

Should I trade or should I go (to war)?  
Lessons from the Second Intifada

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# Motivation

- Do trade shocks affect conflict?
- The relation between economic conditions and involvement in political violence is controversial;
  - Poor economic conditions  $\longrightarrow$  lower the opportunity cost of involvement in violent Conflict.
  - Improving economic conditions  $\longrightarrow$  raises the political awareness.

# Motivation

- The evidence on the relation between trade shocks and conflict has so far focused mainly on commodity price shocks.
- Providing two different channels through which the trade shocks affect conflict:
  - **Opportunity cost:** Increases in exports may raise the incomes for certain sections of the population, thereby raising their opportunity cost of engaging in political violence.
  - **State capacity:** exports may also raise the fiscal revenues, which the state can eventually use to quell ongoing violence.
- The effect of trade policy on the intensity of Israeli-Palestinian conflict has never been examined;

# Hypothesis

- **Target:** Examine whether exogenous changes in Palestinian trade in the second half of the 1990s affected the intensity of the subsequent Palestinian uprising ('second Intifada').
- **Our Hypothesis:** Increases in Palestinian exports reduce the intensity and even the probability of the subsequent conflict by increasing employment opportunities.

## The Israeli-Palestinian conflict has three features that make it suitable to isolate the opportunity cost mechanism.

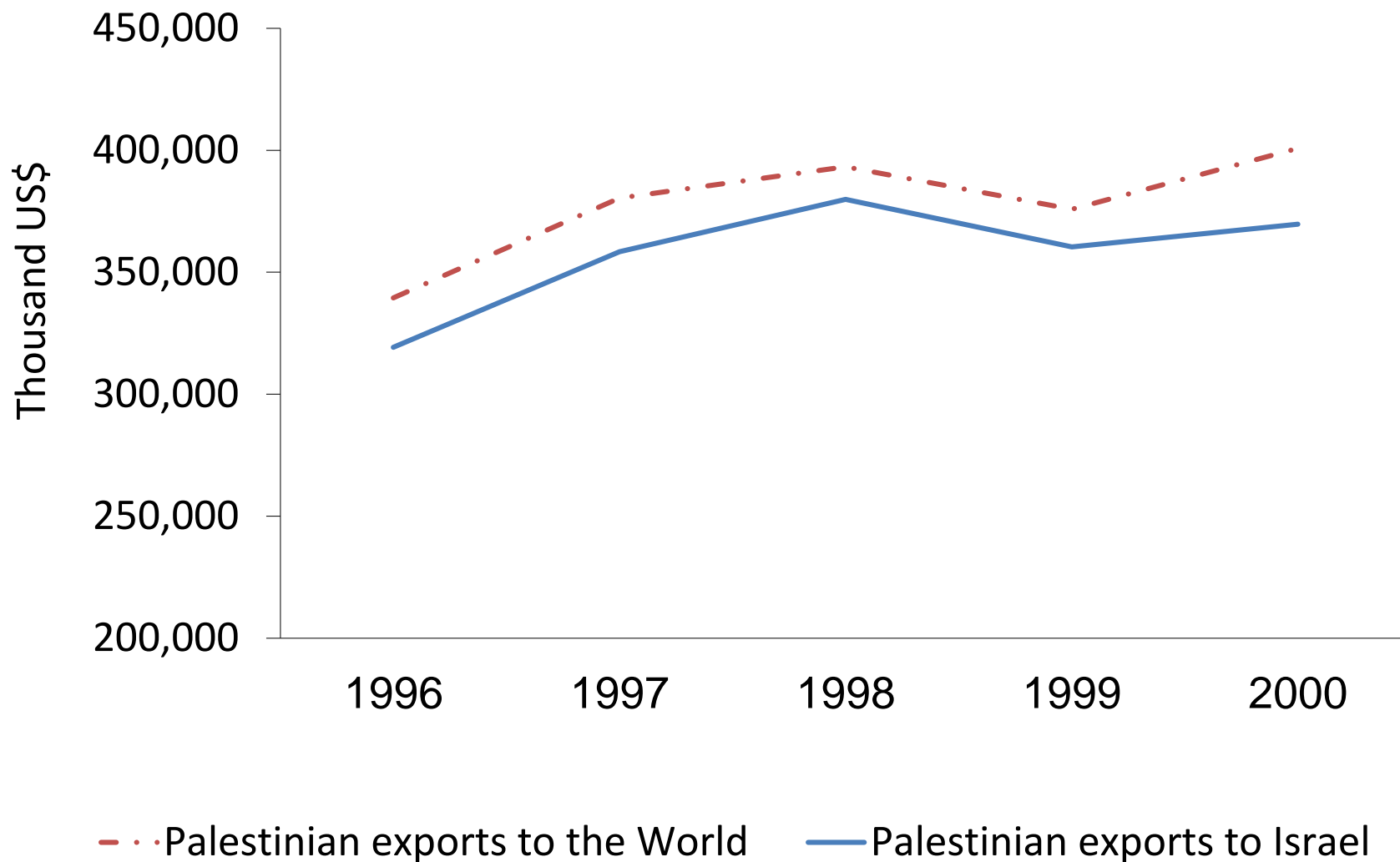
- **First**, Palestinian exports do not include goods that would raise the gains from appropriation, such as oil or minerals.
- **Second**, the Palestinian Authority's (PA) limited ability to tax private earnings should minimize its possibility to use increased exports to curb violence against Israel, or alternatively to use the funds to increase violence against Israel.
- **Finally**, while having some limited degree of autonomy, the PA does not represent a state, as it does not control its own borders, its air space, it does not have an army, nor does it have full control over its territory.

