Paper prepared for the 19th Annual Conference on Global Economic Analysis, June 15-17, 2016, Washington DC, USA

(Draft version)

Consequences of conflict: the impact of the closure regime on the West Bank's economy

Johanes Agbahey[1*], Khalid Siddig[1], Harald Grethe[1], Ole Boysen[2]

[1] *International Agricultural Trade and Development Group, Albrecht Daniel Thaer Institute for Agriculture and Horticulture Sciences, Humboldt University, Unter den Linden 6, 10099 Berlin, Germany*

[2]*Agricultural and Food Policy Group, Institute for agricultural policy and markets, University of Hohenheim, Schwerzstr. 46, 10593 Stuttgart, Germany*

* Corresponding author: johanes.agbahey@hu-berlin.de

Abstract

The Palestinian-Israeli conflict witnessed a new development in the mid-90s with the introduction of the closure policy. This policy consisting in roadblocks, and fixed and mobile checkpoints restricts the movement of goods and labor between the Palestinian territories and Israel, between the West Bank and the Gaza Strip, and inside the West Bank. As a result of this policy the economic space of the West Bank is divided into small pieces and trade with the rest of the world is distorted. The impact of the closure policy on the West Bank's economy is largely understudied. Taking advantage of this unique context, this study addresses the economy-wide effects of removing the closures, using a social accounting matrix developed for the West Bank for the year 2011. A variant of the STAGE suite of CGE models is used and extended to conform the unique feature of the West Bank's economy. In this paper the removal of the closures is simulated through the reduction of the trade and transport margins by 33%, and the increase in efficiency in the transportation sector by 30%. The results suggest that removing the closure policy will induce a substantial growth of the West Bank's economy by 2 to 7% and will have distributional effects among the household groups. Trade will also be significantly affected. Export value will increase by up to 33%, while import value will increase by up to 12%.

Keywords: closure policy, Computable General Equilibrium, Middle East, SAM, trade.

1. Introduction

The signing of the Oslo peace accord in 1993 and the Paris protocol on economic relations in 1994 created high expectations for economic growth in Palestine and integration of the Palestinian economy with Israel. However, these expectations have in large part not materialized (Akkaya et al., 2008). Political tension have progressively led to the implementation of restrictions imposed by Israel in response to security incidents or perceived risks (Fischer et al., 2001). The restrictions are multi-faceted. They include a work permit policy, which strongly affects labor mobility for Palestinian workers into Israel. They also include a physical barrier between the Palestinian territories and Israel as well as a policy of closure, which distorts trade.

The closure policy was initiated in the mid-90s and is composed of two types of closures. External closures restrict the movement of goods and people between the Palestinian territories and Israel and between the West Bank and the Gaza Strip. Internal closures limit the movement of goods and people within the West Bank. Between these two types of closures, the most recurrent are the internal closures. Saleh (2004) reports that more than 80% of the staffed checkpoints are within the West Bank. The fixed and mobile checkpoints combined with a multitude of roadblocks divide the economic space of the West Bank into small pieces. As a result, trade flows are disrupted and transaction costs are excessive (Fischer et al., 2001). Although the Palestinian-Israeli conflict has been subject to various studies, the impact of the closure regime on the West Bank economy has barely been investigated.

The Palestinian-Israeli conflict has for a long time been covered by media reporters and researchers. The political, sociological and psychological dimensions of the conflict are well documented (e.g. Jaeger and Paserman 2008). On the economic dimension of the conflict, there is a growing literature (e.g. Benmelech et al., 2010). However, the consequences of the policies enacted in response to the conflict have only occasionally been investigated. Some recent research addresses the impact of the work permit policy on labor markets. Mansour (2010) analyses the effects of increased labor supply in the West Bank market following limited access to the Israeli market on wages and unemployment. Etkes (2012) assesses the impact of the permit policy on the overall Palestinian labor force. Flaig et al. (2013) investigate the impact of relaxing the restrictions on Palestinian labor mobility for the Israeli economy.

The literature assessing the consequences of the restrictions on trade is very limited. Ihle and Rubin (2013) address the consequences of closures on bilateral trade and on price transmission, while Madi et al. (2009) assess the performance of domestic food markets and imported food in the Palestinian territories under the closure regime. Akkaya et al. (2008) study the impact of the closure regime on trade and estimate the trading costs associated with the closure regime. A limitation of these three studies is that they either focus on only a few traded commodities or they omit the multiplier effects in the estimation of the costs. Having identified these research gaps, this study makes the following contributions to the literature. First, it covers the effects on the economy at large represented by macroeconomic indicators and households welfare using a well disaggregated database and a computable general equilibrium model. Second, it sheds light on the consequences of the closure regime on trade for all goods and services between the West Bank and the rest of the world.

