CIREQ

Centre interuniversitaire de
recherche en économie quantitative

Cahier 20-2018

Security, Trade, and Political Violence

Francesco Amodio, Leonardo Baccini and Michèle Di Maio

www.cireqmontreal.com

@CIREQMTL

facebook.com/CIREQ

Université Concordia University

McGill

Université de Montréal

Fonds de recherche Société et culture Québec

CIREQ

Le **Centre interuniversitaire de recherche en économie quantitative (CIREQ)** regroupe des chercheurs dans les domaines de l'économétrie, la théorie de la décision, la macroéconomie et les marchés financiers, la microéconomie appliquée ainsi que l'économie de l'environnement et des ressources naturelles. Ils proviennent principalement des universités de Montréal, McGill et Concordia. Le CIREQ offre un milieu dynamique de recherche en économie quantitative grâce au grand nombre d'activités qu'il organise (séminaires, ateliers, colloques) et de collaborateurs qu'il reçoit chaque année.

*The **Center for Interuniversity Research in Quantitative Economics (CIREQ)** regroups researchers in the fields of econometrics, decision theory, macroeconomics and financial markets, applied microeconomics as well as environmental and natural resources economics. They come mainly from the Université de Montréal, McGill University and Concordia University. CIREQ offers a dynamic environment of research in quantitative economics thanks to the large number of activities that it organizes (seminars, workshops, conferences) and to the visitors it receives every year.*

Cahier 20-2018

Security, Trade, and Political Violence

Francesco Amodio, Leonardo Baccini and Michèle Di Maio

CIREQ, Université de Montréal
C.P. 6128, succursale Centre-ville
Montréal (Québec) H3C 3J7
Canada
Téléphone : (514) 343-6557
Télécopieur : (514) 343-7221
cireq@umontreal.ca
http://www.cireqmontreal.com

Dépôt légal - Bibliothèque nationale du Canada, 2018, ISSN 0821-4441
Dépôt légal - Bibliothèque et Archives nationales du Québec, 2018
ISBN-13 : 978-2-89382-733-9

Security, Trade, and Political Violence*

Francesco Amodio† Leonardo Baccini‡ Michele Di Maio§

September 7, 2018

Abstract

This paper studies the effect of security-motivated trade restrictions on economic activity and political violence. We exploit the 2008 restrictions imposed by Israel on imports of selected goods to the West Bank as a quasi-experiment. We show that after 2008 (i) output and wages decrease differentially in manufacturing sectors that use restricted materials more intensively as production inputs, (ii) wages decrease in localities where employment is more concentrated in these sectors, and (iii) episodes of political violence are more likely to occur in these localities. This mechanism accounts for 16% of violent events that occurred in the West Bank from 2008 to 2012.

Keywords: security, trade, political violence, conflict.

JEL Codes: D22, D24, F51, N45, O12.

*We are thankful to Vincent Arel-Bundock, Michael Bechtel, Bill Bernhard, Vincenzo Bove, Bruno Caprettini, Lorenzo Casaburi, Benjamin Crost, Christian Fons-Rosen, Nikhar Gaikwad, Bobby Gulotty, Stephan Haggard, Hyeran Jo, Soo Yeon Kim, Esteban Klor, Rocco Macchiavello, Hani Mansour, Anant Nyshadham, Krzysztof Pelc, Markus Poschke, Bob Rijkers, Moses Shayo, Jessica Stanton, Johannes Urpelainen, Boliang Zhu, Asaf Zussman, and participants of conferences and workshops at American University, Hebrew University, McGill University, New York University, University of Pennsylvania, University of Toronto, Yale University, The World Bank, BGSE Summer Forum 2017, HiCN-FAO 2018, IPES 2016, NEUDC 2016, SSDEV 2017 for helpful comments and suggestions. Cassandra Frankel, Karim Qasim, Matthew Tenney, Jeremy Yeo, and Corrina Vali provided excellent research assistance. Francesco Amodio and Leo Baccini gratefully acknowledge the support of McGill Internal SSH Development Grants. Errors remain our own.

†francesco.amodio@mcgill.ca, McGill University and CIREQ, Leacock Building 514, 855 Sherbrooke St. West, Montreal, QC H3A 2T7, Canada.

‡leonardo.baccini@mcgill.ca, McGill University and CIREQ, Leacock Building 432, 855 Sherbrooke St. West, Montreal, QC H3A 2T7, Canada.

§michele.dimaio@uniparthenope.it, University of Naples "Parthenope" and HiCN, Via G. Parisi 13, 80132 Naples, Italy.

1 Introduction

Issues of security and trade dominate the current political debate, and these issues are interlinked. States routinely implement restrictions on trade that are motivated by security reasons. Several international agreements regulate trade of specific products and technologies that are *dual-use* - produced for both civilian and military purposes - imposing barriers or tracking their mobility across countries. While the security argument behind these restrictions is straightforward, their economic and political consequences are not. Trade barriers negatively affect the economy and its efficiency (Ethier 1982; Melitz 2003). By reducing economic activity and income, trade restrictions may decrease the opportunity cost of engaging in political violence and increase grievance among the population (Collier and Hoeffler 1998; Miguel, Satyanath, and Sergenti 2004; Blattman and Miguel 2010; Dube and Vargas 2013; Blattman and Annan 2016). As a result, security-motivated trade policies can increase threats to security. The extent to which this happens depends on the interaction between the nature of the implemented restrictions and the production structure of the affected economies.

This paper asks whether security-motivated trade restrictions have negative economic consequences, and their implications for political violence. To answer this question, we exploit the restrictions imposed by Israel on imports to the West Bank. In 2008, Israel issued a list of dual-use goods and materials subject to severe import restrictions. Because Israel controls all borders and commercial crossings, this measure de facto bans several foreign production inputs from entering the West Bank (World Bank 2013).

We frame the issuance of the dual-use list as a quasi-experiment, and provide three sets of results. First, we use information on the operations of more than 30,000 Palestinian establishments surveyed over the years 1999 to 2012. We show that output and wages decrease differentially after 2008 in those manufacturing sectors that use dual-use materials more intensively as production inputs. Second, we track the evolution of the labor market at the locality level. Using Labor Force Survey data, we show that local labor market conditions worsen differentially in those localities where a larger share of workers is employed in dual-use input intensive sectors. Third, we link worsening labor market conditions to the evolution of political violence from 1999 through 2012. We use geo-referenced information on violent political events to show that these are differentially more likely to occur after 2008 in those same West Bank localities where economic activity is highly dependent on dual-use materials as inputs. We show that the effect of the de facto import ban on political violence involves major episodes, such as assassinations and killings, and also violence perpetrated by non-organized groups. We also find that these violent acts target both Israeli and Palestinian actors. This suggests that the effect of the dual-use list on political violence does not materialize only through increased hatred against Israel, and that the policy has a destabilizing effect on the West Bank and its

government.

To identify the effects of the dual-use list, we adopt a difference-in-differences strategy. To rule out any immediate concern about endogeneity, we derive measures of intensity in dual-use inputs and employment concentration using the U.S. Input-Output matrix and employment data from the 1997 Palestinian Census respectively as benchmark. We then compare the evolution of firm output, wages, and political violence over time across sectors and localities according to these measures. We show that all outcome variables do not evolve differentially before 2008 across sectors and localities that are differentially intensive in dual-use inputs. We also show that dual-use input intensity does not correlate with any other characteristics at the sector or locality level which could account for a differential trend in economic and political outcomes after 2008. We corroborate our main results by implementing a number of robustness checks and placebos. In particular, we perform the same empirical analysis we conduct for the West Bank using data on firms and localities in the Gaza Strip. During the period of analysis, the Gaza Strip was under an Israeli-imposed full embargo and therefore not affected by the dual-use list. As expected, we find no differential effect of the dual-use list on the economy and political violence in the Gaza Strip.

Our results provide evidence of a causal path from the issuance of the dual-use list to political violence. Our research design prevents us from assessing what the overall level of violence would have been in the absence of the policy. Yet, our analysis shows direct evidence of a specific mechanism which materializes through the negative impact of the list on industrial production and local labor markets. According to our estimates, this mechanism accounts for a 4.6% loss in the total value of manufacturing output and for 15.7% of all events of political violence that occurred in the West Bank in the period 2008 to 2012. Our study highlights the trade-offs and interlinkages between security and trade issues, suggesting the need for an integrated policy approach.

This paper builds upon and contributes to several streams of research. First, the evidence we present builds upon the literature that studies the impact of international trade on firms and local labor markets. The existing empirical evidence convincingly shows that access to foreign inputs increases firm productivity (Schor 2004; Amiti and Konings 2007; Kasahara and Rodrigue 2008; Topalova and Khandelwal 2011). Several studies show that the impact of trade liberalization on the labor market is heterogeneous in space, and depends on the sectoral composition of employment at the local level (Autor, Dorn, and Hanson 2013; Dix-Carneiro and Kovak 2017; Dix-Carneiro, Soares, and Ulyssea 2017). These studies focus on import competition as the relevant channel. By exploiting the issuance of the dual-use list, our paper relies on a quasi-experimental source of variation in access to foreign inputs to show its impact on firms and local labor markets.

Second, we contribute to a vast literature that studies the relationship between international

trade and conflict. The traditional *liberal view* is that the spread of free markets and higher volumes of international trade should decrease the incidence of interstate wars (Morelli and Sonno 2017). Martin, Thoenig, and Mayer (2008a) investigate theoretically and empirically the validity of this argument, highlighting the contrasting effects of bilateral and multilateral trade agreements. Martin, Thoenig, and Mayer (2008b) show that the effect of international trade on the opportunity cost of engaging in civil conflict is ambiguous. To the best of our knowledge, ours is the first paper to provide micro-founded robust evidence of the causal effect of trade disruption on political violence.

Third, our analysis is related to the several empirical studies have documented that economic shocks matter for conflict. Most of these studies exploit changes in international prices as exogenous source of variation in economic conditions (Brückner and Ciccone 2010; Dube and Vargas 2013; Bazzi and Blattman 2014; Berman and Couttenier 2015; Berman, Couttenier, Rohner, and Thoenig 2017; Ciccone 2018). While providing often ideal exogenous shocks, changes in international commodity prices are determined by the interaction of demand and supply at the global level, with little role for government intervention. On the contrary, our paper focuses on a policy-induced source of economic shock. Trade restrictions are widely implemented policy tools over which governments have direct control. By providing evidence on their functioning and the trade-offs involved, our findings can help to fine-tune these policies and the scope for their implementation.

Finally, our paper contributes to a growing literature in economics and political science that exploits the specific features of the Israeli-Palestinian conflict and setting to answer broader policy-relevant research questions. These include the effect of conflict on input misallocation and firm performance (Amodio and Di Maio 2017), child labor and health (Di Maio and Nandi 2013; Mansour and Rees 2012), education (Brück, Di Maio, and Miaari 2018), and welfare (Etkes and Zimring 2015). Other studies investigate the labor market consequences of mobility restrictions (Calì and Miaari 2018; Abrahams 2018), the role of media for strategic timing of military attacks (Durante and Zhuravskaya 2018), and the general equilibrium effects of trafficking disruption on crime (Getmansky, Grossman, and Wright 2018).

The remainder of the paper is organized as follows. The next section provides background information on the setting and Israeli-imposed trade restrictions. Section 3 describes the data we use in our empirical analysis. Section 4 explains the identification strategy, while Section 5 reports the empirical results. Section 6 concludes.

2 Background

The economy of the Occupied Palestinian Territories (OPT) – which comprise the West Bank and the Gaza Strip – has always been strictly dependent on the Israeli one. In 2006, just after

the end of Second Intifada, Israel was the main trade partner of the OPT, with around 70% of Palestinian imports coming from Israel. At the same time, almost 15% of Palestinian workers were commuting daily to jobs in Israel. Given this strict dependence, it is not surprising that the security measures put in place by the Israeli Defense Force (IDF) (such as border closures, internal mobility restrictions, the Separation Wall,[1] and increased controls for Palestinian imports and export at ports and borders) have a significant impact on the OPT economy (PALTRADE 2010; Calì and Miaari 2018; Amodio and Di Maio 2017). This is the case for both the West Bank and the Gaza Strip. After Hamas' victory in the 2006 elections, Israel imposed a complete blockade on the latter. Since then, the two territories have started to diverge in economic and political terms (Etkes and Zimring 2015).

Among the security-motivated measures adopted by the Israeli government, the enforcement of the dual-use list is of particular importance. Dual-use goods are materials or final goods that are intended for civilian use, but also have military applications. As such, trade of dual-use goods is subject to particular international restrictions. The control of the export, transit, and brokering of dual-use goods and of the technologies to manufacture them is a key instrument contributing to international peace and security and is regulated by several international treaties.[2] These derive from international obligations (UN Security Council Resolution 1540, the Chemical Weapons Convention, and the Biological Weapons Convention) and are in line with commitments agreed upon in multilateral export control regimes.[3]

Israeli restrictions on the transfer of certain dual-use chemicals to the OPT were first introduced in 1976. The military order 653 restricted access of mixed fertilizers with high proportion of ammonium nitrate, herbicides, and aluminium powder (Abed 2015). The military order 1252 of 1988 introduced the requirement of a general, specific, or personal permit to import all merchandise defined as all possessions including agricultural products (Drury and Winn 1992).

It was not until the Defense Export Control Law of 2007 (5766-2007) that this class of import controls and their enforcement was given a proper regulatory framework and became systematic. The corresponding bill was adopted and enacted by the Israeli Parliament on December 31, 2007. As part of this law, an official dual-use list was approved by the Israeli Ministry of Defense. The list includes 56 items.[4] Since Israel controls all the international trade activity of the OPT, the regulation applies to all imports independently from the country

[1]The Separation Wall is a separation barrier between Israel and the West Bank. The Wall was started to be built in 2002 as an instrument to stop the terrorist attacks inside Israel during the Second Intifada. Its construction has continued - with different phases - until 2012, with 62% of the project completed.

[2]These are the Wassenaar Arrangement , the Australia Group, the Nuclear Suppliers Group, and the Missile Technology Control Regime (MTCR).

[3]http://ec.europa.eu/trade/import-and-export-rules/export-from-eu/dual-use-controls/ [consulted on May 15, 2016].

[4]See Section A.7 in the Online Appendix for the full list. The list is excerpted from the Defense Export Control Order 2008 (Controlled Dual-Use Equipment Transferred to Areas under the Palestinian Authority Jurisdiction), last updated on August 2, 2009. Minor amendments were made to this list between 2009 and 2012.

of origin.