# Contribution to the Literature

- This study makes a contribution to the thin literature on the effect of economic policies measures on involvement in the conflict.
- To the best of our knowledge this is the first study that uses this type of approach to look at the relation between trade shocks and conflict.

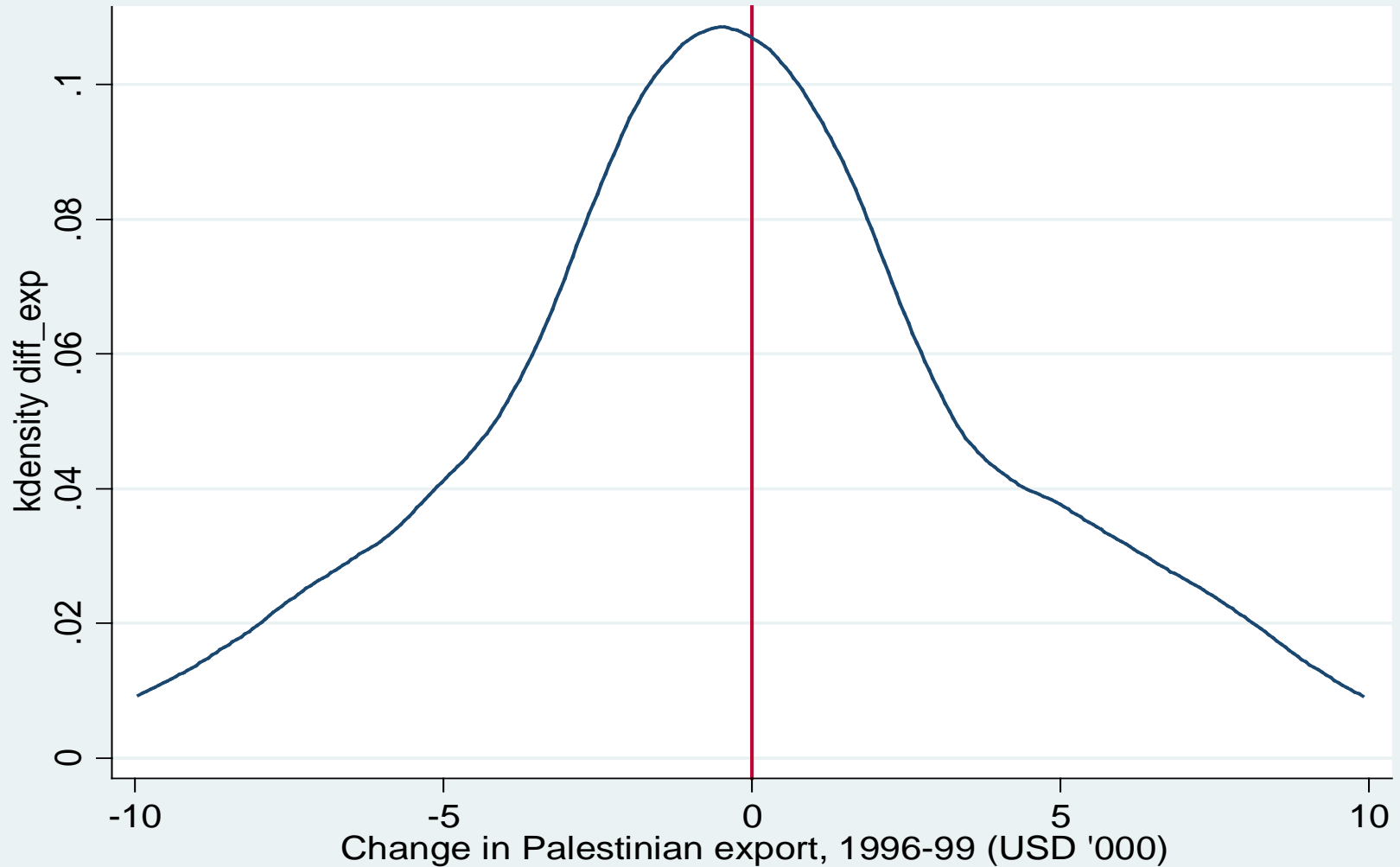
# **Trade patterns prior to the second Intifada**

