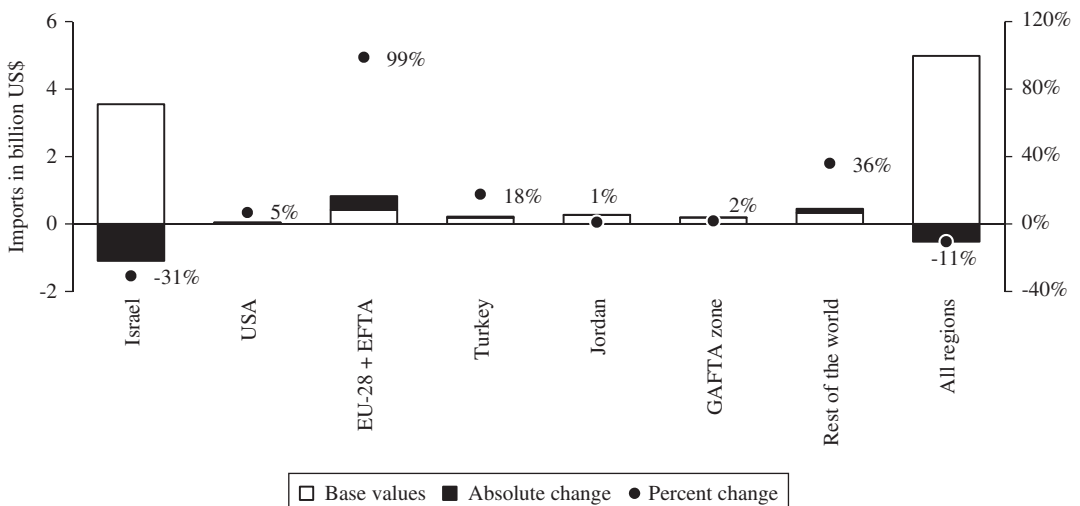


As the total West Bank import increases relatively more than the import from Israel, the import share of Israel declines from 71.3% to 66.2%. This finding shows that adopting a non-discriminatory trade policy changes the trade pattern by reducing the trade diversion caused by the customs union. Nevertheless, Israel remains the West Bank's main trade partner. This finding confirms the prediction of Arnon and Weinblatt (2001) that Israel, due to the size of its economy and its proximity to the West Bank, will remain the West Bank's major trade partner.

In the *MFN* scenario, applying the most favoured nation tariffs to imports from Israel raises the domestic prices of imports from Israel by 11.8% leading to a 30.8% drop in the West Bank's imports from Israel (Figure 4). Although the tariff rates on imports from the other six regions were unchanged in this scenario, the domestic prices of imports from those regions dropped because of the appreciation of the local currency. Subsequently, the import demand from those six



**FIGURE 3** Volume of imports by region of origin in the ND-Lib scenario as compared to the base year (in million US\$ and % change)



**FIGURE 4** Volume of imports by region of origin in the MFN scenario as compared to the base (in million US\$ and % change)

regions increases and substitutes to some extent the imports from Israel. This substitution effect is particularly important for the regions 'EU-28 + EFTA' and 'rest of the world', for which the import demand increases respectively by 98.8% and 35.9%. These results show that introducing tariffs on imports from Israel can contribute to diversifying import sources for the West Bank and reducing the trade diversion effect of the customs union. However, the total West Bank import declines and the whole economy slows down as discussed in [Section 5.2](#) and [Section 5.4](#).

In the *ND-Lib* scenario, the composite import by commodity – that is the aggregate of imports from the different regions – increases the most (by 23.0%) for industrial products. This reflects the import pattern in the base year, with the domestic supply of industrial products being mostly met by imports (see [Table A1](#)). This import pattern is in line with the Heckscher-Ohlin model, which predicts that countries import products using the countries' relatively scarce factors intensively, as most industrial products require substantial capital that is scarce in the West Bank. For agricultural products, the imported quantities remain unchanged, because of the tariff-rate-quota system. After removing the in-quota tariffs, the allowed quotas for several agricultural commodities are reached and there are no out-of-quota imports. For food products and services, imports increase slightly (by 3.3% and 2.6%, respectively). For food products, the small magnitude of the increase is related to the tariff-rate-quota system, similar to agricultural products. Imports of services increase only moderately because several services are non-tradable, as the costs of overcoming barriers to trading them internationally (especially transport cost, intellectual property rights, barriers to labour movements to provide services abroad, etc.) are prohibitively high (Anderson, 1987; Dee et al., 2003). This is particularly the case in the West Bank, where government authority and control over borders is constrained.