The entry of the materials included in the dual-use list is strictly monitored by the Trade and Industry Department of the Civil Administration (TIDCA). The control system requires Palestinian importers to obtain a license in order to import goods included in the list. The license application process must be repeated for every transaction of dual-use goods, even for the same import category. The average time to receive a license is from a minimum of four weeks up to eight weeks, and each license lasts 21 days (TIDCA 2012). It follows that, while formal authorization to import dual-use goods can be obtained, the process is extremely burdensome and slow, implying that, in effect, the goods are banned (ARIJ 2011).

The Israeli dual-use list for the West Bank is unusually extensive compared to the internationally agreed one. The list includes chemicals, fertilizers, raw materials for industry, steel pipes, lathe and milling machines, optical equipment, and navigation aids. Anecdotal evidence indicates that most Palestinian sectors are affected by the dual-use list, especially food and beverages, pharmaceuticals, textiles, information technology, agriculture, and metal processing (World Bank 2013).

A few examples help illustrate the negative impact of the dual-use list on the manufacturing sector.[5] National Aluminum and Profile Company (NAPCO) is a leading industrial aluminum firm. Before the dual-use list was issued, NAPCO was exporting about ten truckloads of aluminum to Israel on a monthly basis. Due to the trade restrictions imposed on imports of production inputs essential for aluminum anodizing (oxidizations) and nitration, NAPCO was forced to complete the required processing steps in Israel. As a result, it faced large extra costs per shipment.[6] To compensate for these extra costs of transportation and processing, NAPCO was under pressure to reduce its output and/or labor costs, i.e. cut wages. Pal Karm Company for Cosmetics is a leading industrial cosmetics Palestinian firm. It produces both for the local and Israeli market. The dual-use list banned the import of glycerine, an essential input for the production of cosmetics. Since then, Pal Karm has not able to sell skincare products in Israel because the Israeli Health Authorities require glycerine to be part of such products. Between 2008 and 2010, the company estimates a 30% drop in exports of glycerin-based products to Israel.

3 Data and Measurement

Sectors and Firms In the first part of the analysis, we study the impact of the dual-use list on the manufacturing sector in the OPT. The data belong to the Palestinian Industry Survey,

[5]The following two cases are reported in ARIJ (2011).

[6]Extra costs of every 400 kg of shipment are estimated at NIS 25,800 for aluminum anodizing and NIS 6,464 for nitration.

a yearly survey of a representative sample of Palestinian manufacturing establishments designed and administered by the Palestinian Central Bureau of Statistics (PCBS). The sample for our analysis is a repeated cross-section of about 33,000 establishments surveyed in both the West Bank and the Gaza Strip over the years 1999 to 2012. The data provide information on the ISIC 4-digit sector of economic activity each establishment belongs to.[7] We aggregate the establishment-level data at the 4-digit sector and track the evolution of output, prices, and wages in each sector over time. Our final dataset contains information on more than 100 manufacturing sectors from 1999 to 2012.[8]

A crucial component of our empirical analysis is a measure capturing the extent to which each manufacturing sector relies on dual-use inputs in production. We start by identifying for each item in the dual-use list its corresponding 10-digit Foreign Trade Harmonized (HS) product code. This is the finest product-level classification available in trade. We then use the U.S. Bureau of Economic Analysis (BEA) correspondence table to link the HS codes to the 2002 U.S. Input-Output Commodity (IO) codes. Using the BEA Input-Output matrix, we calculate for each commodity i its intensity in dual-use inputs as

$$d_i = \frac{\sum_j b_j \, v_{ij}}{\sum_j v_{ij}} \tag{1}$$

where v_{ij} is the value of input j that is directly and indirectly required to deliver a dollar of the commodity i to final users, and b_j is an indicator equal to one if any of the dual-use list items belongs to the input j commodity code. d_i is equal to the value share of dual-use inputs used to deliver one dollar unit of commodity i: the higher is the value share of dual-use inputs in production, the higher is d_i. We then assign 4-digit ISIC codes to each commodity i, and finally calculate the intensity in dual-use inputs for sector s by taking the average of d_i across all commodities within each 4-digit sector s, meaning

$$m_s = \frac{1}{n_s} \sum_{i \in s} d_{is} \tag{2}$$

where n_s is the number of commodities i delivered by sector s. The value of m_s is between 0 and 1 by construction. It captures the average value share of dual-use inputs used to deliver a commodity in sector s. Table 1 shows a list of the bottom and top 10 sectors according to this measure of dual-use input intensity.

There are several reasons why we use the U.S. Input-Output matrix to construct our measure of dual-use input intensity by sector. First, a corresponding table for the Palestinian economy exists for 2004, but data are already aggregated at the sectoral level, and not available for all

[7] This information is not available for the year 2011, so we do not include establishments surveyed in that year in our final sample.

[8] Table A.1 in the Online Appendix shows the summary statistics for all the variables we use in the empirical analysis.

4-digit ISIC codes. In contrast, the U.S. table is available at a much finer level, allowing us to separately identify the different items in the dual-use list as separate commodities and improve the precision of our measure. Second, and more importantly, the choice of taking the U.S. economy as benchmark rules out any immediate concern about endogeneity in the input-output production structure. Indeed, 2004 is during the Second Intifada, and the conflict situation is likely to affect bilateral flows between sectors. Finally, notice that any discrepancies between the U.S. and Palestinian Input-Output matrix would make it harder for our measure to have any explanatory power, thus biasing the results against finding any effect of the dual-use list.

Local Labor Markets As a second step, we focus on the labor market, and derive a measure of local employment concentration in dual-use input intensive sectors. We do so by combining the measure m_s of dual-use input intensity at the sector level with information on the composition of employment in each locality. Once again, we need to rule out the possibility that our measure is itself affected by the issuance of the dual-use list. We thus consider as benchmark the composition of employment in each locality as recorded in the 1997 Population Census. This is three years prior to the beginning of the Second Intifada, and a period of relative peace that followed the Oslo agreement of 1993. We regard the distribution of economic activity across localities in that year as exogenous to the conflict that followed, and the issuance of the dual-use list eleven years later.

We use a confidential version of the 1997 Population Census that contains information on the sector of employment of each individual.[9] This information is available for 508 localities (out of 557 in total) in the West Bank and the Gaza Strip. We compute locality-level employment concentration in dual-use input intensive sectors as

$$m_l = \sum_s \frac{L_s^l \, m_s}{L^l} \tag{3}$$

where L^l is the total number of workers in locality l in 1997, and L_s^l is the number of those employed in sector s. m_s is our previously derived measure of intensity in dual-use inputs at the sector level. m_l is higher if a larger share of workers in locality l is employed in 1997 in those sectors that use dual-use inputs more intensively in production.

To track local labor market outcomes across localities, we use Palestinian Labor Force Survey data for the years 1999 to 2012. Not all localities are surveyed in each year. Yet, almost 30% of them are surveyed consistently in all years from 1999 to 2012, 50% of them are surveyed for more than 8 years, and the rest of localities are surveyed at least once during the same period. The original microdata do not provide information on the locality of residence of the

[9]This information is provided at the ISIC 2-digit sector instead of the ISIC 4-digit sector. We use data from the Industry Survey from 1999 - the last survey before the beginning of the Second Intifada - to calculate an employment-weighted measure m_s of intensity in dual-use inputs in each 2-digit sector.

respondent. To overcome this limitation, we use a confidential version that aggregates information at the locality-year level. We use data on the average daily wage earned by (employed) respondents in the locality, the average number of working days in a month, the number of employed and unemployed respondents, plus those out of the labor force.[10]

Political Violence We derive information on political violence at the locality level from the Integrated Crisis Early Warning System (ICEWS) dataset (Shilliday, A. and J. Lautenschlager 2012). Developed by the Lockheed Martin Advanced Technology Laboratories, these data have been recently made publicly available and cover the period from 1995 to 2015. They are built upon an original repository containing nearly 30 million world-wide news stories published by over 6,000 international, regional, national, and local news publishers. These stories are used to produce a set of over 19 million unique geolocated events with an accuracy greater than 80%. The final dataset records any event of interaction between socio-political actors across all countries in the world (i.e., cooperative or hostile actions between individuals, groups, sectors, and nation states). Each entry provides information on the source and target of each interaction. Events are assigned to specific categories using the Conflict and Mediation Event Observations (CAMEO) classification (Schrodt and Yilmaz 2007). Each one of these categories is assigned an *intensity* variable using a scale from -10 to 10 (from most hostile to most cooperative).

We build our panel dataset of political violence at the locality level as follows. In order to be consistent with the time period covered in our other data sources, we keep all events occurred between 1999 and 2012 in the OPT. We only keep those events that are classified as *hostile*, meaning having intensity value from -10 to -1. We then classify each event as violent or non-violent.[11] To capture all and only events of political violence caused by Palestinian civilians, we exclude all those events where the government or related entities (such as the Palestinian police) are identified as the source.[12] We also keep only events where the target actor belongs to either the OPT or Israel. Our final dataset counts 18,659 events of political violence between 1999 and 2012 in the OPT. The most frequent event types are: use of unconventional violence (29%), fighting with small arms and light weapons (22%), and use of conventional military force (12%). Table A.15 in the Online Appendix summarizes the frequency of the ten most common event types. Events target both Israelis and Palestinians. In the West Bank, the share of events targeting Israelis is 40% while in the Gaza Strip is 50%. The most frequent actors are: Hamas (16%), citizens (16%), militants (14%), and armed gangs (14%). We geographically match each event to the closest Palestinian location, and sum them at the locality and year level. This allows us to track the evolution of political violence in each locality over time.

[10]The sum of employed, unemployed, and out of the labor force individuals gives the total number of surveyed individuals in each locality in each year. We divide the latter by the size of the locality population reported in the 1997 Population Census to derive sampling probabilities.

[11]See Table A.14 in the Online Appendix for the details of our classification.

[12]Table A.13 in the Online Appendix shows that results are very similar when keeping those events having the government or related entities as the source.

To investigate the reliability of this novel measure of political violence, we contrast it with the information provided by the Israeli NGO B'Tselem. This organization collects and distributes a complete dataset with information on fatalities related to the Israeli-Palestinian conflict, including the identity of perpetrators and targets.[13] These data are based on a number of sources, validated by several cross-checks, and considered reliable by both Israelis and Palestinians. Several published articles have used this information to derive measures of conflict intensity in the OPT and Israel (Jaeger and Paserman 2008; Mansour and Rees 2012; Amodio and Di Maio 2017). Consistent with the way we processed ICEWS data, we only consider killings of Palestinians and Israelis by Palestinians that occurred in the OPT between 1999 and 2012. We aggregate the number of fatalities recorded by B'Tselem and the number of ICEWS violent events at the level of Palestinian district and year, ending up with a total number of 224 observations.[14] The correlation between the two measures of violence is strong. The *t-statistic* associated with the coefficient of a simple regression of one variable over the other is equal to 9.63. More importantly, the two variables correlate within districts over time. When including the full set of district and year fixed effects in the regression, estimates indicate that one more fatality recorded by B'Tselem is associated with 5.12 more violent events recorded in our dataset, with the corresponding *t-statistic* still being higher than 9. When taking logs, the correlation is equally strong.[15] Perhaps not surprisingly, these correlations are stronger when focusing on the number of ICEWS violent events that are classified as most hostile, meaning having intensity value equal to -10.[16] Figure A.4 in the Online Appendix shows this graphically by plotting the log of ICEWS violent events against the log of fatalities recorded in the B'Tselem dataset.

Taken altogether, evidence shows that the variable we construct from the ICEWS dataset is strongly informative of the level of political violence in the OPT in the period under consideration. More importantly, it highlights the improved granularity of the information provided by ICEWS and the ability of our newly constructed proxy to also capture instances of political violence that do not result in any fatality. Notice also that, given our difference-in-differences approach to identification, measurement error would bias our estimate of the coefficient of interest only if it varied systematically with dual-use input intensity across localities, and differentially so after 2008. There are no reasons to believe that this is the case.

Finally, with the objective of building a proxy for the supply of security in each given lo-

[13] https://www.btselem.org/statistics [consulted on August 24, 2018].

[14] The Occupied Palestinian Territories count 16 districts or governorates. Those in the West Bank are: Jenin, Tubas, Tulkarm, Nablus, Qalqilya, Salfit, Ramallah and Al-Bireh, Jericho, Jerusalem (including Israeli annexed East Jerusalem), Bethlehem and Hebron. Districts in the Gaza Strip are: North Gaza, Gaza, Deir al Balah, Khan Yunis and Rafah.

[15] The coefficient estimate from a log-log specification that includes district and year fixed effects is equal to 0.33, with a *t-statistic* of 5.80.

[16] Table A.14 in the Online Appendix reports our classification of violent events and whether the associated intensity score is equal or higher than -10.

cation, we geo-reference each checkpoint, observation tower, and roadblock within the West Bank in each year. We collect these data using the maps made available by the United Nations - Office for the Coordination of Humanitarian Affairs (UN-OCHA). Consistent information is available from 2004 to 2012.[17]

4 Empirical Strategy

Our approach to identification is a *difference-in-differences*. We compare the evolution of economic and political outcomes across sectors or localities according to their intensity in dual-use inputs, and test whether systematic differences emerge after the issuance of the dual-use list in 2008.

The first step in implementing this strategy is to derive baseline measures of dual-use input intensity that are exogenous to the changes in the economic and political environment that occurred in the period under consideration. The measures at the sector (m_s) and locality (m_l) level that we described in the previous section fulfill this requirement. They are calculated using the U.S. in 2002 and the OPT in 1997 respectively as benchmark economies, and thus do not vary over time. This rules out from the start any concern that variation in these measures is itself informed by the issuance of the list.

The identifying assumption of our difference-in-differences is that, had the list not been issued, the evolution of economic and political outcomes would have not been systematically different after 2008 across sectors and localities that are differentially intensive in dual-use inputs (parallel trend assumption). One first concern with our strategy is therefore that dual-use input intensive sectors and localities could have already been on a differential path before 2008. Evidence shows that this is not the case. As we discuss in Section 5, sectoral and locality-level wages and the number of episodes of political violence are not significantly different before 2008 across sectors and localities that are differentially intensive in dual-use inputs. This is true for any given year before 2008, ruling out the concern that pre-existing differential trends may confound our analysis. Support to the parallel trend assumption also comes from the fact that all our regression results are robust to the inclusion of linear and quadratic trends at both the sector and locality level.