**Figure1: Palestinian Export to the World and  
Palestinian Export to Israel, 1996-2000**

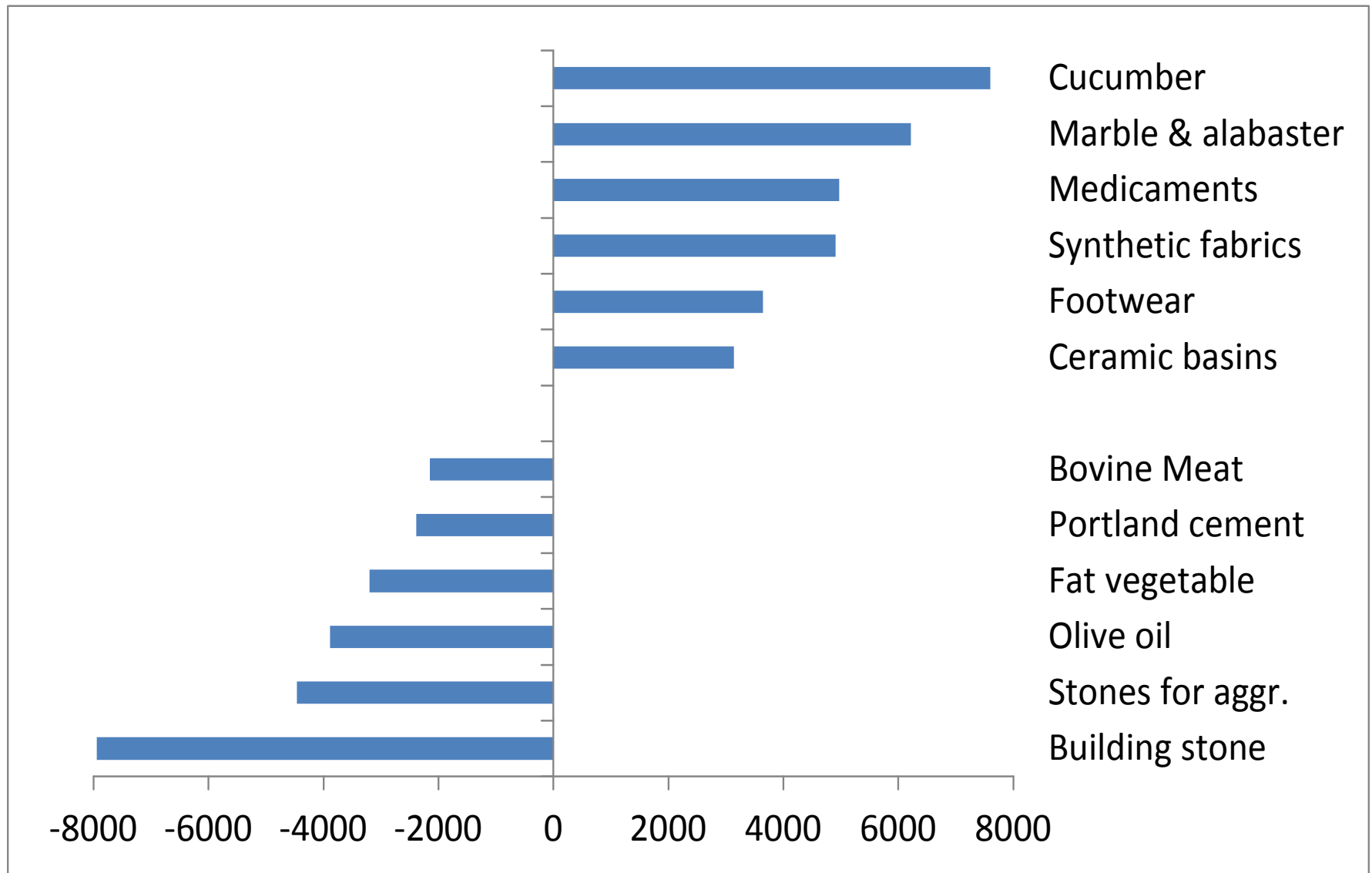




**Figure 2: Distribution of changes in Palestinian exports (1996-99),  
USD '000**



**Figure 3: Best and worst performing Palestinian export sectors, (1996-99), USD '000)**



# **Data and Empirical strategy**

# Data

## We Combine data from several sources:

- **Violence:** measured by Palestinian fatalities by Israelis and Palestinian suicide attacks inside Israel.
- **Sectoral employment as well as Socio-demographic data:** Population census conducted by the PCBS at the end of 1997;
- **Trade Data:** Palestinian annual import and export data are taken from the Palestinian Central Bureau of Statistics. Israeli import and export data (at the 5-digit SITC level) come from the COMTRADE dataset in WITS.
- **labor market:** Labor force surveys conducted by the Palestinian Central Bureau;

# Unit of Analysis

## **Palestinian localities in the West Bank and Gaza ;**

- The data were aggregated to the level of the locality, which serves as the unit of analysis and represents the smallest spatial unit for which economic data is available in the West Bank and Gaza.
- Our sample consists of 532 localities in the West Bank, and 37 localities in the Gaza Strip.

# Empirical strategy

We estimate the following model using a Negative Binomial regression:

$$F_{lr} = \gamma_r + \beta_1 \Delta EXP_l + BX_l + \varepsilon_l,$$

Where:

- ***F***: is the number of fatalities in each locality *l* in region *r* during the period of September 2000 and December 2004.
- **$\Delta EXP$** : The change in Palestinian exports in each locality, calculated as the sum of the change in exports in each sector *s* during the 1996-1999 period weighted by the share of employment in that sector in the locality's total private employment in 1997;

$$\Delta EXP_l = \sum_{s=1}^N \left( \Delta exp_s \times \frac{emp_{ls}^{1997}}{emp_l^{1997}} \right)$$

## Empirical strategy

- $X$ : Array of socio-demographic variables that can affect both the employment distribution and the probability of engaging into political violence. They include:
  - Total population,
  - share of males in the population,
  - share of the population aged 15-40,
  - share of population with elementary education or below,
  - share of households with more than 8 members,
  - share of married individuals.
  - availability of water, electricity, sewage and landline telephone infrastructure,
  - unemployment rate in 1997 and number of permits to work in Israel in 1999
  - number of Palestinian fatalities in each locality between January 1995 and August 2000.