In the *MFN* scenario, the composite imports by commodity drop, respectively by 4.7%, 16.2%, 13.2% and 4.6%, for agricultural, food, industrial products and services. The stronger drop in the import of goods, as compared to services, stems from new tariffs being applied only on goods that are imported by Israel – in the base year there were no tariffs on services (see [Table A2](#)). Nevertheless, the import demand for services also declines because the overall demand in the economy falls, as discussed below in [Section 5.3](#).

The price of composite exports increases on average by 5.3% in the *ND-Lib* scenario, and it decreases on average by 8.5% in the *MFN* scenario. The price change in both scenarios mainly reflects the change in the exchange rates, with a Palestinian currency depreciation in the *ND-Lib* scenario, and a currency appreciation in the *MFN* scenario. The volume of exports increases by 36.7% in the *ND-Lib* scenario. Exports of industrial products increase by 47.0% compared to 34.1% for services, 10.5% for agricultural products and –1.4% for food products. The higher relative increase of industrial export stems from the industrial sector being the leading export sector in the West Bank in the base year (see [Table A1](#)). Within this sector, the stone and marble industry, which has the highest exports is relatively labour-intensive. Export of services from the West Bank, mainly refer to the tourism sector, including hospitality (accommodation, food and beverage), which is also a labour-intensive activity. Hence, the export pattern of the West Bank is also in line with the Heckscher-Ohlin model, predicting that countries export the products which use their relatively abundant and cheap factors intensively. The slight decrease in the export of food products is related on the one hand to the unchanged domestic output in that sector (see [Section 5.2](#) and [Figure 5a](#)) and on the other hand to increased domestic consumption (see [Section 5.3](#)). As higher domestic consumption meets unchanged domestic output, exports of food products decline.

In the *MFN* scenario, the export supply decreases by 33.5% in total. Exports of industrial products face the highest decline (39.0%), followed by services (30.7%), agricultural products (17.0%)



and food products (15.7%). In the MFN scenario, the appreciation of the local currency reduces exports and affects strongest the industrial sector as the most export-oriented sector.

In the *ND-Lib* scenario, both real import and export values increase. The net trade effect is an increase of the West Bank trade deficit by 9.2%. In the *MFN* scenario, both real import and export values decrease. The net trade effect is a reduction in the trade deficit by 5.2%.

## 5.2 | Effects on domestic output and unemployment

In the *ND-Lib* scenario, the depreciation of the local currency stimulates domestic production and domestic sectors increase their demand for production factors. For labour, this translates into people moving out of unemployment: the unemployment rate decreases substantially from 17.3% to 5.9% (Table 2). Among labour categories, full employment is reached for low-skilled females and high-skilled males, which had in the reference period the lowest unemployment rates, respectively 11.2% and 8.8% compared with 32.6% for skilled females and 17.4% for low-skilled males. Unemployment still persists for the two labour groups with high unemployment rates in the base period (skilled females and low-skilled males), yet at considerably lowered rates.

In the *MFN* scenario, by contrast, the domestic production shrinks and thus overall unemployment grows. Thereby, unemployment increases relatively more among low-skilled females

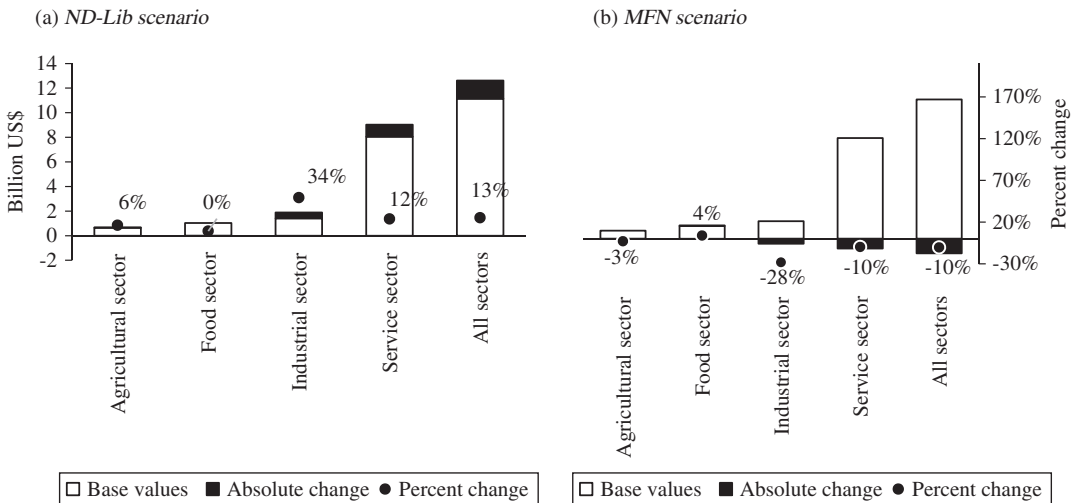


FIGURE 5 Domestic output by sectors in the ND-Lib and MFN scenarios

TABLE 2 Unemployment rates (in %)