A second concern with our identification strategy is that our measures of dual-use input intensity could be correlated with other characteristics at the sector or locality level which could account for a differential trend in economic and political outcomes after 2008. In particular, dual-use input intensive sectors could also be more intensive in foreign inputs in general, or be more export oriented. If that was the case, our measure m_s would be capturing not only the

[17] Maps are available on the UN-OCHA website https://www.ochaopt.org/.

extent to which each sector is affected by the list, but also heterogeneity in exposure to trade shocks in general (the 2008 Great Recession being one of them). We address this concern by deriving two measures of trade intensity. We calculate foreign input intensity f_s by dividing the total value of foreign-produced materials used in production in each sector by its total value of output in 2000 (the first year for which separate information on foreign-produced materials is available in the data). Likewise, we calculate export intensity e_s by dividing the total value of external sales in each sector by its total value of output in 2000. The correlation of m_s with f_s and e_s is equal to 0.07 and 0.14 respectively, both insignificant. This indicates that variation in dual-use input intensity does not overlap with variation in trade exposure at the sector level. Similarly, Figure A.1 in the Online Appendix shows the geographical distribution of employment concentration in dual-use input intensive sectors at the locality level. We do not identify any particular geographical pattern, meaning that we do not find those localities with a higher concentration of employment in dual-use input intensive sectors to be clustered in particular areas. Perhaps more importantly, Table A.2 in the Online Appendix shows that the measure of intensity is also uncorrelated with a number of baseline locality-level characteristics which could confound our analysis.[18]

A third possible concern with our identification strategy is that the exact composition of the dual-use list could have been informed by specific strategic military considerations. By limiting access to inputs with military applications, the list meant to increase their cost and thus decrease the incidence of political violence. Our argument leads to the opposite prediction. We argue that, as a result of the list, output and wages decrease relatively more in those sectors that use dual-use materials as inputs, decreasing the opportunity cost and increasing the incidence of political violence. In this respect, the concern that the list is primarily issued for security reasons would go against our reasoning and make it harder to find that the list increases political violence.

It could also be the case that the composition of the dual-use list was motivated by economic considerations. On the one hand, the Israeli government could have chosen the list of goods subject to import restrictions with the objective of hurting specific sectors of the OPT economy that were either on the rise or declining. On the other hand, the composition of the list could have been engineered to curtail more severely the economy of those areas where political violence was more prevalent or on the rise (Benmelech, Berrebi, and Klor 2010). The several pieces of evidence supporting the parallel trend assumption discussed in Section 5 make us confident that this is not a concern for our analysis.

A final concern with our empirical strategy is that political violence may not be independent across localities. Specifically, violence perpetrators may travel from one locality to another, or

[18] We derive baseline characteristics for the 187 localities that are surveyed in the 1999 Labor Force Survey and estimate the coefficient of a simple regression of the measure of dual-use input intensity m_l over each corresponding variable.

strategically coordinate their actions. This legitimate concern is less compelling in the case of the West Bank, where spatial mobility is limited (Abrahams 2018; World Bank 2007). Still, we explicitly address this point and show that our results are robust to the inclusion of spatial lags and to the number and type of internal mobility restrictions imposed by the Israeli Defense Force (IDF).

5 Results

5.1 Sectors and Firms

We start by comparing the evolution of economic outcomes across sectors according to their production intensity in dual-use inputs. We implement the following regression specification

$$y_{st} = \delta_t + \gamma_s + \beta\, m_s \times \textit{Post2008}_t + u_{st} \tag{4}$$

where y_{st} is the outcome of sector s in year t. Year fixed effects δ_t capture and control for overall trends in economic activity. Sector fixed effects γ_s net out time-invariant differences across sectors. Our variable of interest is the interaction term, where m_s is the sector-level measure of intensity in dual-use inputs and $\textit{Post2008}_t$ is a dummy equal to one for all observations belonging to year 2008 and after. u_{st} accounts for all residual determinants of the dependent variable. We cluster standard errors at the sector level in order to take into account the possibility of serial correlation of residuals within sectors. Our coefficient of interest is β: it captures whether differences in production intensity in dual-use inputs map systematically into differences in sector-level outcomes, differentially so after the implementation of the dual-use list in 2008.

Table 2 shows the corresponding coefficient estimates using data from the West Bank. In column (1), the dependent variable is the log of output value. The estimated β is negative and significant at the 5% level. Evidence shows that those sectors that are more intensive in dual-use inputs experience a differential loss in output value after the issuance of the list. The estimate is such that moving from the 25^{th} to the 75^{th} percentile of our measure of intensity in dual-use inputs (from value 0.014 to 0.17) leads to an 11% differential loss in output value. In the second column, we restrict our sample to those sectors for which price information is available, finding very similar results. We do this in preparation for the results in columns (3) and (4), where we use as dependent variable the log of producer price at the sector level, and physical output as given by the ratio between output value and price. The coefficient of interest in the price regression is positive but insignificant, suggesting that the elasticity of demand in the affected sectors is very high. This is confirmed by the fact that, when having physical output as dependent variable in column (4), the estimated β is negative, significant at the 1% level and comparable to the one in column (1). This result is consistent with the existing

empirical evidence in international trade showing that access to foreign inputs increases firm productivity (Schor 2004; Amiti and Konings 2007; Kasahara and Rodrigue 2008; Topalova and Khandelwal 2011). Finally, in column (5) we use the log of wages paid in each sector as dependent variable. The estimated β doubles in magnitude and is significant at the 1% level. It implies that moving from the 25^{th} to the 75^{th} percentile of our measure of dual-use input intensity leads to a 22% differential fall in sectoral wages.

5.1.1 Wage Effect Through Time

Evidence shows that dual-use input intensive sectors pay differentially lower wages after 2008. Our claim is that this is the result of the issuance of the dual-use list. If this is the case, we should not observe any difference in wage patterns according to intensity in dual-use inputs in the years prior to 2008. Figure 1 plots the estimated coefficients of the interaction of the dual-use input intensity measure m_s with the full set of year dummies from the years 2004 to 2012.[19] We do not find evidence of a significant differential trend in wages paid in dual-use input intensive sectors before 2008.[20] The differential negative effect of the list is highest in 2009 and 2010, and becomes insignificant in 2012.

These results indicate that the negative effect of the dual-use list may take some months to materialize. At the same time, the effect does not last long and fades away in the medium term. There are several possible explanations for this result. First, the point estimates in Figure 1 capture a differential effect across sectors. If labor is traded in a centralized market, wages paid in other sectors will adjust over time and differences across sectors will disappear. Second, the list could have an impact on the extensive margin, and force out of business those firms within sectors with the highest intensity in dual-use inputs.[21] Third, firms may learn how to cope with and overcome import restrictions by changing their production technology and relying on other inputs in production.

5.1.2 Trade and Dual-use Output Intensity

As a robustness check for our results, we also control for and net out any differential change across sectors according to their trade intensity. We include as additional regressors the measures of foreign input intensity f_s and export intensity e_s, both interacted with the $Post2008_t$ dummy. Table 3 shows the corresponding results. The estimated coefficient of our variable of interest $m_s \times Post2008_t$ becomes higher in magnitude and remains highly significant. This

[19] As explained in Section 3, we exclude the year 2011 from our analysis as no information on the ISIC 4-digit sector of activity is available for that year.

[20] Table A.3 in the Online Appendix also shows that including linear and quadratic sector-specific trends does not affect the results.

[21] We are unable to look at firm exit as outcome because our firm-level dataset is a repeated cross-section and not a panel.

indicates that the differential loss in output and wages that we observe in dual-use input intensive sectors is not driven by concurrent trade-related shocks, but is the result of the issuance of the dual-use list. A somewhat related concern is that the restrictions imposed on imports of dual-use materials could increase the internal demand for dual-use inputs and thus benefit dual-use input producers in the West Bank. If *output* and *input* intensity in dual-use materials were negatively correlated across sectors, our estimates in Table 2 could be capturing a differential positive effect of the banning on dual-use *output* intensive sectors rather than a differential negative effect on dual-use *input* intensive sectors. Yet, the correlation between output and input intensity in dual-use materials is positive in the data, equal to 0.92, and highly significant. This rules out the possibility that our estimates are capturing a positive differential effect of the dual-use list on dual-use output intensive sectors.[22]

5.1.3 Gaza Strip as Placebo

Given that a strict complete blockade was enforced in the Gaza Strip from 2007 to 2010, we have no reason to expect intensity in dual-use inputs to be correlated with a differential evolution of economic outcomes in this region after 2008. Therefore, implementing the same regression specification to test for an impact of the dual-use list on economic activity in the Gaza Strip works as a placebo exercise. Table A.4 in the Online Appendix shows coefficient estimates when restricting the sample to the Gaza Strip. None of them is significant. In the case of wages, the point estimate is insignificant, positive and very small in magnitude.

Taken all together, results from this section show that the issuance of the dual-use list has a negative impact on the economic activity of those sectors in the West Bank whose production technology is more intensive in dual-use inputs. With these estimates in hand, we can calculate the percentage loss in aggregate output value attributable to the policy. Setting the value of the coefficient of interest equal to zero, we predict the value of output in each sector that we would have observed in the absence of the dual-use list. We find that, in the West Bank, aggregate output value would have been 4.6% higher in the period 2008 to 2012 in the absence of the dual-use list.[23]

[22] We calculate our measure of output intensity in dual-use materials by identifying every item in the dual-use list as a separate 10-digit HS product code. We then consider all commodities to which any of these dual-use product codes belong, and calculate dual-use output intensity as the share of these dual-use commodities i within each 4-digit sector s. When we replace m_s with this measure, results are the same (available upon request).

[23] We quantify the percentage loss in aggregate output value as follows. We use the coefficient estimates in column (1) of Table 2 to predict the value of output $\hat{y}_{st}$ in each sector and year. We also predict the value of output $\tilde{y}_{st}$ that we would have observed if $\beta = 0$, i.e. $\tilde{y}_{st} = \hat{y}_{st} - \hat{\beta}\, m_s \times \textit{Post2008}_t$. We then aggregate both values across sectors and years for the period 2008 to 2012 to get $\widehat{Y} = \sum_{t=2008}^{2012} \sum_s \hat{y}_{st}$ and $\widetilde{Y} = \sum_{t=2008}^{2012} \sum_s \tilde{y}_{st}$. The estimated increase in aggregate output value in the absence of the policy is given by $(\widetilde{Y} - \widehat{Y})/\widehat{Y}$.

5.2 Local Labor Markets

To analyze the effect of the dual-use list on local labor markets, we implement the following regression specification

$$y_{lt} = \delta_t + \gamma_l + \beta\, m_l \times \textit{Post2008}_t + u_{lt} \tag{5}$$

where y_{lt} is the outcome of locality l in year t. Year and locality fixed effects - δ_t and γ_l - net out overall trends and time-invariant differences across localities respectively. Our variable of interest is again the interaction term, where m_l is the locality-level measure of employment concentration in dual-use input intensive sectors, and $\textit{Post2008}_t$ is a dummy equal to one for all observations belonging to year 2008 and after. u_{lt} captures residual differences across localities and years. We again take into account the serial correlation of residuals over time by clustering the standard errors at the locality level.

We first consider as outcome the average daily wage in the locality, which is now the unit of observation. The estimation sample comprises all localities that are part of the Palestinian Labor Force Survey. As explained in Section 3, almost 30% of all localities are surveyed in all years from 1999 to 2012, while the rest of localities are surveyed at least once during the period. Given that our *treatment* is at the locality level, and the outcome variable is averaged across surveyed employed individuals in the locality, we can recover individual-level estimates by weighting each locality observation with the number of employed respondents.[24] Column (1) of Table 4 reports the estimated β from the baseline specification. This is negative, but only significant at the 12% level. To improve the estimate's precision, we net out part of the residual variation in average wage by including as regressors the employment shares at the industry level (agriculture, manufacturing and construction, services). To the extent to which the issuance of the dual-use list does not lead to reallocation of labor across industries within localities in the short term, these employment shares are valid controls. The estimate of β in column (2) becomes significant at the 5% level, and is comparable in magnitude with the one in column (1). In column (3), we account for differential trends across localities by including quadratic locality-specific trends. The estimated β becomes bigger in magnitude and significant at the 10% level. In column (4), we control for the presence of checkpoints, observation towers, and roadblocks within 0.05 degrees (5.5 km approximately) from the locality.[25] The estimated β is close to the one in column (2), still significant at the 10% level. Finally, in column (5) we replace the log of average daily wage as dependent variable, showing qualitatively similar results.

[24] As anticipated in Section 3, we further adjust weights to take into account sampling probabilities.

[25] Abrahams (2018) and Calì and Miaari (2018) show that these obstacles inhibit labor mobility and have an independent effect on wages. As explained in Section 3, information on mobility restriction is provided by UN-OCHA for the years 2004 to 2012. Therefore, the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003.

These results indicate that wages are differentially lower after 2008 in those localities where employment is more concentrated in dual-use input intensive sectors. If this is the results of the issuance of the dual-use list, we should not observe any differences in daily wages according to dual-use input intensity in the years prior to 2008. Figure 2 shows that this is the case. It plots the coefficients of the dual-use input intensity variable interacted with year dummies: the pattern of estimates' significance mirrors exactly the one of wages across sectors depicted in Figure 1. As before, point estimates become insignificant after 2010. In theory, this would be consistent with spatial arbitrage across locations in a general equilibrium framework with sufficiently high labor mobility. In practice, spatial labor mobility is severely restricted in this setting (Calì and Miaari 2018; Abrahams 2018). It follows that the adjustments within and across sectors mentioned in the discussion of Figure 1 are better candidates to explain the pattern in Figure 2. As a robustness check for our results, similarly to what we did for the sector-level analysis in Section 5.1, we use Gaza Strip as a placebo test. Table A.5 in the Online Appendix shows that there is no evidence of systematic differences in wages after 2008 across localities in the Gaza Strip.

The estimates in Table 4 imply that moving from the 25^{th} to the 75^{th} percentile of the locality-level measure of intensity in dual-use inputs (from value 0.004 to 0.045) leads to a 1% differential decrease in average daily wages. While this appears to be a small effect, it considers only the first moment of the wage distribution. The previous section shows that the effect of the dual-use list on wages is concentrated among individuals who are employed in dual-use input intensive sectors. Ignoring labor reallocation across sectors, an average wage change of 1% would be consistent with a situation where 4.2% of the workforce is employed in a sector that is in the 75^{th} percentile of the the sector-level dual-use input intensity distribution while all other workers are employed in sectors with zero dual-use input intensity.[26]

Tables A.6 and A.7 in the Online Appendix report estimates from the same specification as in equation 5, but focus on other locality-level labor market variables as outcome. They show some evidence of a differential increase in unemployment and a decrease in average monthly days of work after 2008 in localities where employment is more concentrated in dual-use input intensive sectors. Although the sign of coefficient estimates is consistent across specifications (unlike those for the Gaza Strip in Tables A.8 and A.9), these are rarely significant. Still, we interpret this as suggestive additional evidence that local labor market conditions worsen differentially in dual-use input intensive localities in the West Bank after 2008.