# Results



### Table 3: The impact of Palestinian exports on conflict intensity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Region	All	All	All	WB	Gaza	All	All
Period	2000-04	2000-04	2000-04	2000-04	2000-04	2000-01	2000-01
$\Delta$ Palestinian exports <sub>96-99</sub>	<b>-0.441***</b>	<b>-0.128***</b>	<b>-0.163***</b>	<b>-0.087***</b>	<b>-1.085***</b>	<b>-0.101***</b>	<b>-0.191**</b>
	<b>(0.044)</b>	<b>(0.029)</b>	<b>(0.061)</b>	<b>(0.030)</b>	<b>(0.310)</b>	<b>(0.036)</b>	<b>(0.078)</b>
Main controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Labor market controls	No	No	Yes	No	No	No	Yes
Observations	576	569	199	532	37	569	199

# Robustness Checks 1

**Table 5: The impact of Palestinian exports on alternative conflict measures**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pal. fatalities in demo		Israeli fatalities		Pal. attacks in Israel		At least 1 Palestinian fatality	
<b>Δ Palestinian exports<sub>96-99</sub></b>	<b>-0.141***</b> (0.041)	<b>-0.229***</b> (0.081)	<b>-0.037</b> (0.045)	<b>-0.250***</b> (0.073)	<b>-0.040</b> (0.040)	<b>-0.182*</b> (0.101)	<b>-0.056***</b> (0.017)	<b>-0.088*</b> (0.048)
<b>Main controls</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Labor mkt controls</b>	No	Yes	No	Yes	No	Yes	No	Yes
<b>Observations</b>	569	199	569	199	569	199	569	199

# Mechanisms

**Table 9: The impact of Palestinian exports on conflict intensity by destination**

	(1)	(2)	(4)	(5)	(6)	(7)
	Palestinian fatalities		Pal. fatalities in demo		At least 1 Palestinian fatality	
$\Delta$ Palestinian exp. to Israel <sub>96-99</sub> (a)	<b>-0.138***</b> (0.039)	<b>-0.187**</b> (0.078)	<b>-0.166***</b> (0.049)	<b>-0.316***</b> (0.095)	<b>-0.061**</b> (0.025)	<b>-0.106</b> (0.073)
$\Delta$ Palestinian exp. to RoW <sub>96-99</sub> (b)	<b>-0.182</b> (0.153)	<b>-0.272</b> (0.314)	<b>-0.279</b> (0.201)	<b>-0.638*</b> (0.373)	<b>-0.087</b> (0.104)	<b>-0.177</b> (0.276)
$\chi^2$ test (a)=(b)	0.12	0.11	0.45	1.10	0.32	0.00
Main controls	Yes	Yes	Yes	Yes	Yes	Yes
Labor market controls	No	Yes	No	Yes	No	Yes
Observations	569	199	569	199	569	199

# Mechanisms

**Table 10: The relation between Palestinian exports and Palestinian attitudes towards Israel**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta$ support peace negotiations		$\Delta$ support attack vs. Israelis		$\Delta$ support peace negotiations		$\Delta$ support attack vs. Israelis	
$\Delta$ Palestinian exports <sub>96-99</sub>	0.016 (0.052)		0.107 (0.067)					
$\Delta$ Palestinian exports <sub>96-00</sub>		0.003 (0.020)		0.030 (0.023)				
$\Delta$ Palestinian exports to Israel <sub>96-99</sub>					0.040 (0.051)		0.134* (0.070)	
$\Delta$ Palestinian exports to RoW <sub>96-99</sub>					0.176 (0.127)		0.281 (0.251)	
$\Delta$ Palestinian exports to Israel <sub>96-00</sub>						0.009 (0.116)		0.058 (0.141)
$\Delta$ Palestinian exports to RoW <sub>96-00</sub>						-0.007 (0.194)		-0.019 (0.218)
<b>Observations</b>	15	15	15	15	15	15	15	15
<b>R-squared</b>	0.285	0.280	0.454	0.399	0.357	0.281	0.501	0.403

## Summary

- Increases in Palestinian exports reduce the intensity and even the probability of Palestinians participating into political violence by increasing local employment opportunities.
- Our findings can be better explained by the opportunity cost mechanism than by the resentment of Palestinians towards Israel due to the loss of the Israeli market;
- Better economic conditions should raise the opportunity cost of involvement in the conflict thus lowering its intensity.
- **Facilitating Palestinian trade can be an important strategy to reduce the risk of conflict.**

# Policy Implications

- Facilitating Palestinian trade can be an important strategy to reduce the risk of conflict.