	Base scenario	ND-Lib scenario	MFN scenario
Low-skilled male	17.4	5.2	27.3
Low-skilled female	8.8	0.0	17.3
High-skilled male	11.2	0.0	22.4
High-skilled female	32.6	22.4	40.4
Total labor	17.3	5.9	27.0



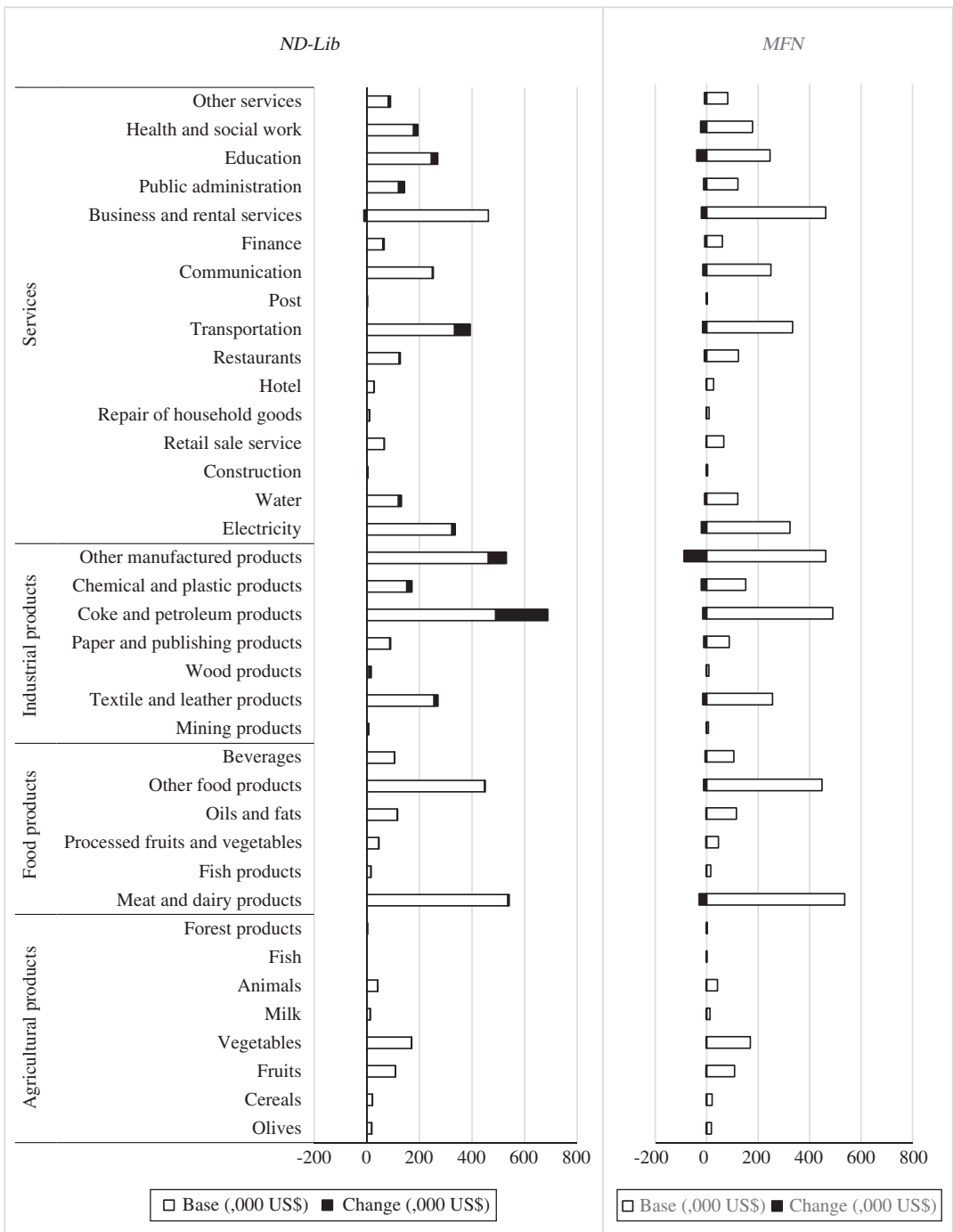
and high-skilled males, which had the lowest unemployment rates in the base period (Table 2). These findings confirm the leverage effect that trade policy has on unemployment.

