



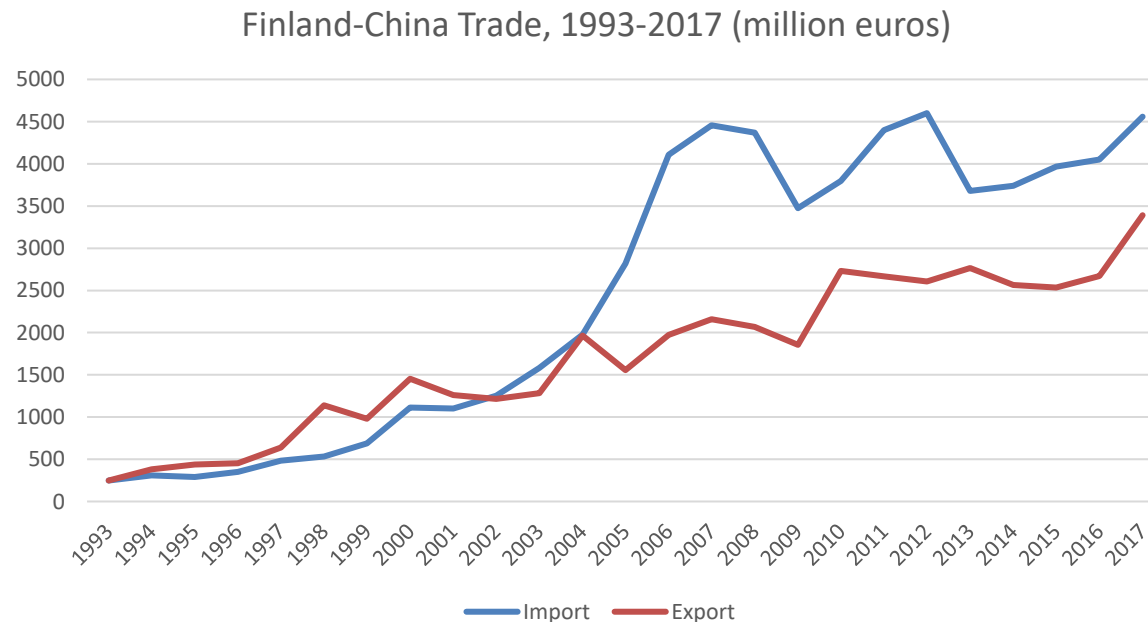
Trade Shocks and Worker Careers: How Globalization Impacts Occupational Mobility, Employment and Earnings

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Introduction

- Middle-skilled manufacturing employment has experienced a rapid decline in many advanced countries over the last few decades
- According to labor market theory, workers from sectors that compete with imports may have to be re-allocated, and that wages may decline as there is an increasing supply of labor in other sectors



Introduction – previous literature

- Several papers have looked at the effects of trade on regional labor markets, industries and firms (e.g., Bernard et al. 2006, Autor et al. 2013, Utar and Torres-Ruiz 2013, Bloom et al. 2016, Pierce and Schott 2016)
- Recently, few papers have looked at the trade impacts at the individual level using a more structural approach (e.g. Artuc et al. 2010, Pessoa 2016, Ashournia 2017)

Introduction – previous literature

- Utar (2018) use data on Danish textile workers and finds that China import competition decreases wages and employment
- Autor et al. (2014) use earnings data (U.S) and find that workers exposed to China import competition accumulate fewer earnings and face a higher risk of exiting labor force
- Lurweg and Uhde (2010) use data from Germany and find small effects on both earnings and unemployment
- Donosa, Martin and Minondo (2010) from Spain find that competition from China increases the unemployment probability

What we do?

- We study the impact of trade shocks on the outcomes of manufacturing workers
- To study the worker-level dynamics we look at occupational mobility, employment, earnings, non-activity and entry into re-education
- First, we follow Utar (2018) and focus on textile industry workers, but we also include a broader set of trade shocks that cover the period past 2001 china WTO membership
- We also distinguish firms that import (cheaper) intermediate products from China and firms that produce products in international and/or domestic trade (TBA)

Data

- FLEED (Total):
 - Firm – worker panel data 2000-14, incl. all firms & workers
 - Combines employment & wage statistics, education registers, tax records, business register, financial statement statistics
- Auxiliary firm level data sources
 - Customs data on goods exports and imports
 - PRODCOM data on industrial inputs and outputs
- Other data sources
 - UN Comtrade data on imports by country pair and detailed goods classification

Variables

1. Outcome variables

- Annual wages including self-employed income
- Employment / unemployment / non-active
- Educational attainment
- Occupation variable is based on ISCO-08 classification and categorized into 4 groups based on Acemoglu & Autor (2011) task measures:
 - 1: Abstract
 - 2: Routine cognitive
 - 3: Routine manual
 - 4: Services

2. Control variables

- Age, gender, education years, marital status, having children under 7 years old, home ownership, size of the firm and firm's turnover

Method 1/2

- We first look at the effect of China import competition on labor market outcomes of textile manufacturing workers (Utar, 2018)
- Quota removals in 2001 from some products
- DID estimation method
- CS (China shock) = 1 for workers who in 2000 worked in textile manufacturing firms that were exposed to China import shock

$$Y_{it} = \alpha_0 + \alpha_1 CS_i \times Post_t + \delta_i + \tau_t + \varepsilon_{it}$$

Method 2/2

- We create a firm-product-country level measure of exposure to increased import from China (cf. Hummels et al., AER 2013). Shocks in trading environment have firm-specific impact depending on how engaged the firm is in trade within a specific affected goods category