[26]The coefficient estimate in column (5) of Table 2 shows that wages fall by 24% in sectors in the 75^{th} percentile of the the sector-level dual-use input intensity distribution ($m_s = 0.17$). If 4.2% of the workforce is employed in such sector and all other workers are employed in sectors with zero dual-use input intensity the average wage fall in the locality is equal to $0.042 \times 0.24 = 0.01$.

5.3 Political Violence

In the last step of our analysis, we identify the effect of the dual-use list on political violence. We implement the same specification as in equation 5, but replacing as outcome y_{lt} the total number of events of political violence in the locality in the year.

Table 5 shows the corresponding coefficient estimates. Our dependent variable counts the number of episodes of political violence in all localities and years from 1999 to 2012. We explicitly take into account the count nature of the outcome variable by implementing first a fixed-effects negative binomial regression specification.[27] In column (1), we implement the baseline specification where only locality and year fixed effects are included, together with the interaction variable of interest. The estimated coefficient of the latter is positive and significant at the 5% level. Its magnitude increases when we include quadratic locality-specific trends in column (2), still significant at the 5% level. As we did for the analysis of the impact on the locality-level wages, in column (3) we include as controls the number of checkpoints, observation towers, and roadblocks in the vicinity of the locality. These variables are meant to proxy for the supply of security by IDF in the location and its surroundings. The estimated β becomes somewhat higher and significant at the 1% level. In column (4), we show that results are robust to implementing a linear fixed-effects regression specification: the estimated coefficient of the interaction variable of interest remains significant at the 5% level. Finally, in column (5), we replace the log of number of events (augmented by 1) as dependent variable, obtaining similar and significant results.

According to the estimated coefficient in column (1) of Table 5, moving from the 25^{th} to the 75^{th} percentile of our measure of intensity leads to a 0.22 increase in the number of violent events per year: a 23% increase over the mean. Setting the value of the interaction term equal to zero, we can predict the number of events per locality in each year that we would have observed if the trend in political violence had never diverged across localities after 2008. Our calculations indicate that the effect of the dual-use list policy accounts for 15.7% of the total number of violent events in the West Bank in the period 2008 to 2012.[28]

Results indicate that episodes of political violence are differentially more likely to occur after 2008 in those localities where employment is more concentrated in dual-use input intensive sectors. Our claim that this is the effect of the issuance of the dual-use list. Figure 3 further

[27] The negative binomial model is appropriate as it takes into account overdispersion in the dependent variable. Specifically, we follow Allison and Waterman (2002) and use an unconditional negative binomial regression estimator with dummy variables to represent the fixed effects. Those localities with zero episodes of political violent in all years throughout the period are automatically dropped from the estimation sample.

[28] Similarly to what we did for aggregate output value, we calculate this number as follows. We use the coefficient estimates in column (1) of Table 5 to predict the number of violent political events $\hat{y}_{lt}$ in each locality and year. We also predict the value $\tilde{y}_{lt}$ that we would have observed if $\beta = 0$, i.e. $\tilde{y}_{lt} = \hat{y}_{lt} - \hat{\beta}\, m_l \times \textit{Post2008}_t$. We then aggregate both values across localities and years for the period 2008 to 2012 to get $\widehat{Y} = \sum_{t=2008}^{2012} \sum_l \hat{y}_{lt}$ and $\widetilde{Y} = \sum_{t=2008}^{2012} \sum_l \tilde{y}_{lt}$. The estimated fraction of events attributable to the policy is given by $(\widehat{Y} - \widetilde{Y})/\widehat{Y}$.

supports this claim by plotting the coefficients of the dual-use input intensity variable interacted with the full set of year dummies for the period 2004-2012. It shows no evidence of a significant differential trend before 2008. All point estimates are insignificant and mostly negative. In contrast, they are positive for all years after 2008, and significant for 2010.

Taken altogether, the results reported in Tables 2, 4, and 5 indicate a significant negative differential effect of the dual-use list on wages across sectors and localities, and a significant positive effect on political violence. In particular, Figures 1, 2, and 3 document a differential decrease in sectoral and locality wages in 2009 and 2010, and an increase in political violence in 2010. This indicates that political violence increases differentially when wages decrease, but the effect disappears once the shock dissipates. It also suggests that the link between worsening labor market economic conditions and political violence does not materialize immediately, as individuals may find ways to compensate for the initial wage loss (i.e. use of savings, formal and informal borrowing, etc.). Overall, we regard the pattern emerging from this set of results as remarkably consistent, especially considering that they were produced using three completely independent datasets.

5.3.1 Robustness Checks

Table A.10 and Figure A.2 in the Online Appendix show that the implementation of the dual-use list has no differential effect on political violence across localities in the Gaza Strip. This is expected since the Gaza Strip starting from 2007 was subject to a strict complete blockade and therefore the selective import restrictions imposed by the dual-use list in 2008 do not apply. This is in line with the results from the previous sections and corroborates once again the validity of our identification approach.

One possible concern with our analysis is that the list and its composition were informed by the objective of restricting access to dual-use inputs in those localities where violence was already on the rise before 2008. The evidence in Figure 3 suggests that this is not the case. We nonetheless formally test this hypothesis by including in the main regression specification the interaction between the locality-level measure of dual-use input intensity m_l and a dummy taking value 1 for observations belonging to 2006 and 2007. If the trend in political violence was already diverging systematically before 2008, the estimated coefficient of this additional interaction term would be positive and significant. Table A.11 in the Online Appendix shows that this is not the case. The estimated coefficient is small in magnitude and insignificant in all three regression model specifications.

Another concern is that violence in one locality may be affected by economic conditions in neighboring localities. We examine the relevance of this issue by including in our main regression specification the spatial lag of our independent variable. That is, we include as

additional regressor the average dual-use input intensity in the n localities that are closest to the one of observation, interacted with the $Post2008_t$ dummy. Table A.12 in the Online Appendix reports the coefficient estimates produced across different choices of n. The magnitude of the estimated coefficient of interest is not affected while significance is retained.

Finally, we evaluate the robustness of the results using the tools of randomization inference (Fisher 1935; Rosenbaum 1996). These methods let inference be based on the empirical distribution of the coefficient rather than on the asymptotic properties of the estimator. We do this by assigning the actual values of dual-use input intensity in our sample at random to West Bank locations. For each random assignment, we implement the specification in column (1) of Table 5 and obtain the corresponding estimate of the coefficient of interest. We do this 200 times. Figure A.3 in the Online Appendix plots the distribution of the estimate obtained across all these repetitions. The empirical distribution is centered at zero as expected: when imputing its values to locations at random, we expect dual-use input intensity not to correlate with divergent trends in political violence after 2008. The vertical straight line corresponds to the baseline coefficient estimate in column (1) of Table 5. The estimate is clearly in the right tail of the empirical distribution. This indicates that the probability that sampling variability is driving our results is very low.

5.3.2 Effect Heterogeneity

The richness of the information contained in our political violence dataset allows us to dig deeper into the relationship between the dual-use list and political violence in the West Bank. First, we test whether the economic shock associated with the dual-use list increases the violent activity of non-organized offenders as much as organized groups like, for example, Hamas. To distinguish between the two, we consider only those violent acts whose perpetrator is not identified as a political party or religious group or criminal gang. There are 5,914 such episodes in the West Bank, almost 60% of the total. This by itself indicates that the majority of violent acts in the West Bank are not perpetrated by organized groups. Columns (1) and (2) of Table 6 show that violence perpetrated by non-organized actors increases differentially in dual-use input intensive localities after 2008. This suggests that the wage loss associated with the policy might have drawn into conflict individuals who do not belong to any organization and were not engaged in violence before. This result also mitigates the concerns that violent acts are centrally planned and their location strategically chosen, which would generate spatial dependence in our variables of interest. Indeed, individuals that do not belong to organized groups are less likely to centrally coordinate their actions with others.

Second, the estimates in columns (3) to (6) of Table 6 show that the effect of the dual-use list on political violence is significant for both the most and the least violent hostile events (i.e., with intensity score respectively equal to and higher than -10). The former include killings,

assassinations, suicide attacks, and fighting with conventional military force. This indicates that the policy does not induce substitution away from high-intensity violence towards low-intensity one, but rather increases both.

Third, we ask whether the main effect is due to an increase in violence against Israel as the policy implementer. Increased hatred against Israel would be associated with more violent acts targeting Israeli civilians and government. Columns (7) to (10) of Table 6 consider violence against Israeli and OPT targets separately. In the case of violence against Israel, the coefficient estimate from the negative binomial specification is significant only at the 13% level, but is highly significant when running OLS. When considering OPT targets only, estimates are highly significant, and their magnitude is almost three times bigger than the one for violence against Israeli targets. These results suggest that the differential increase in violence associated with the dual-list did not materialize only through increased hatred against Israel, and that the policy has a destabilizing effect on the West Bank and its government.

6 Conclusion

This paper documented that security-motivated trade restrictions can end up increasing political violence. Results show that the import restrictions of dual-use goods and materials imposed by Israel on the West Bank in 2008 led to lower output and wages for those sectors that use those materials more intensively as production inputs. Local labor market conditions worsened differentially in localities where employment is more concentrated in these sectors, and episodes of political violence were more likely to occur in those same localities.

Our findings are policy relevant in that they reveal the conditions under which trade-related security policies can increase the supply of political violence. When assessing the external validity of our results, the following considerations apply. First, our argument and results focus on labor as the most important input in the generation of violence. Economic hardship leads to more violence, differentially so according to the production structure of economy and the allocation of employment across sectors. This is not necessarily the case if a significant amount of resources other than labor (such as capital) are used in generating violence, as the availability of these other inputs may decrease when economic conditions deteriorate. Second, our research design compares sectors and localities that were all affected by the policy, but to a different extent. It is therefore unsuitable to produce an overall assessment of the aggregate benefits and costs of the dual-use list policy. Still, our analysis provides direct evidence of the trade-offs involved by showing that such policies can increase violence through their negative impact on manufacturing production and local labor markets. Finally, the choice of the OPT as a case study has the advantage of providing a very tough test for the main hypothesis. Indeed, Israel has one of the most efficient and effective armies in the world, with a long experience in

military controlling a territory. We therefore speculate that the salience of our argument would be even higher in countries with average military capabilities.

References

Abed, G. (2015). *The Palestinian Economy (RLE Economy of Middle East): Studies in Development under Prolonged Occupation*. Routledge Library Editions: The Economy of the Middle East. Taylor & Francis.

Abrahams, A. (2018). Hard Traveling: Commuting Costs and Urban Unemployment with Deficient Labor Demand. Empirical Studies of Conflict Project (ESOC) Working Papers 8, Empirical Studies of Conflict Project.

Allison, P. D. and R. P. Waterman (2002). Fixed-Effects Negative Binomial Regression Models. *Sociological Methodology 32*(1), 247–265.

Amiti, M. and J. Konings (2007). Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia. *American Economic Review 97*(5), 1611–1638.

Amodio, F. and M. Di Maio (2017). Making Do With What You Have: Conflict, Input Misallocation and Firm Performance. *The Economic Journal*. Forthcoming, available at http://dx.doi.org/10.1111/ecoj.12518.

ARIJ (2011). The Economic Cost of the Israeli Occupation for the Occupied Palestinian Territory. Technical report, The Ministry of National Economy and ARIJ, available at http://www.un.org/depts/dpa/qpal/docs/2012Cairo/p2%20jad%20isaac%20e.pdf.

Autor, D. H., D. Dorn, and G. H. Hanson (2013). The China Syndrome: Local Labor Market Effects of Import Competition in the United States. *American Economic Review 103*(6), 2121–68.

Bazzi, S. and C. Blattman (2014). Economic Shocks and Conflict: Evidence from Commodity Prices. *American Economic Journal: Macroeconomics 6*(4), 1–38.

Benmelech, E., C. Berrebi, and E. F. Klor (2010). The Economic Cost of Harboring Terrorism. *Journal of Conflict Resolution 54*(2), 331–353.

Berman, N. and M. Couttenier (2015). External Shocks, Internal Shots: The Geography of Civil Conflicts. *The Review of Economics and Statistics 97*(4), 758–776.

Berman, N., M. Couttenier, D. Rohner, and M. Thoenig (2017). This Mine Is Mine! How Minerals Fuel Conflicts in Africa. *American Economic Review 107*(6), 1564–1610.

Blattman, C. and J. Annan (2016). Can Employment Reduce Lawlessness and Rebellion?

A Field Experiment with High-Risk Men in a Fragile State. *American Political Science Review 1*(110), 1–17.

Blattman, C. and E. Miguel (2010, March). Civil War. *Journal of Economic Literature 48*(1), 3–57.

Brück, T., M. Di Maio, and S. H. Miaari (2018). Learning the Hard Way: The Effect of Violent Conflict on Student Academic Achievement. *Journal of the European Economic Association*. Forthcoming.

Brückner, M. and A. Ciccone (2010). International Commodity Prices, Growth and the Outbreak of Civil War in Sub-Saharan Africa. *Journal of Political Economy 120*, 519–534.

Calì, M. and S. H. Miaari (2018). The Labor Market Impact of Mobility Restrictions: Evidence from the West Bank. *Labour Economics 51*(C), 136–151.

Ciccone, A. (2018). Commodity Prices and Civil War Outbreak: New Evidence. Mimeo, available at http://www.antoniociccone.eu/wp-content/uploads/2017/03/Commodity-price-shocks-and-civil-war-18january2018-with-tables-and-appendices-1.pdf.

Collier, P. and A. Hoeffler (1998). On Economic Causes of Civil War. *Oxford Economics Papers 50*, 563–573.

Di Maio, M. and T. K. Nandi (2013). The Effect of the Israeli-Palestinian Conflict on Child Labor and School Attendance in the West Bank. *Journal of Development Economics 100*(1), 107–116.

Dix-Carneiro, R. and B. K. Kovak (2017). Trade Liberalization and Regional Dynamics. *American Economic Review 107*(10), 2908–46.

Dix-Carneiro, R., R. R. Soares, and G. Ulyssea (2017). Economic Shocks and Crime: Evidence from the Brazilian Trade Liberalization. *American Economic Journal: Applied Economics*. Forthcoming, available at https://sites.googlegroups.com/site/rafaeldixcarneiro/DSU_Crime.pdf.

Drury, R. T. and R. C. Winn (1992). *Plowshares and Swords: The Economics of Occupation in the West Bank*. Beacon Press.

Dube, O. and J. F. Vargas (2013). Commodity Price Shocks and Civil Conflict: Evidence from Colombia. *The Review of Economic Studies 80*(4), 1384–1421.

Durante, R. and E. Zhuravskaya (2018). Attack When the World Is Not Watching? US News and the Israeli-Palestinian Conflict. *Journal of Political Economy 126*(3), 1085–1133.