In the *ND-Lib* scenario, wages increase for the labour categories for which full employment is reached. On average, wages rise by 0.9%. For capital and land that are assumed to be fully employed, prices increase substantially more – by 21.5% and 9.1%, respectively. The higher factor prices lead to increasing production costs by 2.3% on average across domestic sectors. Despite this, increasing domestic demand leads to domestic output growing by 13.3%. The domestic output rises more in the industrial and service sectors as compared to the agricultural and food sectors (Figure 5a). Similar results were obtained by Yutiningsari (2020) who finds that in Indonesia a unilateral removal of tariffs benefits the agricultural sector less than other economic sectors. This result stems from three factors. First, the agricultural and food sectors are the most protected sectors in the West Bank (see Table A2). They are the only products that are subject to tariff-rate-quotas in Palestine. Since the out-of-quota tariffs are prohibitive, their imports are substantially restricted. Hence, the tariff removal simulated in *ND-Lib* affects agricultural and food sectors more compared to others. Second, the industrial sector is the most export-oriented sector in the reference period (see Table A1). Accordingly, the depreciation of the local currency under *ND-Lib* boosts this sector strongest. Finally, with increasing household income, the demand for industrial products and services rises strongly because the income elasticity of demand for these two commodity categories exceeds one, while being below one for agricultural and food products (Engel's law).

In the *MFN* scenario, production costs decline by 2.7% on average, mainly driven by a decline in capital and land costs. Wages remain unchanged as all labour categories still exhibit unemployment. However, the economy shrinks and domestic output decreases by 10.3% (Figure 5b). The decline in domestic output is substantially higher in the industrial and service sectors than in the agricultural sector, as demand for services and industrial products is more elastic with respect to income than the demand for agricultural products. The food sector experiences a slight increase in domestic output (by 4.3%) on the one hand to compensate for the severe drop in import demand (−16.2%, see Section 5.1) and on the other hand because although household demand drops for food products, the drop is less pronounced as food products have a small income elasticity of demand.

### 5.3 | Effects on household income and consumption

Households in the West Bank derive most of their income from labour earnings and capital returns (see Table A3). In the *ND-Lib* scenario, total labour income increases by 14.5%, driven by both the increased employment and higher wages. Total capital return increases by 21.0% due to a higher capital rent. Subsequently, income increases for all household quintiles by 15.3% on average. As capital return increases relatively more than labour income, the richer households, which derive more income from capital, experience a slightly higher income increase. The increased income allows households to consume more. Household consumption increases on average by 8.9%. Thereby, consumption increases more for industrial products and services (21.5% and 6.5%, respectively) than for agricultural and food products (0.8% and 0.9%, respectively) for the reasons developed above. Among industrial products, consumption increased the most for coke and petroleum products, chemical and plastic products, and textile and leather products. Among services, consumption increased the most for transportation, education, public administration, health, electricity and water (Figure 6). The remainder of household income is spent on income taxes, but also set aside as savings or spent on transfers.



**FIGURE 6** Household consumption and change by commodity groups in the ND-Lib and MFN scenarios (in, 000 US\$)

In the *MFN* scenario, the reduced employment drives income from labour down by 13.2%. As demand for capital decreases, the capital rent also decreases and ultimately total capital return declines by 19.1%. Consequently, income decreases for all household quintiles by 13.3%

on average. It decreases slightly more for the higher income households, since they derive a higher share of their income from capital, which experiences a higher drop. The reduced income leads households to consume less with household consumption declining by 7.3% on average. Thereby, consumption declines more for industrial products and services (−10.6% and −7.8%, respectively) than for agricultural and food products (−2.2% and −4.4%, respectively) for the reasons developed above (Figure 6). Household consumption declines less than household income because households reduce savings and transfers.

## 5.4 | Welfare change and macroeconomic effects

A welfare indicator used to summarise the effects from changing prices and income on households is the equivalent variation<sup>5</sup> as a share of household initial expenditure. Figure 7 shows that welfare improves for all household groups in the *ND-Lib* scenario. The richer the household, the higher is the welfare gain. The finding that the welfare gain for households in quintile 5 is lower than for households in quintile 4 is due to income transfers from quintile 5 households to the others. In fact, quintile 5 households conduct 62.1% of all inter-household transfers in the West Bank, including the religious transfers from wealthy to poor households (Zakat). Hence, the burden of increased transfers falls on this household group, reducing their welfare gain to the benefit of the other household groups. In the *MFN* scenario, welfare declines for all household groups. The richer the household, the more is the welfare loss. The welfare loss for households in quintile 5 is less than that of households in quintile 4 due to reduced inter-household transfers, dampening the welfare loss for this household group.