2. Model and data

The model used in this study belongs to the STAGE suite of CGE models. STAGE-2 uses a combination of linear and non-linear relationships governing the behavior of the model's agents (Mc-Donald and Thierfelder, 2013). The model explicitly accounts for transport and trade margins and allows to capture the transactions costs associated with the closure regime that is investigated in this study. The domestic production module is extended to a seven-level production process that better differentiates the composition of the labor in the domestic West Bank market (Figure 1).

The model is calibrated to a West Bank SAM for 2011 (Agbahey *et al.*, forthcoming). The full SAM comprises 325 accounts, of which 83 are commodities and 49 are activities. This detailed disaggregation allows assessing the impact of the closure regime on trade for specific commodity groups and the multiplier effects on the production sectors. The SAM also includes three margin accounts, namely wholesale trade, retail trade and transport margins. The depiction of the margins in the SAM is essential to study the effects of the closure regime as the restrictions basically increase the transaction costs. The SAM encompasses 59 production factor accounts and 111 household groups, allowing the assessment of the multiplier effects on factor markets and households' welfare. Finally, the SAM singles out Israel from the rest of the world allowing to capture explicitly the transactions between Israel and the West Bank.
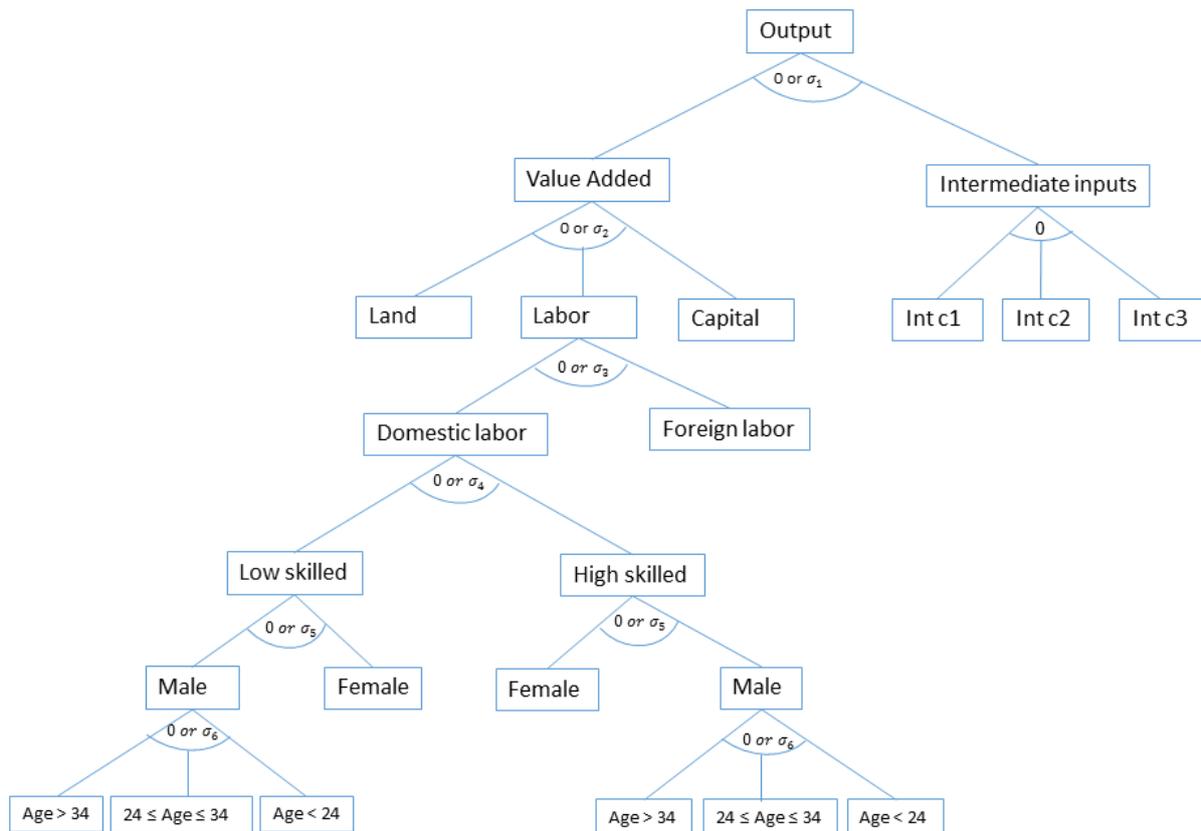

Figure 1. Production nesting structure

3. Simulations

The closure regime has two major effects on trade in the West Bank. First, it raises the transaction costs. Passage at checkpoints and uncertainty of closures generate delays and add to the costs of doing business. The second major impact is on productivity in the transportation sector. The *back-to-back* system in place requires trucks upon arrival at a checkpoint to be unloaded and then reloaded on to another truck. This system causes additional labor and fuel costs and a decline in the factor productivity in the transportation sector.