Ethier, W. J. (1982). National and International Returns to Scale in the Modern Theory of International Trade. *American Economic Review 72*(3), 389–405.

Etkes, H. and A. Zimring (2015). When Trade Stops: Lessons from the Gaza Blockade 2007-2010. *Journal of International Economics 95*(1), 16–27.

Fisher, R. A. (1935). *The Design of Experiments.* Oliver and Boyd.

Getmansky, A., G. Grossman, and A. L. Wright (2018). Border Walls and Smuggling Spillovers. Discussion Paper Series 41, The Pearson Institute, available at https://www.dropbox.com/s/a203l9a77w177cx/GGW_2017.pdf.

Jaeger, D. A. and M. D. Paserman (2008). The Cycle of Violence? An Empirical Analysis of Fatalities in the Palestinian-Israeli Conflict. *American Economic Review 98*(4), 591–1604.

Kasahara, H. and J. Rodrigue (2008). Does the Use of Imported Intermediates Increase Productivity? Plant-level Evidence. *Journal of Development Economics 87*(1), 106 – 118.

Mansour, H. and D. I. Rees (2012). Armed Conflict and Birth Weight: Evidence from the al-Aqsa Intifada. *Journal of Development Economics 99*(1), 190–199.

Martin, P., M. Thoenig, and T. Mayer (2008a). Civil Wars and International Trade. *Journal of the European Economic Association 6*(2/3), 541–550.

Martin, P., M. Thoenig, and T. Mayer (2008b). Make Trade Not War? *The Review of Economic Studies 75*(3), 865–900.

Melitz, M. J. (2003). The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity. *Econometrica 71*(6), 1695–1725.

Miguel, E., S. Satyanath, and E. Sergenti (2004). Economic Shocks and Civil Conflict: An Instrumental Variables Approach. *Journal of Political Economy 112*, 725–753.

Morelli, M. and T. Sonno (2017, September). On economic interdependence and war. *Journal of Economic Literature 55*(3), 1084–97.

PALTRADE (2010). West Bank Crossing Bi-monthly Monitoring Report, June-July. Technical report, PALTRADE, available at http://siteresources.worldbank.org/INTWESTBANKGAZA/Resources/Jun-Jul2010.pdf.

Rosenbaum, P. R. (1996). 6 Observational Studies and Nonrandomized Experiments. In *Design and Analysis of Experiments*, Volume 13 of *Handbook of Statistics*, pp. 181 – 197. Elsevier.

Schor, A. (2004). Heterogeneous Productivity Response to Tariff Reduction. Evidence from Brazilian Manufacturing Firms. *Journal of Development Economics 75*(2), 373 – 396.

Schrodt, P. A. and O. Yilmaz (2007). Conflict and Mediation Event Observations Codebook. Center for International Political Analysis Institute for Policy and Social Research - University of Kansas, available at https://dataverse.harvard.edu/api/access/datafile/1376664.

Shilliday, A. and J. Lautenschlager (2012). Data for a Global ICEWS and Ongoing Research. Technical report, 2nd International Conference on Cross-Cultural Decision Making: Focus 2012, available at https://dataverse.harvard.edu/dataverse/icews.

TIDCA (2012). Inside the Trade and Industry Department. Technical report, The Civil Administration of Judea and Samaria, available at http://www.cogat.mod.gov.il/en/Judea_and_Samaria/Pages/JSIndustryTradeSection.aspx.

Topalova, P. and A. Khandelwal (2011). Trade Liberalization and Firm Productivity: The Case of India. *The Review of Economics and Statistics 93*(3), 995–1009.

World Bank (2007). Movement and Access Restrictions in the West Bank: Uncertainty and Inefficiency in the Palestinian Economy. Technical Report 40445, The World Bank, available at http://documents.worldbank.org/curated/en/964061468339036297/pdf/404450GZ0West0Bank0restrictions01PUBLIC1.pdf.

World Bank (2013). West Bank and Gaza - Area C and the Future of the Palestinian Economy. Technical Report AUS2922, The World Bank, available at http://documents.worldbank.org/curated/en/137111468329419171/pdf/AUS29220REPLAC0EVISION0January02014.pdf.

Tables and Figures

Table 1: Intensity in Dual-use Inputs by Sector

ISIC 4	m_s	Description
		Least Intensive Sectors
1600	0.0001	Manufacture of tobacco products
1532	0.0001	Manufacture of starches and starch products
1543	0.0002	Manufacture of cocoa, chocolate and sugar confectionery
1542	0.0003	Manufacture of sugar
1554	0.0010	Manufacture of soft drinks; production of mineral waters
1549	0.0013	Manufacture of other food products n.e.c.
1553	0.0014	Manufacture of malt liquors and malt
1544	0.0014	Manufacture of macaroni, noodles, couscous, etc.
1520	0.0018	Manufacture of dairy products
1533	0.0020	Manufacture of prepared animal feeds
		Most Intensive Sectors
2720	0.3457	Manufacture of basic precious and non-ferrous metals
1723	0.3614	Manufacture of cordage, rope, twine and netting
3220	0.4102	Manufacture of television and radio transmitters, etc.
2922	0.4142	Manufacture of machine tools
2732	0.4343	Casting of non-ferrous metals
2731	0.4343	Casting of iron and steel
2696	0.4687	Cutting, shaping and finishing of stone
3592	0.4911	Manufacture of bicycles and invalid carriages
2411	0.4930	Manufacture of basic chemicals, except fertilizers and nitrogen compounds
2421	0.5637	Manufacture of pesticides and other agrochemical products

Notes. The Table reports the ten ISIC 4-digit sectors with the lowest and highest value of intensity in dual-use inputs m_s. As explained in Section 3, the value of m_s is between 0 and 1 by construction. It captures the average value share of dual-use inputs used to deliver a commodity in the sector (Sources: BEA).

Table 2: Output, Prices, and Wages across Sectors in the West Bank

	Output Value	Output Value 4-digit PPI	Price	Output	Wages
	(1)	(2)	(3)	(4)	(5)
$m_s \times$ *Post2008*$_t$	-0.720**	-0.657***	0.038	-0.697***	-1.428***
	(0.304)	(0.255)	(0.111)	(0.239)	(0.326)
Year FE	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Observations	1039	607	619	607	946
R^2	0.894	0.884	0.795	0.872	0.924

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01) Standard errors in parenthesis. The unit of observation is the ISIC 4-digit sector in each year. m_s is intensity of each sector in dual-use inputs as derived from the U.S. Input-Output matrix. All dependent variables are in log. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. The estimation sample in columns (2) to (4) excludes observations for which no price information is available. Observations are weighted by the number of establishments per sector. Standard errors are clustered at the ISIC 4-digit sector level (Sources: BEA, PCBS Industry Survey).

Table 3: Robustness: Import and Export Intensity as Control

	Output Value	Output Value 4-digit PPI	Price	Output	Wages
	(1)	(2)	(3)	(4)	(5)
$m_s \times$ *Post2008*$_t$	-1.780***	-1.722***	0.301	-2.029***	-2.234***
	(0.472)	(0.503)	(0.236)	(0.457)	(0.775)
$f_s \times$ *Post2008*$_t$	0.449	0.558	-0.459**	1.019*	0.296
	(0.505)	(0.658)	(0.233)	(0.582)	(0.312)
$e_s \times$ *Post2008*$_t$	0.056**	0.056**	-0.018	0.074***	0.041
	(0.023)	(0.029)	(0.012)	(0.026)	(0.031)
Year FE	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Observations	878	593	599	593	815
R^2	0.887	0.885	0.807	0.875	0.925

Notes. (* p-value$<$ 0.1; ** p-value$<$0.05; *** p-value$<$0.01) Standard errors in parenthesis. The unit of observation is the ISIC 4-digit sector in each year. m_s is intensity of each sector in dual-use inputs as derived from the U.S. Input-Output matrix. f_s is import intensity calculated by dividing the value of imported materials by total output value in each sector in 2000. e_s is export intensity calculated by dividing the value of external sales by total output value in each sector in 2000. All dependent variables are in log. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. The estimation sample in columns (2) to (4) excludes observations for which no price information is available. Observations are weighted by the number of establishments per sector. Standard errors are clustered at the ISIC 4-digit sector level (Sources: BEA, PCBS Industry Survey).

Table 4: Wages Across Localities in the West Bank

	Average Daily Wage in the Locality				
	(1)	(2)	(3)	(4)	Log (5)
$m_l \times$ *Post2008*$_t$	-15.988	-18.953**	-33.501*	-20.538*	-0.198*
	(10.285)	(9.546)	(17.611)	(11.162)	(0.113)
Share of Manuf		18.985***	13.723***	13.906**	0.242***
		(4.495)	(4.411)	(6.772)	(0.053)
Share of Agric		-7.661	-5.475	-15.001***	-0.111
		(5.313)	(5.184)	(5.641)	(0.075)
Locality Trends	No	No	Yes	No	No
Mobility Obstacles	No	No	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	2769	2571	2571	1585	2571
R^2	0.723	0.730	0.854	0.772	0.732

Notes. (* p-value$<$ 0.1; ** p-value$<$0.05; *** p-value$<$0.01) Standard errors in parenthesis. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average daily wage among employed individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to estimated sampling probabilities and surveyed population in each location. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table 5: Political Violence in the West Bank

	Number of Violent Events				
	NB	NB	NB	OLS	Log
	(1)	(2)	(3)	(4)	(5)
$m_l \times$ *Post2008*$_t$	5.509**	8.291**	9.609***	1.717**	0.076**
	(2.176)	(3.976)	(2.740)	(0.764)	(0.037)
Locality Trends	No	Yes	No	No	No
Mobility Obstacles	No	No	Yes	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	1428	1428	918	6552	6552
R^2				0.674	0.804

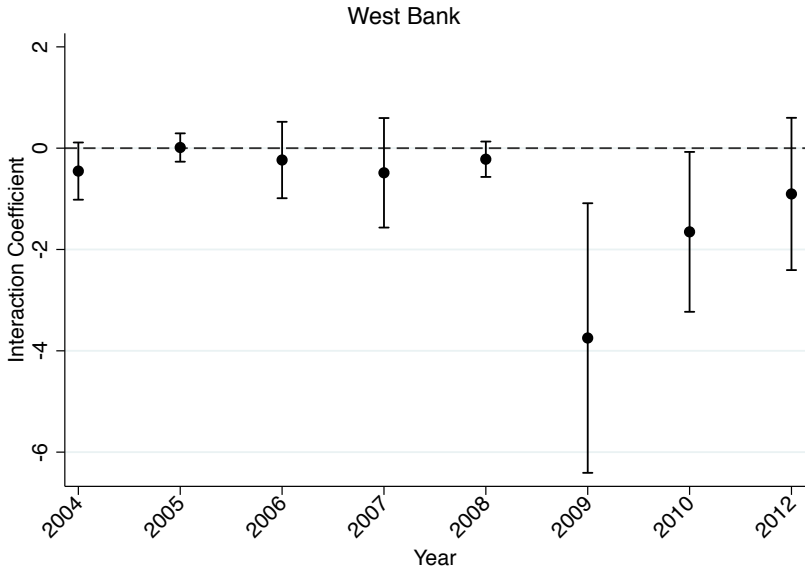
Notes. (* p-value$<$ 0.1; ** p-value$<$0.05; *** p-value$<$0.01) Standard errors in parenthesis. The unit of observation is the OPT locality in each year. Dependent variable is the number of episodes of political violence in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample in (1) to (3). Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (3) excludes all observations belonging to years 1999 to 2003. Standard errors are clustered at the locality level in (4) and (5) (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Table 6: Political Violence in the West Bank by Type

	Number of Violent Events									
	Non-organized		High Intensity		Low Intensity		Israeli Targets		OPT Targets	
	NB	OLS	NB	OLS	NB	OLS	NB	OLS	NB	OLS
$m_l \times Post2008_t$	6.434***	1.467**	9.203**	0.852**	5.463**	0.866**	3.381	0.827**	9.336***	0.890**
	(2.324)	(0.633)	(3.976)	(0.375)	(2.160)	(0.394)	(2.220)	(0.367)	(2.407)	(0.404)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1428	6552	1428	6552	1428	6552	1428	6552	1428	6552
R^2		0.657		0.519		0.734		0.526		0.670

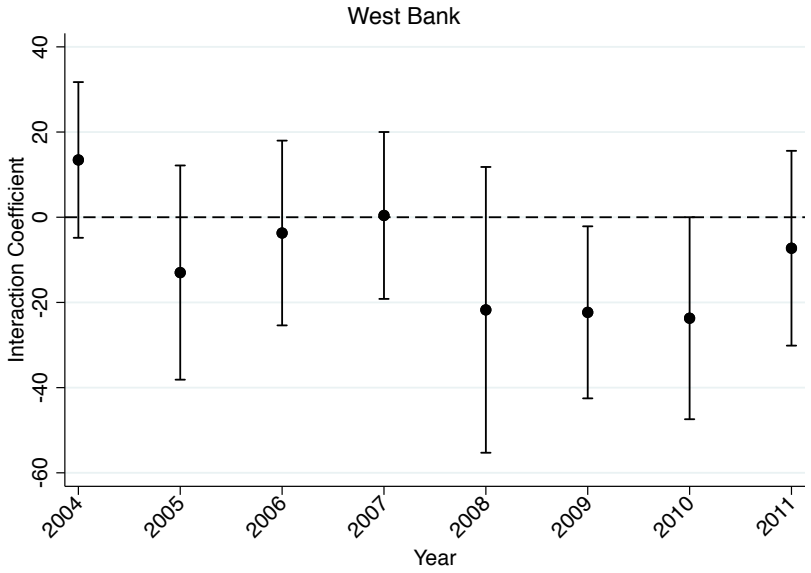
Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01) Standard errors in parenthesis. The unit of observation is the OPT locality in each year. Dependent variable in (1) and (2) is the number of violent events perpetrated by new fighters in the locality. Dependent variable in (3) and (4) is the number of violent events with high intensity (i.e. intensity=-10) in the locality. Dependent variable in (5) and (6) is the number of violent events with low intensity (i.e. intensity>-10) in the locality. Dependent variable in (7) and (8) is the number of violent events targeting Israeli actors in the locality. Dependent variable in (9) and (10) is the number of violent events targeting OPT actors in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample in (1), (3), (5), (7) and (9). Standard errors are clustered at the locality level in (2), (4), (6), (8), and (10) (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Figure 1: Dual-use Input Intensity and Wages Across Sectors Over Time



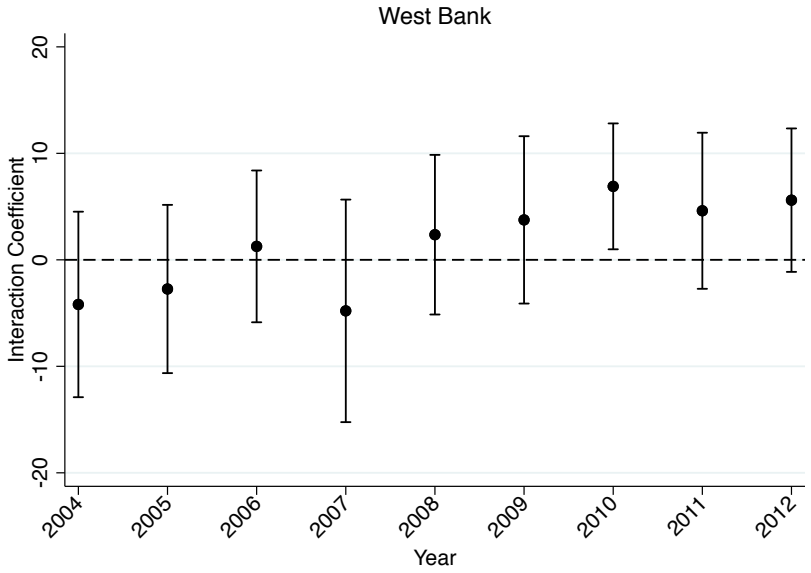
Notes. Dependent variable is the log of wages paid in each sector and year. The Figure plots the estimated coefficient of the interaction of the dual-use input intensity variable m_s with the corresponding year dummy. The solid vertical lines show the 95% confidence interval of each estimate, while the dash horizontal line indicates zero (Sources: BEA, Industry Survey).