Summarising the individual effects discussed above in the macroeconomic indicator that is the real GDP shows that in the *ND-Lib* scenario, eliminating tariffs stimulates the West Bank economy, which grows by 8.37%. By contrast, a more restrictive trade policy, imposing new tariffs on trade with Israel (*MFN* scenario), leads the economy to shrink by 8.42%. These results are in line with the predictions by Fischer et al. (2001) and Astrup and Dessus (2005) that a liberal and non-discriminatory trade regime is the most suitable for a sovereign Palestinian state.

## 5.5 | Sensitivity analysis

### 5.5.1 | Results with alternative exchange rate and current account closures

Two alternatives to the initial closure rules of a floating exchange rate regime combined with a fixed current account balance are simulated as described in Section 4. The two alternatives assume a fixed exchange rate or currency-peg. Alternative 1 assumes in addition a flexible current account balance, while Alternative 2 incorporates a fixed current account balance.

In Alternative 1, the possibility of foreign borrowing allows the total import demand to increase by 18.3% in the *ND-Lib* scenario compared to an increase by 10.7% in the model with the initial closure. Consequently, the current account deficit increases by 61.8%. However, in Alternative 2, the import demand only increases by 5.9% because a fixed current account balance

<sup>5</sup>The Equivalent Variation is defined as the amount of compensation, that must be added (subtracted) to (from) household initial income, to leave that household as well off as under the combined price and income changes.

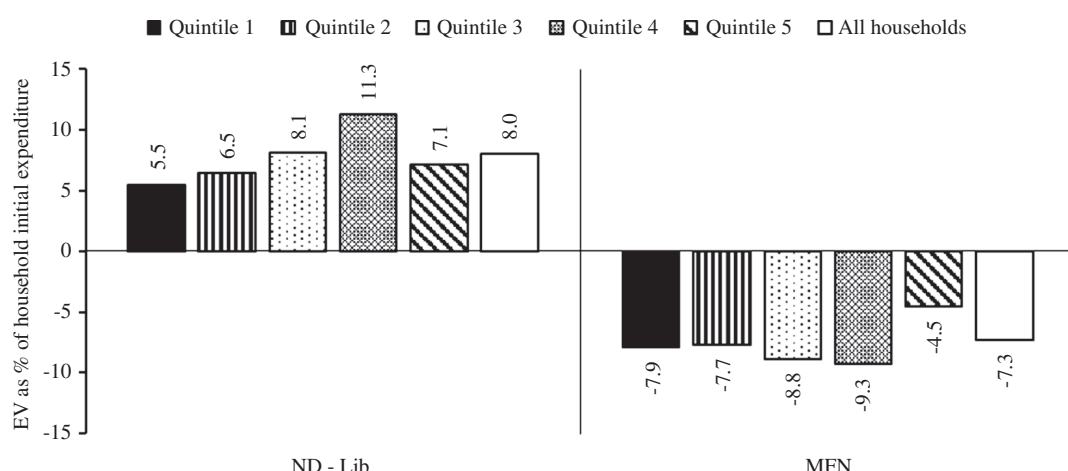


FIGURE 7 Change in household welfare by household quintile in the ND-Lib and MFN scenarios

is assumed, removing the possibility to finance imports with foreign borrowing. The additional import demand in Alternative 2 only originates from the ‘rest of the world’ region, for which the domestic price of imports drops the most.

In the *MFN* scenario, the results of Alternative 1 show the import demand to drop by 18.9% compared to a decline by 10.6% in the model with the initial closure. This sharp decline is associated with a reduction in the current account deficit by 54.8%. By contrast, the results of Alternative 2 indicate a moderate decline by 6.4% in the total import demand.

The changes in the macroeconomic aggregates under Alternative 1 show total demand and domestic production to increase in the *ND-Lib* scenario due to the additional foreign borrowing. The real GDP increases by 9.3%, compared to 8.4% in the model with the initial closure. In the *MFN* scenario, final demand falls more rapidly than in the model with the initial closure and the real GDP drops by 10.0% compared to 8.4% in the model with the initial closure.