**Thank you**

## Related literature

### (1) Impact of economic shocks, and trade in particular, on conflict

- Positive price shocks reduce the probability and intensity of conflict in countries that export that commodity (*Bruckner and Ciccone, 2010; Berman and Couttenier, 2014; Dube and Vargas, 2013*).
- Positive price shocks have no robust effect on conflict onset (*Bazzi and Blattman, 2014*).



## Related literature

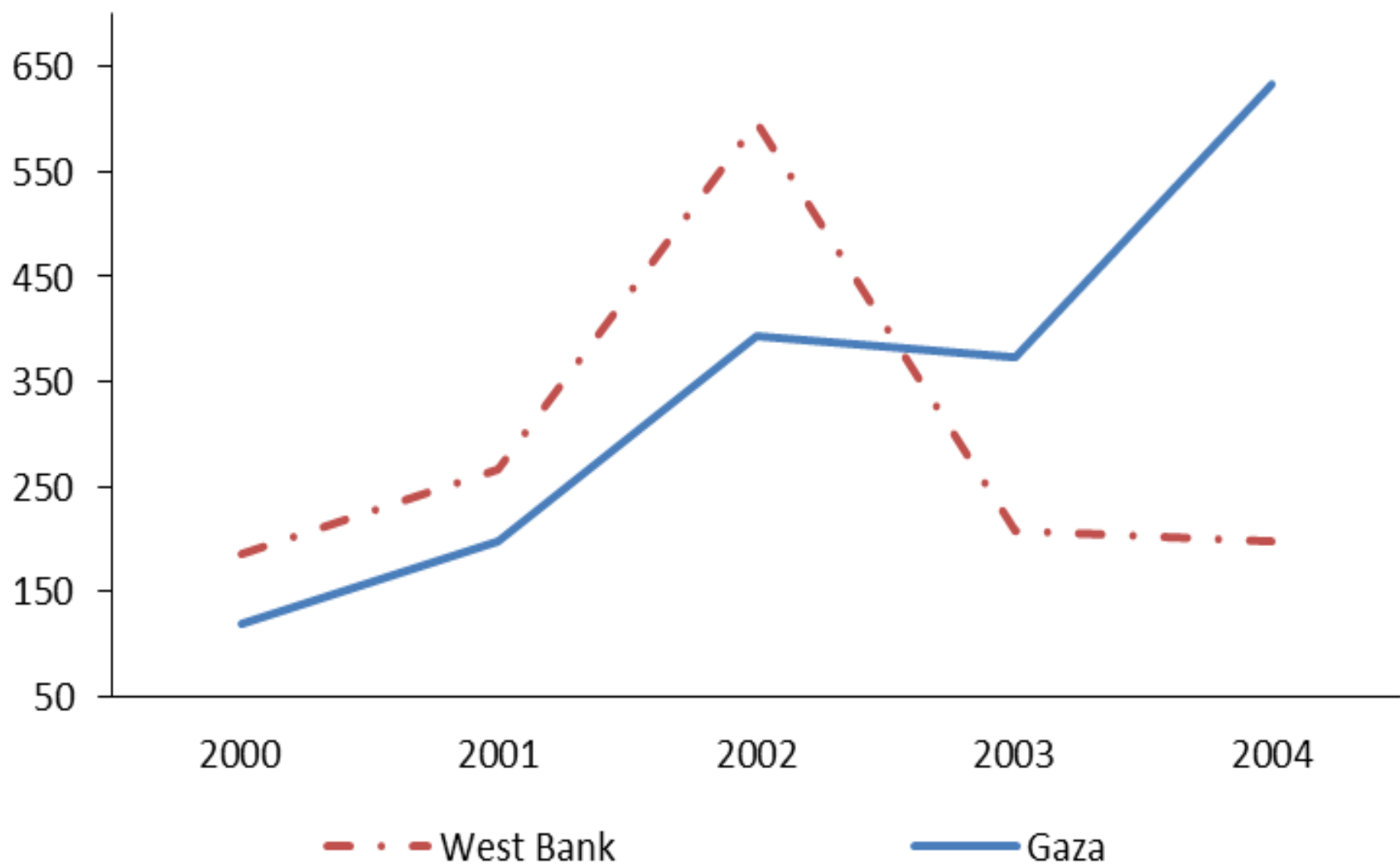
### (2) Relationship between economic factors and violence in the Israeli-Palestinian conflict.

- Few studies have examined the relationship between economic conditions and the involvement of Palestinians in the conflict with Israel:
- Part of these studies found that better economic conditions are associated with less violence (**Saleh**, 2009 ; **Sayre**, 2009; **Miaari** et al.,2014).
- Others found better economic conditions are associated with more violence (**Berrebi**, 2007).

## Related literature

- (3) Impact of trade shocks on welfare and labour outcomes at the sub-national level.
- **India**: Topalova (2010), looks at the impact of trade liberalization on poverty across Indian districts.
  - **US**: Autor et al. (2012), looks at impact of rising import competition from China on local US labour markets.

**Figure 4: Palestinians killed by Israeli forces in the West Bank and Gaza, 2000-2004**



# Identification Strategy

**There are three elements in the empirical analysis which ensure a clean identification of the trade shocks on conflict:**

**First**, there is a substantial variation across Palestinian localities in the pre-Intifada employment's dependence on tradable sectors.