Figure 2: Dual-use Input Intensity and Wages Across Localities Over Time



Notes. Dependent variable is the average daily wage in each locality and year. The Figure plots the estimated coefficient of the interaction of the dual-use input intensity variable m_l with the corresponding year dummy. The solid vertical lines show the 95% confidence interval of each estimate, while the dash horizontal line indicates zero (Sources: BEA, Labor Force Survey).

Figure 3: Dual-use Input Intensity and Political Violence Across Localities Over Time



Notes. Dependent variable is the number of episodes of political violence in each locality and year. The Figure plots the estimated coefficient of the interaction of the dual-use input intensity variable m_l with the corresponding year dummy. The solid vertical lines show the 95% confidence interval of each estimate, while the dash horizontal line indicates zero (Sources: BEA, PCBS, ICEWS).

A Online Appendix: Security, Trade, and Political Violence

A.1 Summary Statistics

Table A.1 shows the summary statistics for the variables we use in the empirical analysis. Sector-level output value, prices, output and wages are in log and computed at the ISIC 4-digit level, with values measured in New Israeli Shekel. Observations are weighted by the number of establishments per sector. Locality-level daily wages, monthly days of work, and unemployment probability are averages per locality, with observations being weighted according to estimated sampling probabilities and surveyed population in each location. Sector-level dual-use input intensity m_s and locality-level employment concentration in dual-use input intensive sectors m_l are derived as explained in Section 3. (Sources: BEA, ICEWS, PCBS Industry Survey, PCBS Labor Force Survey).

Table A.1: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Dual-use Input Intensity (Sector), m_s	0.106	0.134	0	0.564	113
			Panel A. West Bank		
Output Value	18.851	1.455	8.034	20.899	1039
Price	4.947	0.219	4.442	5.832	607
Output	14.103	1.253	5.7	15.868	607
Wages	8.315	1.666	1.675	11.676	924
Import Intensity (Sector), f_s	0.387	0.296	0	1.635	74
Export Intensity (Sector), e_s	0.611	1.563	0	13.378	113
Daily Wage	81.557	18.793	25	189.7	2865
Monthly Days of Work	22.22	1.941	7	31	2865
Unemployment Probability	0.083	0.04	0	0.302	2870
Share of Manufacturing	0.307	0.141	0	1	2664
Share of Agriculture	0.14	0.164	0	1	2664
Political Violence	0.968	9.9	0	255	7546
Non-organized Violence	0.784	8.07	0	220	7546
High Intensity Violence	0.36	4.161	0	121	7546
Low Intensity Violence	0.607	6.032	0	148	7546
Violence against Israeli Targets	0.392	4.534	0	181	7546
Violence against OPT Targets	0.576	5.976	0	166	7546
Checkpoints	1.11	1.71	0	17	4050
Observation Towers	0.701	1.185	0	8	4050
Roadblocks	1.014	1.614	0	14	4050
Dual-use Input Intensity (Locality), m_l	0.05	0.114	0	0.833	468
			Panel B. Gaza Strip		
Output Value	17.284	1.497	8.138	20.281	794
Price	4.936	0.212	4.442	5.832	503
Output	12.624	1.455	4.97	15.379	503
Wages	7.952	1.566	2.308	11.226	601
Daily Wage	61.82	7.316	16.9	108.2	456
Monthly Days of Work	23.597	0.882	12.9	29.3	456
Unemployment Probability	0.111	0.03	0	0.28	456
Share of Manufacturing	0.156	0.097	0	0.5	428
Share of Agriculture	0.122	0.142	0	0.942	428
Political Violence	18.865	131.13	0	1632	602
Dual-use Input Intensity (Locality), m_l	0.03	0.028	0	0.129	40

A.2 Balancedness Across Localities

Table A.2 reports coefficient estimates from a simple regression specification of locality-level employment concentration in dual-use input intensive sectors m_l – equation 3 in Section 3 – on baseline locality-level characteristics. The unit of observation is the OPT locality surveyed in the 1999 Labor Force Survey (Sources: BEA, PCBS Labor Force Survey).

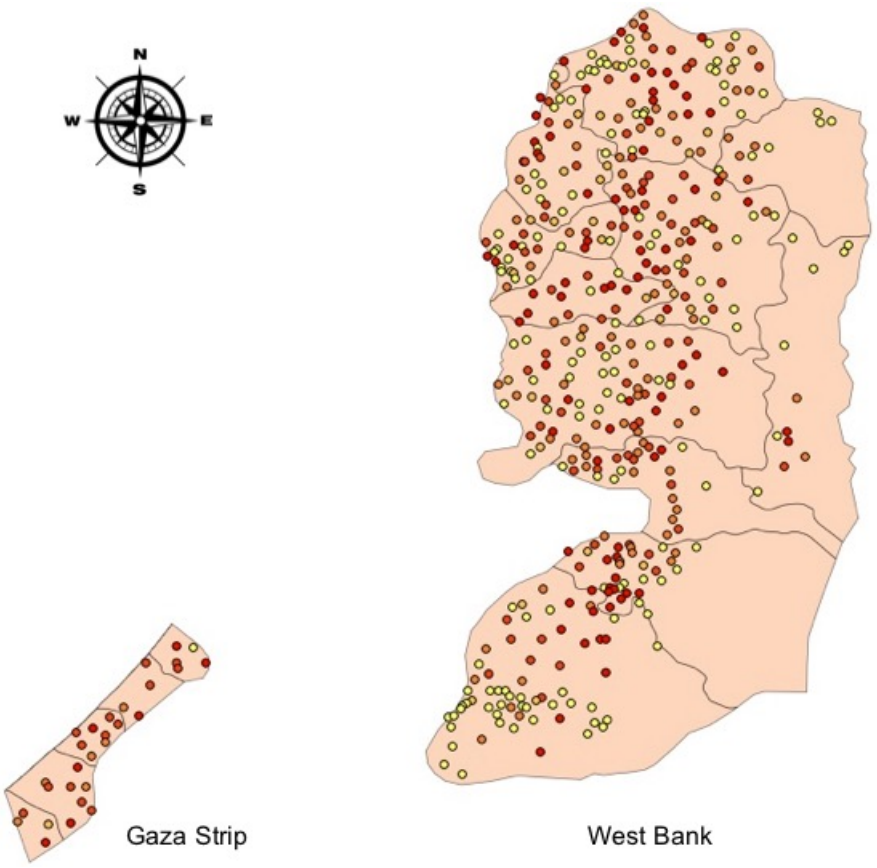
Table A.2: Test of Balancedness Across Localities

	Employment Concentration in Dual-use Input Intensive Sectors (m_l)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Population	0.0001										
	(0.000)										
Daily wage		0.000									
		(0.000)									
Working days (per month)			-0.000								
			(0.002)								
Share of manuf				0.041							
				(0.031)							
Share of agric					0.046						
					(0.048)						
Share of workers in public sector						-0.065					
						(0.090)					
Share of self-employed							0.036				
							(0.082)				
Unemployment								-0.373			
								(0.281)			
Out of labor force									-0.186		
									(0.129)		
Non-schooling										0.056	
										(0.089)	
High education											-0.021
											(0.046)
Constant	0.0382***	0.024	0.049	0.025*	0.036***	0.051***	0.034**	0.056***	0.144*	0.035***	0.045***
	(0.006)	(0.018)	(0.047)	(0.013)	(0.003)	(0.017)	(0.014)	(0.016)	(0.075)	(0.007)	(0.012)
Observations	187	187	187	187	187	187	187	187	187	187	187
R-squared	0.000	0.003	0.000	0.011	0.011	0.007	0.002	0.014	0.030	0.003	0.001

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Figure A.1 shows the location of each locality in both the West Bank and the Gaza Strip. Colors correspond to the degree of employment concentration in dual-use input intensive sectors in each location according to their quintile of the distribution of the m_l variable, from yellow to red. m_l is defined by equation 3 in Section 3 (Sources: BEA, PCBS).

Figure A.1: Dual-use Input Intensity Across Locations



A.3 Firms and Sectors: Additional Results

Table A.3 reports the coefficient estimates from the regression specification in equation 4 and implemented in Table 2, but including linear and quadratic sector-specific trends as additional controls. The unit of observation is the ISIC 4-digit sector in each year. m_s is intensity of each sector in dual-use inputs as derived from the U.S. Input-Output matrix. All dependent variables are in log. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. The estimation sample in columns (2) to (4) excludes observations for which no price information is available. Observations are weighted by the number of establishments per sector. Standard errors are clustered at the ISIC 4-digit sector level (Sources: BEA, PCBS Industry Survey).

Table A.3: Output, Prices, and Wages across Sectors in the West Bank: Sector-specific Trends

	Output Value	Output Value 4-digit PPI	Price	Output	Wages
	(1)	(2)	(3)	(4)	(5)
$m_s \times Post2008_t$	-0.587**	-0.698***	-0.373***	-0.326	-1.454*
	(0.271)	(0.258)	(0.067)	(0.264)	(0.881)
Sector Trends	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Observations	1039	607	619	607	946
R^2	0.936	0.929	0.932	0.919	0.941

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.4 reports the coefficient estimates from the regression specification in equation 4 and implemented in Table 2, but on the sample of firms located in the Gaza Strip. The unit of observation is the ISIC 4-digit sector in each year. m_s is intensity of each sector in dual-use inputs as derived from the U.S. Input-Output matrix. All dependent variables are in log. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. The estimation sample in columns (2) to (4) excludes observations for which no price information is available. Observations are weighted by the number of establishments per sector. Standard errors are clustered at the ISIC 4-digit sector level (Sources: BEA, PCBS Industry Survey).

Table A.4: Output, Prices, and Wages across Sectors in the Gaza Strip

	Output Value	Output Value 4-digit PPI	Price	Output	Wages
	(1)	(2)	(3)	(4)	(5)
$m_s \times Post2008_t$	-0.457	-0.904	-0.014	-0.903	0.085
	(0.742)	(0.660)	(0.111)	(0.573)	(0.460)
Year FE	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Observations	794	503	569	503	636
R^2	0.853	0.851	0.808	0.850	0.898

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

A.4 Local Labor Markets: Additional Results

Table A.5 reports the coefficient estimates from the regression specification in equation 5 and implemented in Table 4, but for the sample of localities in the Gaza Strip. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average daily wage among employed individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to estimated sampling probabilities and surveyed population in each location. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table A.5: Wages Across Localities in the Gaza Strip

	Average Daily Wage in the Locality				
	(1)	(2)	(3)	(4)	Log (5)
$m_l \times Post2008_t$	15.166	-15.318	20.252	37.366	-0.261
	(78.007)	(85.732)	(85.760)	(64.547)	(1.418)
Share of Manuf		-12.118	1.926	-11.789	-0.231
		(13.943)	(11.817)	(13.873)	(0.207)
Share of Agric		4.422	3.582	-2.558	0.086
		(5.812)	(5.248)	(5.606)	(0.092)
Locality Trends	No	No	Yes	No	No
Mobility Obstacles	No	No	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	447	420	420	221	420
R^2	0.502	0.514	0.778	0.628	0.526

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.6 reports the coefficient estimates from the regression specification in equation 5, replacing unemployment probability as outcome. Standard errors in parenthesis. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average probability of unemployment among individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to the locality population size in 1997. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table A.6: Unemployment in the West Bank

	Unemployment Probability			
	(1)	(2)	(3)	(4)
$m_l \times Post2008_t$	0.069	0.072	0.152**	0.055
	(0.051)	(0.053)	(0.061)	(0.042)
Share of Manuf		-0.059***	-0.044***	-0.022
		(0.013)	(0.015)	(0.015)
Share of Agric		-0.019	-0.049***	-0.023*
		(0.013)	(0.014)	(0.014)
Locality Trends	No	No	Yes	No
Mobility Obstacles	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes
Observations	2774	2574	2574	1587
R^2	0.536	0.554	0.741	0.608

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01).

Table A.7 reports the coefficient estimates from the regression specification in equation 5, replacing the monthly number of days worked as outcome. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average monthly days of work among employed individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to estimated sampling probabilities and surveyed population in each location. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table A.7: Monthly Days of Work in the West Bank

	Monthly Days of Work				Log
	(1)	(2)	(3)	(4)	(5)
$m_l \times Post2008_t$	-0.299	-1.162	-2.916	-0.035	-0.059
	(0.680)	(0.987)	(2.640)	(1.124)	(0.048)
Share of Manuf		-6.372***	-5.955***	-6.133***	-0.308***
		(0.603)	(0.705)	(0.815)	(0.030)
Share of Agric		-2.899***	-1.997**	-2.820***	-0.147***
		(0.691)	(0.801)	(0.700)	(0.034)
Locality Trends	No	No	Yes	No	No
Mobility Obstacles	No	No	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	2754	2571	2571	1570	2571
R^2	0.544	0.593	0.720	0.668	0.580

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.8 reports the coefficient estimates from the regression specification in equation 5, replacing unemployment probability as outcome and estimated on the sample of localities in the Gaza Strip. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average probability of unemployment among individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to the locality population size in 1997. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table A.8: Unemployment in the Gaza Strip

	Unemployment Probability			
	(1)	(2)	(3)	(4)
$m_l \times$ *Post2008*$_t$	-0.213	-0.244	0.104	-0.469**
	(0.205)	(0.209)	(0.226)	(0.220)
Share of Manuf		-0.036	-0.104***	-0.084
		(0.036)	(0.035)	(0.061)
Share of Agric		-0.101***	-0.095***	-0.104***
		(0.025)	(0.027)	(0.025)
Locality Trends	No	No	Yes	No
Mobility Obstacles	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes
Observations	447	420	420	221
R^2	0.676	0.723	0.829	0.662

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.9 reports the coefficient estimates from the regression specification in equation 5, replacing the monthly number of days worked as outcome and estimated on the sample of localities in the Gaza Strip. The unit of observation is the OPT locality surveyed in the Labor Force Survey in a given year. Dependent variable is average monthly days of work among employed individuals surveyed in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (4) excludes all observations belonging to years 1999 to 2003. Observations are weighted according to estimated sampling probabilities and surveyed population in each location. Standard errors are clustered at the locality level (Sources: BEA, PCBS Labor Force Survey).