The results of Alternative 2 show moderate effects of both trade scenarios on the economy. In the *ND-Lib* scenario, the real GDP grows only by 2.0%, while in the *MFN* scenario it declines only by 0.9%.

In conclusion, these results indicate that the foreign exchange policies have considerable effects on the outcomes of any trade policy. Therefore, the Palestinian authorities may want to gain more control over monetary policies.

### 5.5.2 | Results of alternative policies

A moderate variant of the *MFN* scenario is first simulated assuming that after exiting the customs union, Palestine signs a preferential trade agreement (*PTA*) with Israel. In this scenario, the average tariff on trade partners having already trade agreements with Palestine is applied to imports from Israel. In addition, the introduction of rules of origin causing higher transaction costs is assumed through an increase in prices for imports originating from Israel by 3.0% and a reduction in prices for exports to Israel by 3.0%. The results are moderate as compared to those of the *MFN* scenario. GDP decreases by 3.5% in the *PTA* scenario, while it decreases by 8.4% in the *MFN* scenario. This finding first shows that both *PTA* and *MFN* scenarios are less desirable than the *status quo* of continued customs union with Israel, since in both cases GDP decreases

relatively to the *status quo*. Second, it shows that the higher the tariffs introduced on imports from Israel, the worse the outcome for the West Bank economy.

In a second variant of the *MFN* scenario, it was assessed whether forming a new customs union with the Arab countries could compensate the economic costs of imposing high tariffs on imports from Israel. In this *GAFTA customs union* scenario, tariffs on imports from the GAFTA members (GAFTA zone and Jordan) are removed, while applying the most favoured nation tariff rates to Israel. However, the results of the *GAFTA customs union* scenario hardly differ from those of the *MFN* scenario. This finding reflects the fact that the GAFTA members only make a tiny share of the West Bank trade and entering a GAFTA customs union will not compensate for imposing high tariffs on imports from Israel, which is likely to remain the West Bank main trade partner. Despite similarities in culture and language, trade between West Bank and other Arab countries of the Middle East is low. This reflects a general pattern of low trade between Arab countries in the Middle East due to obstacles including lack of complementing trade patterns, opaque administrative systems and high trade barriers, state monopolies spurring inefficient and protected industries, unsupportive political climate for reform and cooperation, fragile confidence between ruling elites, historical wounds, limited economic diversification and insufficient physical infrastructure (Kamel, 2021; Momani, 2007; Tovias et al., 2007).

An additional policy is run to assess the effect of the tariff-rate-quota in agriculture and food sectors on the economy. Accordingly, the two main scenarios (*ND-Lib* and *MFN*) are simulated along with an increase in the import quotas by 50%. The results indicate that the outcome of both trade policy options is improved if the quotas are increased. Increasing the quotas reduces the constraint imposed upon the economy and in both trade policy options more import takes place. Ultimately, the real GDP increases in the *ND-Lib* scenario by 8.7%, compared to 8.4% when quotas are not increased. In the *MFN* scenario, real GDP decreases by 8.1%, while it decreases by 8.4% when the quotas are not increased. A complete removal of the tariff-rate-quota system is likely to further magnify the positive benefits of the simulated trade policies for the whole economy, although domestic producers of agricultural and food products are negatively affected. These results are in line with those of Bussolo et al. (2011) that freeing trade in agriculture will have positive (though small) efficiency gains and substantial redistributive effects.

## 6 | CONCLUSIONS AND POLICY IMPLICATIONS

The Paris Protocol, which governs the economic relations between Israel and Palestine, formalised the existing customs union that is largely based on Israeli rules. Due to structural differences between the two economies, those rules are not favourable to the West Bank economy. The Paris Protocol as a transitional agreement is supposed to pave the way for a final settlement, where a sovereign Palestinian state would eventually have full control over its trade and monetary policies. In the context of such a final settlement, this paper simulates two trade options, in which the customs union with Israel is removed and the Palestinian authorities solely determine trade policy. The first scenario is the elimination of tariffs on imports from all trade partners (*ND-Lib* scenario), and the second scenario simulates the imposition of high tariffs on imports from Israel (*MFN* scenario).

Of the two analysed trade policy options, only the abolishment of tariffs on imports from all trade partners, as simulated in the *ND-Lib* scenario, improves all macroeconomic indicators of



the West Bank economy as compared to the status quo of a continued customs union. By contrast, introducing new tariffs on imports from Israel – as simulated in the *MFN* scenario – hurts the West Bank economy. Accordingly, a sovereign Palestinian state may prefer to adopt a liberal and non-discriminatory trade regime. Adopting such a trade policy can diversify West Bank trade and reduce trade diversion caused by the current customs union.