**Second**, this variation is arguably exogenous to the propensity of the locality's residents to be involved in the conflict with Israel.

**Third**, we are able to isolate a key exogenous factor responsible for the changes in Palestinian trade in the pre-Intifada period - i.e. the competition from the foremost emerging global supplier.

# Identification: discussion

**Two possible threats to our identification strategy:**

## **1. Omitted variable bias:**

- Relationship between the locality-specific employment distribution and the dependent variable.

## **2. Reverse causality**

- May be a concern that Israel may use its policies to influence these exports also on the basis of the expected conflict intensity.

**Table A2: Instrumenting Palestinian exports through  
exogenous shocks**

Dep. variable	(1) $\Delta$ Palestinian exports <sub>96-99</sub>	(2) $\Delta$ Palestinian imports <sub>96-99</sub>
$\Delta$ Chinese exports to the world but Israel	-0.005*** (0.000)	0.007*** (0.002)
$\Delta$ World exports	0.001*** (0.000)	-0.001* (0.001)
Other controls	YES	YES
Observations	569	569
R-squared	0.519	0.102

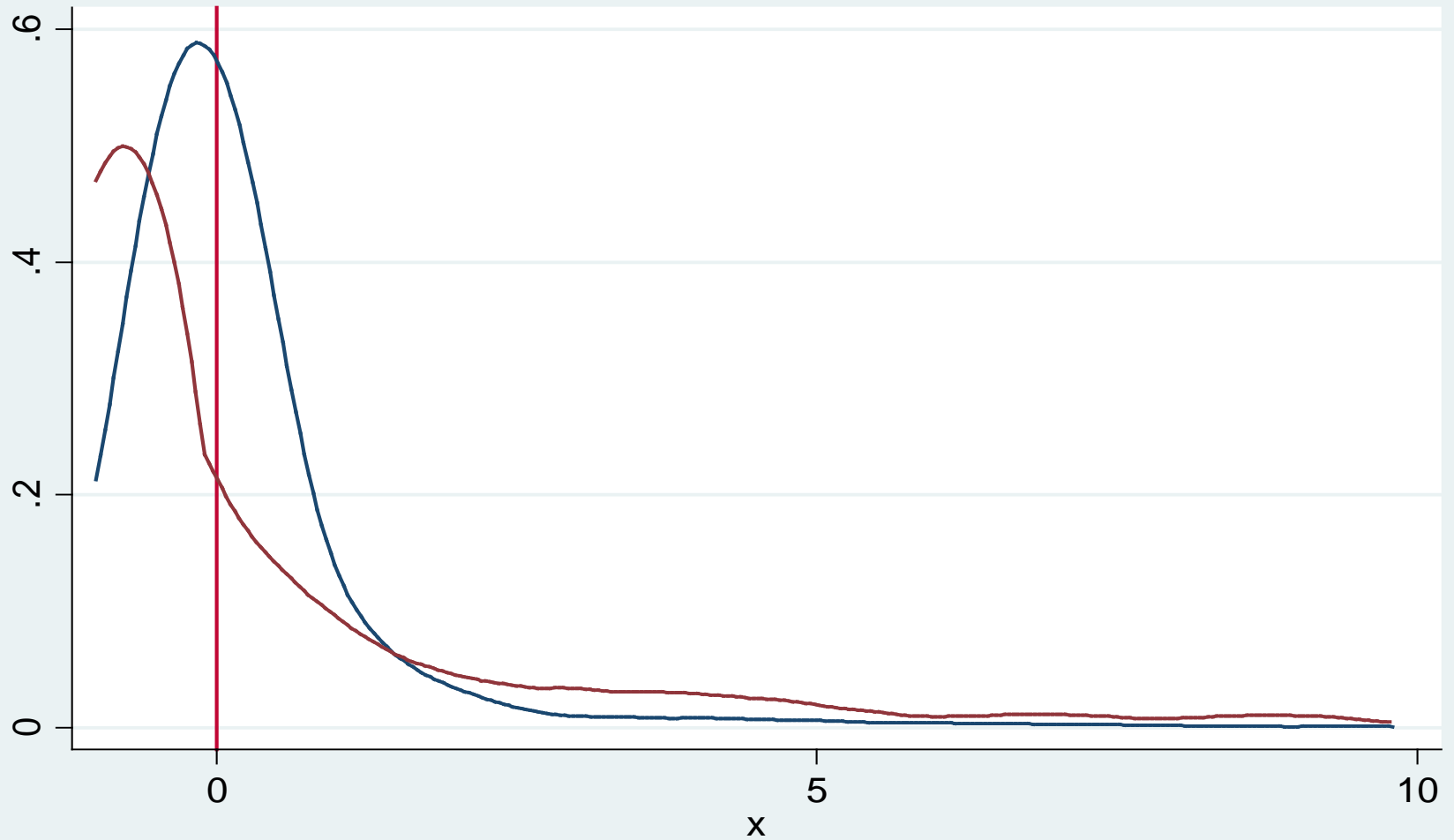
# Do exports lead to higher employment?