Two simulations are run in this study. The first only targets the transportation sectors, which is the one that is the most affected by the closure regime. Closures are assumed to reduce productivity in the transportation sector by 30%. Therefore, a situation without closures is simulated by raising productivity in the transportation sector by 30%. The second simulation is more general and refers to both trade and transport margins. Akkaya et al. (2008) estimated the closure-induced increase in transaction costs at about one third. Transaction costs are approximated through the trade and transports margins. Hence, a situation without closure is simulated by removing 33% of the transport and trade margins.

4. Results
4.1. Macro-economic effects

At the macro-economic level, the two simulations have overall positive effects on the West Bank's economy. However, the simulation with increased margins has much stronger effects. While the simulation with increased productivity in the transportation sector increases GDP by 2%, the one with reduced margins value increases GDP by 7% (Figure 2). In both simulations, domestic production increases and total absorption also increases in similar proportions. Both import demand and export supply increase. The local currency is appreciating by 0.3% and 3.5% respectively in the simulations with increased productivity and reduced margins. Subsequently, import becomes more attractive and import value increases. The observed increased in export supply is triggered by the increased absorption and the change in production cost structure that results in increased domestic production.
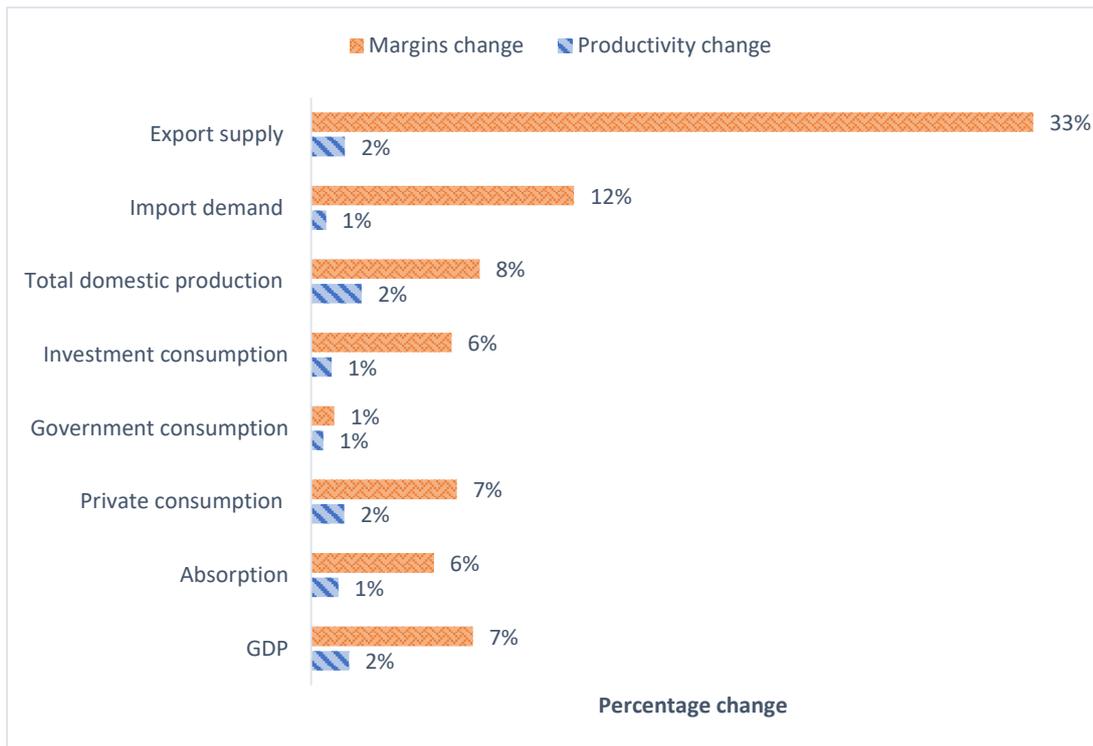
Figure 2. Macro level results