The results also show that Israel is likely to remain the main trade partner for the West Bank, due to the size of its economy and its geographical position. The higher the tariffs introduced on imports from Israel, the higher the economic and welfare losses in the West Bank. Moreover, a greater trade integration with other Arab countries hardly reduces the economic and welfare losses of applying high tariffs on imports from Israel. Accordingly, concluding a trade agreement with Israel is more desirable than trading with Israel under the most favoured nation trade regime.

The results show that eliminating tariffs on agricultural and food products hardly affects the imported quantities, because the domestic agricultural and food sectors are protected against import competition with a system of tariff-rate-quotas. However, this protection comes at a cost for the whole economy. While farmers are better off, consumers are worse off and the whole economy bears a net welfare loss. Therefore, a revision of the tariff-rate-quota system is a decision the Palestinian authorities may consider depending on whether the national interest is to protect domestic producers and ensure domestic supply of food or enhance the economy-wide economic benefits by relying more on trade. Revising the level of tariff-rate-quotas will also depend on the final agreement with Israel, since the current levels are negotiated with Israel.

The results also highlight that trade policy in Palestine has a leverage on unemployment. In the *ND-Lib* scenario, unemployment decreases from 17.3% to 5.9%. Hence, empowering the Palestinian authorities with full control over trade policy instruments can improve their capacity to tackle the unemployment problem. Changes in employment have direct effects on household income, and thereby on household welfare. In the *ND-Lib* scenario, household welfare improves for all household groups by 19.9% on average. However, welfare gains are higher for higher income than for lower income households. Therefore, if the Palestinian authorities aim at a fairer distribution of the welfare gains, they should increase transfers to poorer households.

The monetary policy adopted also has substantial impact on the magnitude of trade policy effects. Therefore, the PNA may want to gain full control over its national currency and its exchange rate. The highest overall welfare gains could be achieved with the most liberal and non-discriminatory trade policy, that is abolishing tariffs and quotas with respect to all trade partners. Yet, for a fairer distribution of welfare gains, Palestinian authorities should compensate the losers, especially domestic producers of agricultural and food products, and may consider transfers to poor households, for whom welfare gains are smaller.

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## CONFLICT OF INTEREST

None.



## DATA AVAILABILITY STATEMENT

The data that support the findings of this study can be obtained from the authors upon request.

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## SUPPORTING INFORMATION

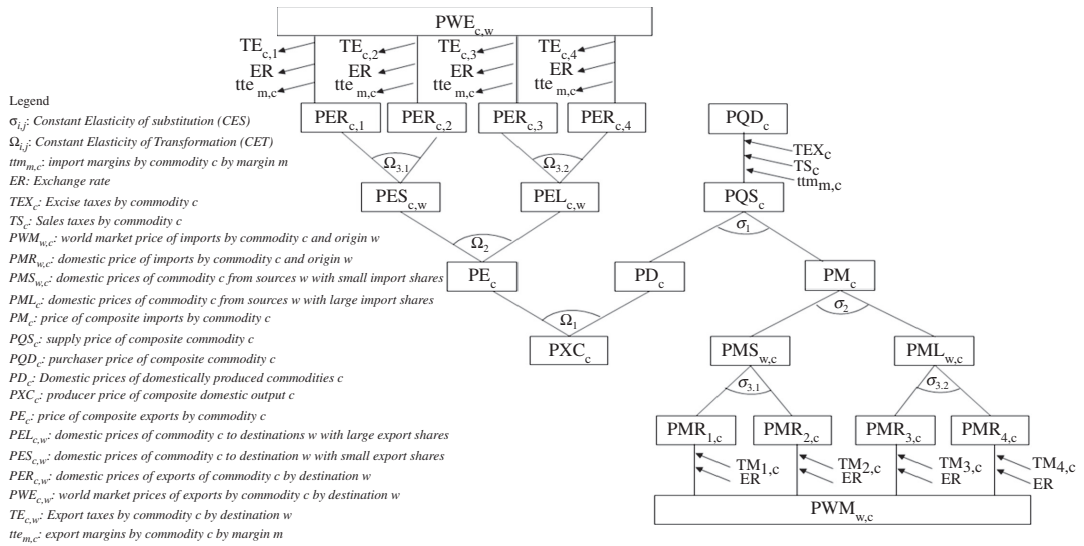
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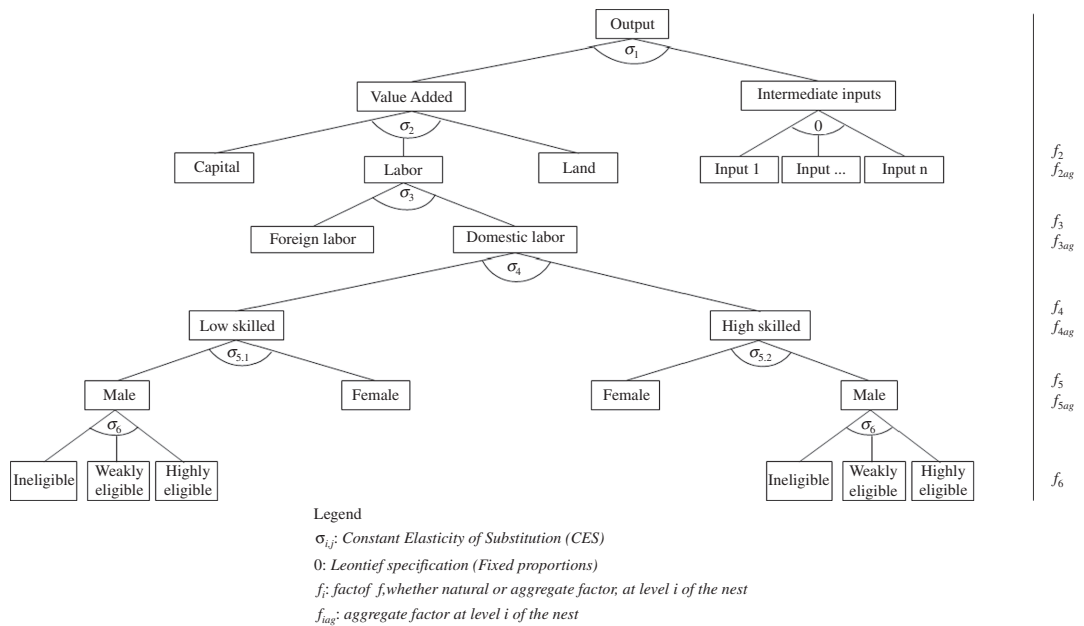