**Table 4: The relation between Palestinian exports and employment**

$$\Delta emp_l^{97-07} = \gamma_r + \alpha_1 \Delta EXP_l^{97-07} + B \Delta X_l^{97-07} + \delta f_l^{97-07} + \varepsilon_l$$

	(1) All $\Delta emp_{97-07}$	(2) West Bank $\Delta emp_{97-07}$	(3) Gaza $\Delta emp_{97-07}$
$\Delta$ Palestinian exports <sub>97-07</sub>	<b>0.005***</b> <b>(0.002)</b>	<b>0.005***</b> <b>(0.002)</b>	<b>0.017</b> <b>(0.009)</b>
Main controls	YES	YES	YES
Observations	466	442	24
R-squared	0.076	0.051	0.894

**Figure A1: Distribution of relative changes in Israeli imports and Palestinian exports (1996-99)**



— % change Isr imp. RoW      — % change in tot. Pal. exp.



# Robustness Checks 2

**Table 6: The impact of Palestinian trade on conflict: IV estimation**

	(1)	(2)	(3)	(4)	(5)	(6)
	<b>Palestinian fatalities</b>		<b>Demo Pal. Fatalities</b>	<b>Israeli fatalities</b>	<b>Pal. attacks in Israel</b>	<b>At least 1 Pal fatality</b>
<b>Pred. <math>\Delta</math> Palestinian exp.<sub>96-99</sub></b>	<b>-0.179***</b> <b>(0.039)</b>	<b>-0.134</b> <b>(0.084)</b>	<b>-0.146***</b> <b>(0.057)</b>	<b>-0.198***</b> <b>(0.059)</b>	<b>-0.074</b> <b>(0.048)</b>	<b>-0.088***</b> <b>(0.026)</b>
<b>Main controls</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Labor market controls</b>	No	Yes	No	No	No	No
<b>Observations</b>	569	199	569	569	569	569

# Robustness Checks 3

**Table 7: The impact of Palestinian trade on conflict intensity**

	(1)	(2)	(3)	(4)
$\Delta$ Palestinian imports <sub>96-99</sub>	<b>-0.012*</b> <b>(0.006)</b>	<b>-0.005</b> <b>(0.006)</b>	<b>-0.006</b> <b>(0.008)</b>	<b>-0.015</b> <b>(0.012)</b>
$\Delta$ Palestinian exports <sub>96-99</sub>		<b>-0.121***</b> <b>(0.029)</b>	<b>-0.120***</b> <b>(0.029)</b>	<b>-0.152***</b> <b>(0.056)</b>
$\Delta$ Israeli imports from RoW <sub>96-99</sub>			<b>-0.001</b> <b>(0.004)</b>	<b>-0.007</b> <b>(0.004)</b>
Main controls	Yes	Yes	Yes	Yes
Labor market controls	No	No	No	Yes
Observations	569	569	569	199

# Robustness Checks 3

**Table 8: The impact of Palestinian trade on conflict: IV estimation**

	(1)	(2)	(3)	(4)	(5)	(6)
	Palestinian fatalities		Demo Pal. Fatalities	Israeli fatalities	Pal. attacks in Israel	At least 1 Pal fatality
<b>Pred. <math>\Delta</math> Palestinian imports<sub>96-99</sub></b>	<b>0.133***</b> <b>(0.033)</b>	<b>0.029</b> <b>(0.023)</b>	<b>0.087*</b> <b>(0.046)</b>	<b>0.162***</b> <b>(0.051)</b>	<b>0.060</b> <b>(0.039)</b>	<b>0.067***</b> <b>(0.021)</b>
<b>Main controls</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Labor market controls</b>	No	Yes	No	No	No	No
<b>Observations</b>	569	199	569	569	569	569

# Empirical strategy

A number of estimators are potentially suitable to accommodate this type of specification including: **Poisson, Negative Binomial and zero inflated negative binomial** (Long and Frees, 2006).