4.2. Effects on Palestinian households

The two policies that are simulated improve all household groups' welfare (Figure 3). Moreover, the two simulations have distributional effects. Both benefit more the poor households than the rich, although the distributional effects of the simulation with reduced margins value are stronger.
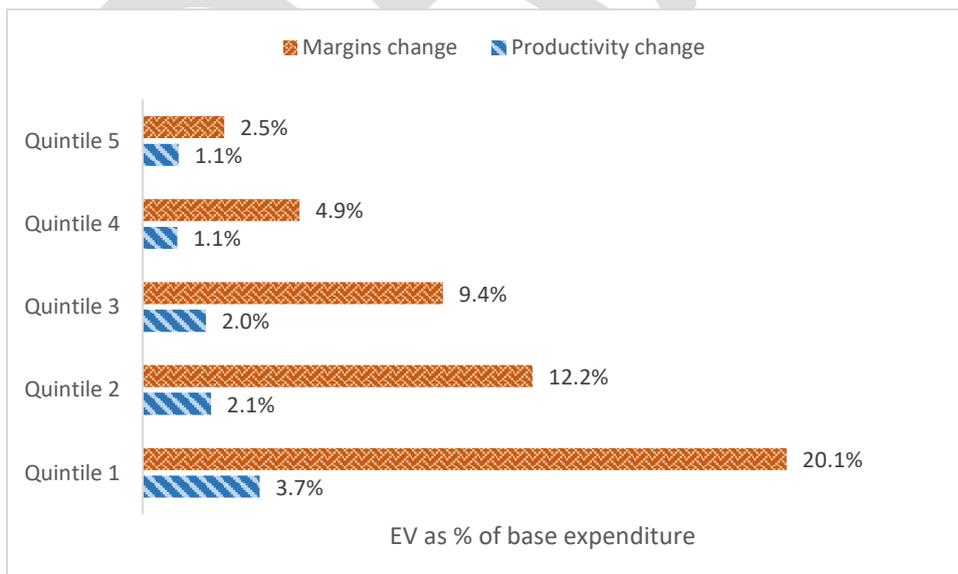

Figure 3. Change in household's welfare

5. Conclusion

References

Agbahey, J., Siddig, K., Grethe, H., Boysen, O., forthcoming. A 2011 SAM for West Bank with a detailed representation of the labor markets and income distribution. University of Hohenheim, Stuttgart, Germany.

Akkaya, S., Fiess, N., Kaminski, B., Raballand, G., 2008. Economics of 'Policy-Induced' Fragmentation: The Costs of Closures Regime to West Bank and Gaza. Middle East and North_Africa Work. Pap. 50. The World Bank, Washington D.C., USA.

Benmelech, E., Berrebi, C., Klor, E.F., 2010. The Economic Cost of Harboring Terrorism. Jour. Confl. Resolut. 20 (10), 1-23.

Etkes, H., 2012. The Impact of Employment in Israel on the Palestinian Labor Force. Peace Econ. Peace Sci. Public Policy 18 (2), 1-34.

Fischer, S., Alonso-Gamo, P., Von Allmen, U.E., 2001. Economic developments in the West Bank and Gaza since Oslo. Econ. Jour. 111, 254-275.

Flaig, D., Siddig, K., Grethe, H., Luckmann, J., McDonald, S., 2013. Relaxing Israeli restrictions on Palestinian labor: Who benefits? Econ. Model. 31, 143–150.

Ihle, R., Rubin, O.D., 2013. Consequences of unintended food policies: Food price dynamics subject to the Israeli–Palestinian conflict. Food Policy 42, 96–105.

Jaeger, D., Paserman, D., 2008. lThe Cycle of Violence. An empirical analysis of fatalities in the Palestinian-Israeli conflict. Am. Econ. Rev. 98 (4), 1591-1604.

Madi, A., Hassan, H.A., Al-Ghool, N., Ghosh, O.A., 2009. The Impact of Closure and High Food Prices on Performance of Imported Staple Foods and Vegetable and Fruits Market in the oPt. The World Food Programme, Rome, Italy.

Mansour, H., 2010. The effects of labor supply shocks on labor market outcomes: Evidence from the Israeli–Palestinian conflict. Labor Econ. 17, 930–939.

Mc-Donald, S., Thierfelder, K., 2013. A Static Applied General Equilibrium Model: Technical Documentation - STAGE Version 2. mimeo (www.cgemod.org.uk)

Saleh, B.A., 2004. Economic conditions and resistance to occupation in the West Bank and Gaza Strip: There is a causal connection. Topics in Middle Eastern and North African Economies, electronic journal, Volume 6, Middle East Economic Association and Loyola. University Chicago. http://www.luc.edu/orgs/meea/