## APPENDIX

## Model documentation (See Appendix S1)



**FIGURE A1** Visual representation of the extended model's trade block with multi-trade partner set-up and regions with small and large trade shares. Source: Own illustration



**FIGURE A2** Production nesting structure in the extended model. Source: Own illustration

TABLE A1 Shares of commodity groups in total domestic supply and shares of exports in domestic output in the West Bank in 2011

	Total import demand (Mio. US\$)	Total domestic supply (Mio. US\$)	Import demand in domestic supply (%)	Total export supply (Mio. US\$)	Total domestic output (Mio. US\$)	Export supply in domestic output (%)
Agricultural products	355	936	37.9	65	647	10.1
Food products	666	1434	46.4	142	909	15.6
Industrial products	3535	4274	82.7	778	1518	51.3
Services	1080	8886	12.2	254	8061	3.2
All commodities	5636	15,531	36.3	1239	11,134	11.1

Source: Agbahey et al., 2016.

**TABLE A2** Tariff rates (in %) by commodity group and trade partner in 2011

	<b>Agricultural products</b>	<b>Food products</b>	<b>Industrial products</b>	<b>Services</b>
Israel	0.0	0.0	21.0	0.0
USA	0.1	25.1	0.0	0.0
EU–28 + EFTA	0.6	6.3	0.0	0.0
Turkey	0.0	32.3	0.0	0.0
Jordan	0.0	26.0	0.2	0.0
GAFTA zone	0.1	17.8	0.2	0.0
Rest of the world	37.3	58.8	65.4	0.0

Source: Agbahey et al., 2016.

**TABLE A3** Composition of household income (in %)

	<b>Quintile 1</b>	<b>Quintile 2</b>	<b>Quintile 3</b>	<b>Quintile 4</b>	<b>Quintile 5</b>	<b>All households</b>
Labor	77.7	77.1	74.8	63.5	47.8	64.0
Capital	7.2	11.2	15.7	25.6	33.8	22.4
Land	0.0	0.0	0.0	0.0	0.0	0.0
Inter-household transfers	1.3	0.8	0.8	0.7	0.7	0.8
Transfers from non-profit organisations	0.3	0.2	0.1	0.1	0.0	0.1
Government transfers	10.3	7.6	4.3	6.4	8.4	7.3
Remittances	3.3	3.2	4.3	3.8	9.2	5.5
Total	100	100	100	100	100	100

Source: Agbahey et al., 2016.