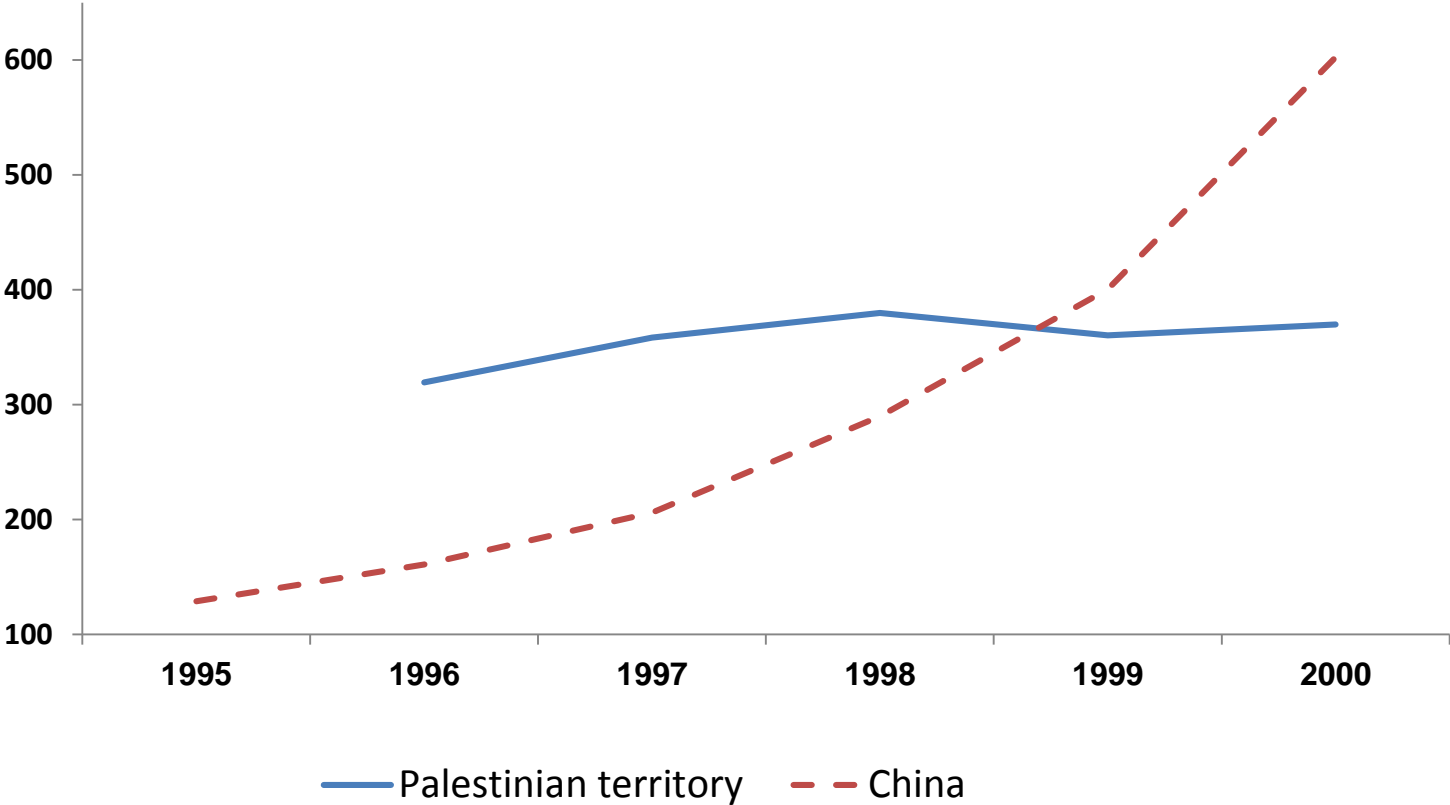
The likelihood ratio test suggests that the negative binomial estimation is preferred to the Poisson model as the unconditional variance of Palestinian fatalities is larger than the mean.

The simple negative binomial estimation is preferred also to the zero inflated negative binomial as the dependent variable is a ‘count zero’ variable, which belongs to the given negative binomial distribution (Wilson and Einbeck, 2016). In other words there is no sub-set of locations in which fatalities are not theoretically possible and in which the dependent variable must be equal to zero by default (the ‘perfect zero’ or ‘structural zero’ types).

**Table 2: Difference in mean across localities above and below the median of  $\Delta$ EXP**

	<b>Below median</b>		<b>Above median</b>			
	Mean	SD	Mean	SD	diff. mean	Prob. to reject equality
<b>Population</b>	7,422	25,782	1,671	2,344	5,751	0.00
<b>Male share</b>	0.51	0.03	0.51	0.03	0.00	0.11
<b>Age 15-40</b>	0.39	0.03	0.39	0.04	0.00	0.47
<b>Education</b>	0.61	0.12	0.62	0.11	-0.01	0.93
<b>Share refugees</b>	0.29	0.33	0.28	0.31	0.01	0.37
<b>Large households (%)</b>	0.33	0.11	0.34	0.11	-0.01	0.91
<b>Married (%)</b>	0.33	0.03	0.32	0.03	0.01	0.00
<b>Gaza</b>	0.07	0.26	0.06	0.23	0.02	0.20
<b>Jerusalem</b>	0.07	0.26	0.03	0.18	0.04	0.02
<b>Dist. to Green Line</b>	14.83	10.05	13.91	8.67	0.91	0.12
<b>Work permits to Israel (per '000)</b>	8.10	8.92	7.96	11.14	0.14	0.43
<b>Unemployment</b>	0.16	0.09	0.16	0.10	0.00	0.55
<b>Empl. Israel (%)</b>	10.06	6.82	11.68	6.98	-1.62	0.95
<b>Avg. wage emp. Israel</b>	99.92	16.77	102.84	14.69	-2.92	0.90
<b>Empl. Public (%)</b>	5.55	3.79	5.80	4.01	-0.26	0.68
<b>Avg. wage emp. pub.</b>	58.44	11.73	61.69	56.52	-3.25	0.74
<b>Private empl. (%)</b>	10.07	6.14	9.22	7.89	0.85	0.19
<b>Avg. wage emp. priv.</b>	62.50	17.67	60.86	16.86	1.65	0.25

**Figure A2: Israeli imports: China vs. Palestinian territory, 1995-2000 (USD mln)**



## Limitations of The Study

- Involvement in the conflict is proxied here by the number of Palestinian fatalities. However, it is clear that some of fatalities are not due to involvement in political violence and that many incidents of violence do not end up costing lives;
- The study does not provide a counterfactual, i.e., we do not know what the intensity of the conflict would have been had Israel not decided to restrict Palestinian trade;