- $IV_{it} = \sum S_{ick} WID_{ckt}$

- WID_{ckt} is the country c 's total purchases of product k from China, excluding any demand from Finland. These are weighted by the each c - k combination with its share in Finnish firm's exports

- $Y_{it} = \alpha_0 + \alpha_1 IV_{it-1} + \delta_i + \tau_t + \varepsilon_{it}$

DID estimates: textile industry

	Annual earnings	Employed	Unemployed	Non-active	Re-education	Stay in same occupation	Occupational mobility down	Change to other routine job	Occupational mobility up
All workers									
CS*Post	-0.016 *** (0.008)	-0.056 *** (0.016)	0.037 ** (0.018)	0.095 ** (0.043)	0.244 *** (0.036)	-0.109 *** (0.015)	-0.031 * (0.018)	0.325 *** (0.035)	0.261 *** (0.023)
N. of obs.	194,563	202,533	202,533	202,533	202,533	127,268	127,268	127,268	127,268
Abstract workers									
CS*Post	-0.080 *** (0.015)	-0.213 *** (0.047)	0.087 (*) (0.054)	0.254 ** (0.123)	0.894 *** (0.105)	0.084 *** (0.031)	-0.084 *** (0.031)		
N. of obs.	41,005	41,989	41,989	41,989	41,989	28,244	28,244		
RC workers									
CS*Post	0.094 *** (0.015)	-0.108 (0.075)	0.216 *** (0.083)	0.039 (0.235)	-0.179 (0.203)	-0.493 *** (0.070)	-0.412 ** (0.168)	-0.134 (0.108)	0.793 *** (0.081)
N. of obs.	17,128	17,542	17,542	17,542	17,542	9,925	9,925		24,033
RM workers									
CS*Post	-0.019 ** (0.010)	-0.062 *** (0.017)	0.080 *** (0.020)	-0.014 (0.049)	0.060 (0.041)	-0.248 *** (0.018)	0.133 *** (0.025)	0.362 *** (0.038)	0.243 *** (0.027)
N. of obs.	132,787	139,073	139,787	139,073	139,073	87,683	87,683	87,683	87,683
Service workers									
CS*Post	0.122 (0.081)	0.292 ** (0.123)	-0.504 *** (0.145)	0.622 ** (0.288)	0.011 (0.259)	-0.125 (0.130)			0.125 (0.030)
N. of obs.	2,372	2,507	2,507	2,507	2,507	1,416			1,416



The effect of China import competition on labor market outcomes: all manufacturing industries

	Annual earnings	Employed	Unemployed	Non-active	Re-education	Stay in same occupation	Occupational mobility down	Change to other routine job	Occupational mobility up
All workers									
IV	0.0002 *** (0.0000)	-0.0012 *** (0.00003)	0.0010 *** (0.00004)	0.0009 *** (0.0001)	0.0007 *** (0.00005)	-0.0002 *** (0.00006)	0.0004 *** (0.0001)	-0.0004 * (0.0002)	0.0001 (0.0001)
N. of obs.	4,827,551	4,843,901	4,843,901	4,843,901	4,843,901	3,448,072	3,448,072	3,448,072	3,448,072
Abstract workers									
IV	0.0003 *** (0.0000)	-0.0012 *** (0.00004)	0.0011 *** (0.00004)	0.0010 *** (0.0001)	0.0005 *** (0.0001)	0.0010 *** (0.0001)	-0.0010 *** (0.0001)		
N. of obs.	1,295,758	1,300,462	1,300,462	1,300,462	1,300,462	1,256,523	1,256,523		
RC workers									
IV	-0.0000 (0.00002)	-0.0006 *** (0.0001)	0.0005 *** (0.0001)	0.0010 *** (0.0002)	0.0005 *** (0.0002)	-0.0004 *** (0.0001)	-0.0013 (0.0013)	-0.0013 ** (0.0005)	0.0006 *** (0.0001)
N. of obs.	217,822	218,796	218,796	218,796	218,796	207,621	207,621	207,621	207,621
RM workers									
IV	-0.010 *** (0.010)	-0.0027 *** (0.0001)	0.019 *** (0.0001)	0.0012 *** (0.0002)	0.0030 *** (0.0001)	-0.0030 *** (0.0001)	0.0012 *** (0.0002)	0.0015 *** (0.0002)	0.0028 *** (0.0001)
N. of obs.	2,090,743	2,099,469	2,099,469	2,099,469	2,099,469	1,952,704	1,952,704	1,952,704	1,952,704
Service workers									
IV	-0.0004 *** (0.0002)	0.0046 *** (0.0017)	-0.0055 ** (0.0022)	-0.0013 (0.0038)	0.0005 (0.0007)	-0.0019 *** (0.0006)			0.0019 *** (0.0006)
N. of obs.	34,796	35,096	35,096	35,096	35,096	31,224			31,224



Firms that import intermediate products vs. firms that produce products to trade

- TBA

Results, summary

- Manufacturing workers exposed to China trade experience a significant and persistent decline in employment and rise in unemployment and non-activity rate, except among service workers
- Trade also causes increase in worker's school enrollment particularly among abstract workers
- Interestingly, routine cognitive workers adapt more easily from trade shocks compared to routine manual workers, as they have a higher probability of moving up the job hierarchy
- The results are in line with my other work (Occupational mobility of routine workers, PT working papers, 2018), in which I look at the occupational mobility of routine workers from all industries