Table A.9: Monthly Days of Work in the Gaza Strip

	Monthly Days of Work				
					Log
	(1)	(2)	(3)	(4)	(5)
$m_l \times Post2008_t$	2.498	-0.127	8.690	0.228	-0.015
	(5.184)	(4.513)	(7.944)	(4.262)	(0.189)
Share of Manuf		-6.112***	-4.519***	-5.247***	-0.262***
		(0.796)	(1.448)	(1.803)	(0.034)
Share of Agric		-3.247***	-2.657***	-3.244***	-0.139***
		(0.631)	(0.830)	(0.720)	(0.027)
Locality Trends	No	No	Yes	No	No
Mobility Obstacles	No	No	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	447	420	420	221	420
R^2	0.001	0.147	0.071	0.113	0.142

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

A.5 Political Violence: Additional Results

Table A.10 reports the coefficient estimates from the regression specification in equation 5 and implemented in Table 5, but for the sample of localities in the Gaza Strip. The unit of observation is the OPT locality in each year. Dependent variable is the number of episodes of political violence in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample in (1) to (3). Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (3) excludes all observations belonging to years 1999 to 2003. Standard errors are clustered at the locality level in (4) and (5) (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Table A.10: Political Violence in the Gaza Strip

	Number of Violent Events				
	NB	NB	NB	OLS	Log
	(1)	(2)	(3)	(4)	(5)
$m_l \times Post2008_t$	-3.894	-15.962	-13.056	-8.614	-2.431
	(10.461)	(13.583)	(10.381)	(46.870)	(2.703)
Locality Trends	No	Yes	No	No	No
Mobility Obstacles	No	No	Yes	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	1428	1428	918	6552	6552
R^2				0.674	0.804

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.11 reports the coefficient estimates from the regression specification in equation 5 and implemented in Table 5, but testing for pre-trends in 2006-2007 as discussed in Section 5.3.1. The unit of observation is the OPT locality in each year. Dependent variable is the number of episodes of political violence in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Year2006-07* is a dummy equal to 1 for observations belonging to the years 2006 and 2007. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample in (1). Standard errors are clustered at the locality level in (2) and (3) (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Table A.11: Political Violence in the West Bank
Testing for Pre-trends in 2006-2007

	Number of Violent Events		
	(1)	(2)	(3)
	NB	OLS	Log
$m_l \times$ *Year2006-07*$_t$	0.630	0.397	0.008
	(3.064)	(0.415)	(0.029)
$m_l \times$ *Post2008*$_t$	5.647**	1.806**	0.078**
	(2.289)	(0.761)	(0.036)
Year FE	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes
Observations	1428	6552	6552
R^2		0.674	0.804

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.12 reports the coefficient estimates from the regression specification in equation 5 and implemented in Table 5, but including the spatial lag of the main independent variable as additional control. The unit of observation is the OPT locality in each year. Dependent variable is the number of episodes of political violence in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. $\overline{m}_{-l}$ is average dual-use input intensity in the closest n localities, where the value of n is indicated on top of each column. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Table A.12: Political Violence in the West Bank
Spatial Lags

	Number of Violent Events			
	(1)	(2)	(3)	(4)
	NB	NB	NB	NB
	$n = 2$	$n = 3$	$n = 4$	$n = 5$
$m_l \times Post2008_t$	5.927**	7.198***	5.652**	4.515**
	(2.405)	(2.600)	(2.289)	(2.079)
$\overline{m}_{-l} \times Post2008_t$	-1.274	-4.885	-0.646	3.674
	(2.264)	(3.037)	(2.808)	(2.442)
Year FE	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes
Observations	1358	1428	1428	1428

Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Table A.13 reports the coefficient estimates from the regression specification in equation 5 and implemented in Table 5, but including in the count of violent events also those where the government or related entities (such as the Palestinian police) are identified as the source. The unit of observation is the OPT locality in each year. Dependent variable is the number of episodes of political violence in the locality. m_l is intensity of each locality in dual-use inputs as derived from the U.S. Input-Output matrix and employment in the 1997 Population Census. *Post2008* is a dummy equal to 1 for observations belonging to the year 2008 or after. Localities with zero episodes of political violent in all years throughout the period are dropped from the estimation sample in (1) to (3). Information on mobility restrictions is available only for the years 2004 to 2012, so that the estimation sample in column (3) excludes all observations belonging to years 1999 to 2003. Standard errors are clustered at the locality level in (4) and (5) (Sources: BEA, PCBS, ICEWS, UN-OCHA).

Table A.13: Political Violence in the West Bank
Including Government Sources

	Number of Violent Events				
	NB	NB	NB	OLS	Log
	(1)	(2)	(3)	(4)	(5)
$m_l \times Post2008_t$	3.603***	7.579***	9.122***	2.904**	0.104**
	(1.255)	(2.844)	(2.478)	(1.277)	(0.041)
Locality Trends	No	Yes	No	No	No
Mobility Obstacles	No	No	Yes	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Locality FE	Yes	Yes	Yes	Yes	Yes
Observations	1428	1428	918	6552	6552
R^2				0.661	0.793

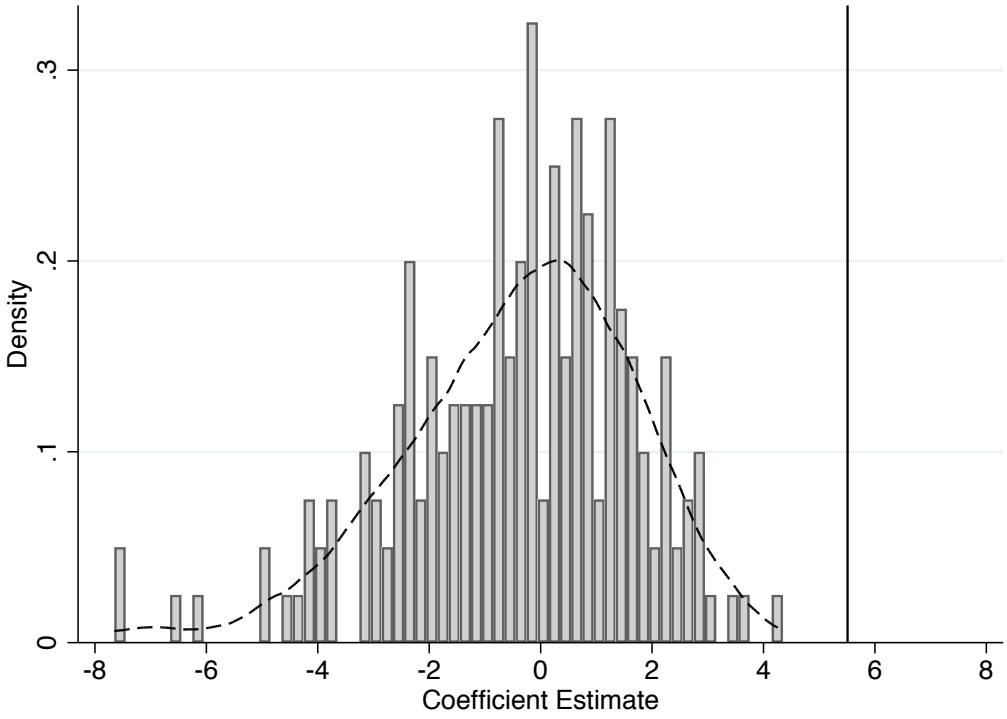
Notes. (* p-value< 0.1; ** p-value<0.05; *** p-value<0.01). Standard errors in parenthesis.

Figure A.2 depicts the same estimates as in Figure 3 and discussed in Section 5.3, but obtained by implementing the same regression specification over the sample of localities in the Gaza Strip. Dependent variable is the number of violent events in the locality. The Figure plots the estimated coefficient of the interaction of the dual-use input intensity variable m_l with the corresponding year dummy. The solid vertical lines show the 95% confidence interval of each estimate, while the dash horizontal line indicates zero (Sources: BEA, PCBS, ICEWS).

Figure A.2: Dual-use Input Intensity and Political Violence in the Gaza Strip

As discussed in Section 5.3.1, the Figure plots the empirical distribution of the estimated coefficient of the interaction of the dual-use input intensity variable m_l with the corresponding year dummy *Post2008*. Estimates are obtained by assigning the actual values of m_l to West Bank localities at random in 200 repetitions and implementing a negative binomial regression specification with locality and year fixed effects. The vertical line corresponds to the estimated coefficient in our baseline specification (Sources: BEA, PCBS, ICEWS).

Figure A.3: Randomization Inference



A.6 Additional Information on ICEWS Data

Table A.14 reports the full list of event classification categories (CAMEO), and whether they are classified as high or low level of hostility according to the intensity score value, respectively equal to and higher than -10 (Sources: ICEWS).

Table A.14: Classification of ICEWS Events 1/4

Violent	High Intensity -10	Low Intensity $(-10, -1)$	CAMEO Event Category
1	0	1	Abduct, hijack, or take hostage
1	0	1	Arrest, detain, or charge with legal action
1	1	0	Assassinate
1	0	1	Attempt to assassinate
1	1	0	Carry out car bombing
1	1	0	Carry out roadside bombing
1	1	0	Carry out suicide bombing
1	0	1	Coerce
1	1	0	Conduct suicide, car, or other non-military bombing
1	0	1	Demonstrate military or police power
1	0	1	Destroy property
1	1	0	Employ aerial weapons
1	1	0	Engage in ethnic cleansing
1	0	1	Engage in mass expulsion
1	1	0	Engage in mass killings
1	1	0	Engage in violent protest for leadership change
1	0	1	Expel or deport individuals
1	0	1	Expel or withdraw
1	0	1	Expel or withdraw peacekeepers
1	1	0	Fight with artillery and tanks
1	1	0	Fight with small arms and light weapons
1	1	0	Kill by physical assault
1	0	1	Mobilize or increase armed forces
1	0	1	Mobilize or increase police power
1	0	1	Physically assault
1	0	1	Protest violently, riot
1	0	1	Seize or damage property
1	0	1	Sexually assault
1	0	1	Torture
1	1	0	Use chemical, biological, or radiological weapons
1	1	0	Use conventional military force
1	0	1	Use tactics of violent repression
1	0	1	Use unconventional violence

Table A.14: Classification of Violent and Non-violent Events 2/4

Violent	High Intensity -10	Low Intensity $(-10, -1)$	CAMEO Event Category
0	0	0	Accuse
0	0	0	Accuse of aggression
0	0	0	Accuse of crime, corruption
0	0	0	Accuse of espionage, treason
0	0	0	Accuse of human rights abuses
0	0	0	Accuse of war crimes
0	0	0	Appeal for change in institutions, regime
0	0	0	Appeal for change in leadership
0	0	0	Appeal for de-escalation of military engagement
0	0	0	Appeal for easing of administrative sanctions
0	0	0	Appeal for easing of economic sanctions, boycott, or embargo
0	0	0	Appeal for easing of political dissent
0	0	0	Appeal for policy change
0	0	0	Appeal for political reform
0	0	0	Appeal for release of persons or property
0	0	0	Appeal for rights
0	0	0	Appeal for target to allow international involvement (non-mediation)
0	0	0	Appeal to yield
0	0	0	Ban political parties or politicians
0	0	0	Bring lawsuit against
0	0	0	Complain officially
0	0	0	Conduct hunger strike
0	0	0	Conduct hunger strike for policy change
0	0	0	Conduct strike or boycott
0	0	0	Conduct strike or boycott for policy change
0	0	0	Confiscate property
0	0	0	Criticize or denounce
0	0	0	Decline comment
0	0	0	Defy norms, law
0	0	0	Demand
0	0	0	Demand change in institutions, regime
0	0	0	Demand change in leadership
0	0	0	Demand de-escalation of military engagement
0	0	0	Demand diplomatic cooperation (such as policy support)
0	0	0	Demand easing of administrative sanctions
0	0	0	Demand easing of economic sanctions, boycott, or embargo
0	0	0	Demand easing of political dissent
0	0	0	Demand economic aid
0	0	0	Demand humanitarian aid
0	0	0	Demand intelligence cooperation
0	0	0	Demand judicial cooperation

Notes. Sources: Integrated Crisis Early Warning System (ICEWS) dataset. The Table reports the full list of event classification categories (CAMEO), and whether they are classified as high or low level of hostility according to the intensity score value, respectively equal to and higher than -10.

Table A.14: Classification of Violent and Non-violent Events 3/4

Violent	High Intensity -10	Low Intensity $(-10, -1)$	CAMEO Event Category
0	0	0	Demand material cooperation
0	0	0	Demand mediation
0	0	0	Demand meeting, negotiation
0	0	0	Demand military aid
0	0	0	Demand policy change
0	0	0	Demand political reform
0	0	0	Demand release of persons or property
0	0	0	Demand rights
0	0	0	Demand settling of dispute
0	0	0	Demand that target yields
0	0	0	Demonstrate for leadership change
0	0	0	Demonstrate for policy change
0	0	0	Demonstrate or rally
0	0	0	Deny responsibility
0	0	0	Give ultimatum
0	0	0	Halt mediation
0	0	0	Halt negotiations
0	0	0	Impose administrative sanctions
0	0	0	Impose blockade, restrict movement
0	0	0	Impose curfew
0	0	0	Impose embargo, boycott, or sanctions
0	0	0	Impose restrictions on political freedoms
0	0	0	Impose state of emergency or martial law
0	0	0	Increase military alert status
0	0	0	Increase police alert status
0	0	0	Investigate
0	0	0	Investigate crime, corruption
0	0	0	Investigate human rights abuses
0	0	0	Investigate military action
0	0	0	Investigate war crimes
0	0	0	Make pessimistic comment
0	0	0	Obstruct passage, block
0	0	0	Occupy territory
0	0	0	Rally opposition against
0	0	0	Reduce or break diplomatic relations
0	0	0	Reduce or stop economic assistance
0	0	0	Reduce or stop humanitarian assistance
0	0	0	Reduce or stop material aid
0	0	0	Reduce or stop military assistance
0	0	0	Reduce relations
0	0	0	Refuse to de-escalate military engagement

Notes. Sources: Integrated Crisis Early Warning System (ICEWS) dataset. The Table reports the full list of event classification categories (CAMEO), and whether they are classified as high or low level of hostility according to the intensity score value, respectively equal to and higher than -10.

Table A.14: Classification of Violent and Non-violent Events 4/4

Violent	High Intensity -10	Low Intensity $(-10, -1)$	CAMEO Event Category
0	0	0	Refuse to ease administrative sanctions
0	0	0	Refuse to ease economic sanctions, boycott, or embargo
0	0	0	Refuse to ease popular dissent
0	0	0	Refuse to release persons or property
0	0	0	Refuse to yield
0	0	0	Reject
0	0	0	Reject economic cooperation
0	0	0	Reject judicial cooperation
0	0	0	Reject material cooperation
0	0	0	Reject mediation
0	0	0	Reject plan, agreement to settle dispute
0	0	0	Reject proposal to meet, discuss, or negotiate
0	0	0	Reject request for change in institutions, regime
0	0	0	Reject request for change in leadership
0	0	0	Reject request for economic aid
0	0	0	Reject request for military aid
0	0	0	Reject request for military protection or peacekeeping
0	0	0	Reject request for rights
0	0	0	Threaten
0	0	0	Threaten non-force
0	0	0	Threaten to halt negotiations
0	0	0	Threaten to impose curfew
0	0	0	Threaten to reduce or break relations
0	0	0	Threaten to reduce or stop aid
0	0	0	Threaten with administrative sanctions
0	0	0	Threaten with military force
0	0	0	Threaten with political dissent, protest
0	0	0	Threaten with repression
0	0	0	Threaten with restrictions on political freedoms
0	0	0	Threaten with sanctions, boycott, embargo
0	0	0	Use as human shield
0	0	0	Veto
0	0	0	Violate ceasefire

Notes. Sources: Integrated Crisis Early Warning System (ICEWS) dataset. The Table reports the full list of event classification categories (CAMEO), and whether they are classified as high or low level of hostility according to the intensity score value, respectively equal to and higher than -10.

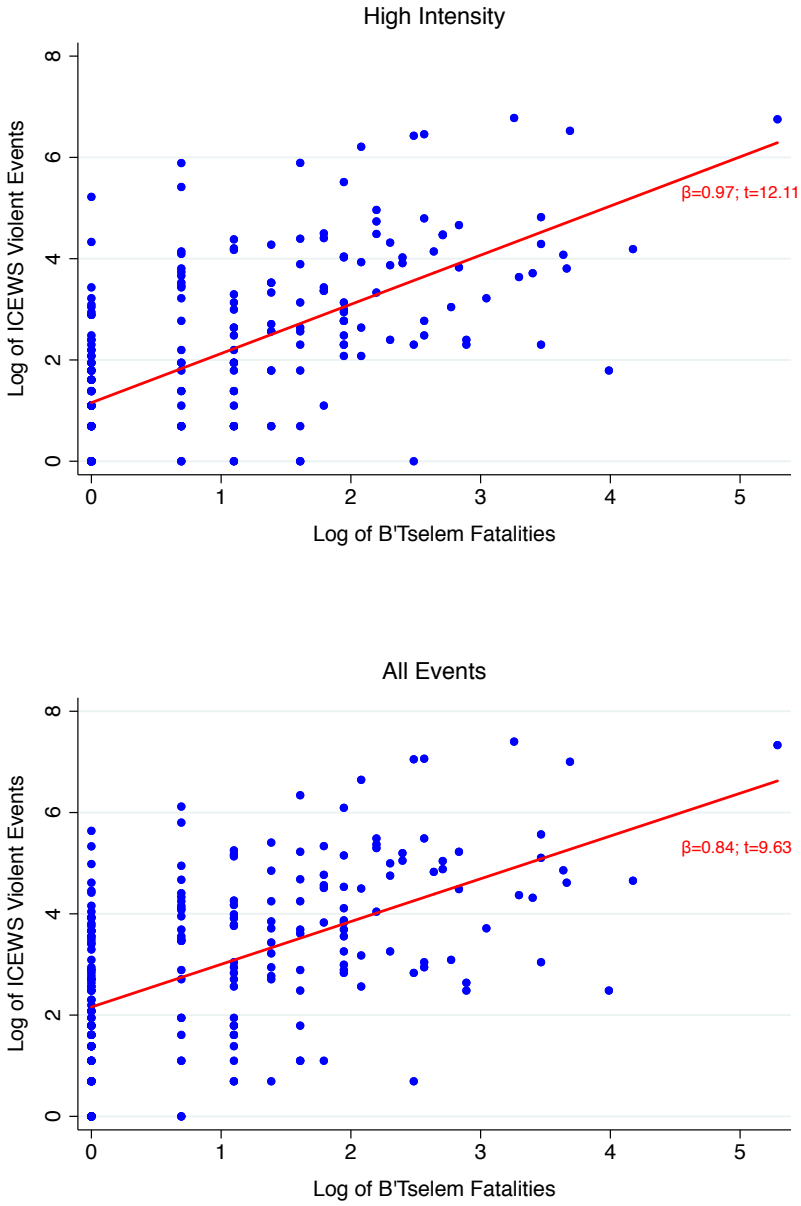
Table A.15 reports the absolute and relative frequency of the 10 most frequent violent event categories in the Integrated Crisis Early Warning System dataset.

Table A.15: Most Frequent Event Types

CAMEO Event Category	Frequency	Percent
Panel A. All Violent Events		
Use unconventional violence	5,448	29.2
Fight with small arms and light weapons	4,135	22.1
Use conventional military force	2,263	12.1
Fight with artillery and tanks	1,940	10.4
Arrest and detain	1,615	8.7
Abduct, hijack, or take hostage	746	4.0
Physically assault	584	3.1
Protest violently, riot	496	2.7
Conduct suicide	390	2.1
Carry out suicide bombing	364	1.9
Panel B. Violent Events targeting OPT		
Use unconventional violence	2,903	28.8
Fight with small arms and light weapons	2,236	22.2
Arrest and detain	1,534	15.2
Use conventional military force	1,188	11.8
Abduct, hijack, or take hostage	552	5.5
Physically assault	338	3.3
Protest violently, riot	267	2.6
Conduct suicide	261	2.6
Expel or deport individuals	168	1.7
Fight with artillery and tanks	132	1.3
Panel C. Violent Events targeting Israel		
Use unconventional violence	2,545	29.7
Fight with small arms and light weapons	1,899	22.1
Fight with artillery and tanks	1,808	21.1
Use conventional military force	1,075	12.5
Physically assault	246	2.9
Protest violently, riot	229	2.7
Carry out suicide bombing	229	2.7
Abduct, hijack, or take hostage	194	2.3
Conduct suicide	129	1.5
Arrest and detain	81	0.9

As discussed in Section 3, Figure A.4 plots the number of violent events recorded in the ICEWS dataset in each district of the OPT between 1999 and 2012 against the number of killings perpetrated by Palestinians and recorded by B'Tselem in the same district and year. The top Figure considers only ICEWS violent events with intensity score equal to -10. The bottom figure considers all violent events. All variables are in log (augmented by 1) (Sources: ICEWS, B'Tselem).

Figure A.4: Comparison Between ICEWS and B'Tselem Data



A.7 Dual-use List

ISRAELI LISTS OF FORBIDEN & RESTRICTED GOODS TO THE WEST BANK

I. ARMS & MUNITIONS:

Forbidden transfer under all circumstances across Israel's frontiers without specific permits - as defined in the Control of Exports Security Order (Arms and Munitions) 2008, and in the Control of Exports Security Order (Missile Equipment) 2008.

II. LIST OF RESTRICTED DUAL-USE GOODS TO THE WB:

The list of restricted dual-use goods below is excerpted from the Defense Export Control (Controlled Dual-Use Equipment Transferred to Areas under the Palestinian Authority Jurisdiction) Order 2008 last updated on 2 August, 2009 and translated from Hebrew.

A. Chemicals

1. Chlorate salts
    a. Potassium chlorate – $KClO_3$
    b. Sodium chlorate – $NaClO_3$
2. Perchlorate salts
    a. Potassium perchlorate – $KCLO_4$
    b. Sodium perchlorate – $NaClO_4$
3. Hydrogen peroxide – H_2O_2
4. Nitric acid – HNO_3
5. Musk xylene – $C_{12}H_{15}N_3O_6$
6. Mercury – Hg
7. Hexamine – $C_6H_{12}N_4$
8. Potassium permanganate
9. Sulfuric acid – H_2SO_4
10. Potassium cyanide – KCN
11. Sodium cyanide – NaCN
12. Sulfur – S
13. Phosphorus – P
14. Aluminum powder – Al
15. Magnesium powder – Mg
16. Naphthalene – $C_{10}H_8$
17. Fertilizers
    a. Ammonium nitrate – NH_4NO_3
    b. Potassium nitrate – KNO_3
    c. Urea – CH_4N_2O
    d. Urea nitrate – $CH_4N_2ONO_3$
    e. Fertilizer 27-10-17
    f. Fertilizer 20-20-20
    g. Any fertilizer containing any of the chemicals in items a – c
18. Nitrous salts of other metals:
    a. Sodium nitrate – $NaNO_3$
    b. Calcium nitrate – $Ca(NO_3)_2$
19. Pesticides
    a. Lannate
    b. Endosulfan
20. Nitrite salt
21. Methyl bromide – CH_3Br
22. Potassium chloride – KCL

23. Formalin – CH_2O
24. Ethylene glycol – $C_2H_6O_2$
25. Glycerin – $C_3H_8O_3$

B. Other Materials and Equipment

26. Platen, titanium, or graphite plates not more than 10 cm thick
27. Communication equipment, communication support equipment, or any equipment that has a communication function
28. Equipment whose operation can cause interference in communication networks
29. Communication network infrastructure equipment
30. Lathe machines for removing metals (including center lathe machines)
31. Lathe machine spare parts, lathe machine equipment, and lathe machines accessories
32. Machine tools that can be used for one or more of the following functions: erosion, screwing, purifying, and rolling
33. Casting ovens of more than 600 degrees Celsius
34. Aluminum rods with a radius between 50 to 150 mm
35. Metal pipes of 50 to 200 mm radius
36. Metal balls with a radius of 6 mm and bearings containing metal balls with a 6 mm radius
37. Optical binoculars
38. Telescopes including aimers (and markers)
39. Laser distance measuring equipment
40. Laser pointers
41. Night vision equipment
42. Underwater cameras and sealed lenses
43. Compasses and designated navigation equipment including GPS
44. Diving equipment, including diving compressors and underwater compasses
45. Jet skis
46. External marine engines of more than 25 Hp and designated parts for such engines
47. Parachutes, surf-gilders, and flying models
48. Balloons, dirigible airships, hanging gliders, flying models, and other aircraft that do not operate with engine power
49. Devices and instruments for measuring gamma and x-rays
50. Devices and instruments for physical and chemical analysis
51. Telemetric measuring equipment
52. All-terrain vehicles
53. Firearms and ammunition for civilian use (e.g., for hunting, diving, fishing, and sports
54. Daggers, swords, and folding knifes of more than 10 cm
55. An object or a system of objects that can emit fire or detonators including fireworks
56. Uniforms, symbols and badges.
57. All items listed in the Defense Export Control Order (Controlled Dual-use Equipment), 2008 - Items listed under the Wassenaar Arrangement: As specified in the updated (2008) "Wassenaar Arrangement on Export Controls for Arms and Dual Use Goods and Technologies - List of Dual Use Goods and Technologies and Munitions List."

Récents cahiers de recherche du CIREQ
Recent Working Papers of CIREQ

La liste complète des cahiers de recherche du CIREQ est disponible à l'adresse suivante : http://www.cireqmontreal.com/cahiers-de-recherche .

The complete list of CIREQ's working papers is available at the following address : http://www.cireqmontreal.com/cahiers-de-recherche .

04-2018 Ehlers, L., J. Massó, "Robust Design in Monotonic Matching Markets : A Case for Firm-Proposing Deferred-Acceptance", mai 2018, 20 pages

05-2018 Bosković, B., U. Chakravorty, M. Pelli, A. Risch, "The Effect of Forest Access on the Market for Fuelwood in India", mai 2018, 45 pages

06-2018 Coulibaly, L., "Monetary Policy in Sudden Stop-Prone Economies", juin 2018, 42 pages

07-2018 Bengui, J., T. Phan, "Asset Pledgeability and Endogenously Leveraged Bubbles", juin 2018, 48 pages

08-2018 Andersson, T., L. Ehlers, L.-G. Svensson, R. Tierney, "Gale's Fixed Tax for Exchanging Houses", juin 2018, 22 pages

09-2018 Ramachandran, R., C. Rauh, "Discrimination Without Taste - How Discrimination Can Spillover and Persist", juin 2018, 38 pages

10-2018 Gonçalves, S., B. Perron, "Bootstrapping Factor Models With Cross Sectional Dependence", juillet 2018, 30 pages

11-2018 Andersson, T., Á. Cseh, L, Ehlers, A. Erlanson, "Organizing Time Banks : Lessons from Matching Markets", juillet 2018, 24 pages

12-2018 Hoelzemann, J., N. Klein, "Bandits in the Lab", août 2018, 52 pages

13-2018 Klein, N., P. Wagner, "Strategic Investment and Learning With Private Information", août 2018, 24 pages

14-2018 Godefroy, R., "The Birth of the Congressional Clinic", août 2018, 47 pages

15-2018 Godefroy, R., J. Lewis, "The Impact of Uncertainty in Agriculture", août 2018, 40 pages

16-2018 Horan, S., P. Manzini, M. Mariotti, "Precision May Harm : The Comparative Statics of Imprecise Judgement", août 2018, 32 pages

17-2018 Bouakez, H., O. Rachedi, E. Santoro, "Sectoral Heterogeneity, Production Networks, and the Effects of Government Spending", août 2018, 44 pages

18-2018 Benchekroun, H., M. Breton, A. Ray Chaudhuri, "Mergers in Nonrenewable Resource Oligopolies and Environmental Policies", septembre 2018, 40 pages

19-2018 Dudley, L., C. Rauh, "Innovation Growth Clusters : Lessons from the Industrial Revolution", août 2018, 32 pages