# The impact of Chinese import competition on Italian manufacturing

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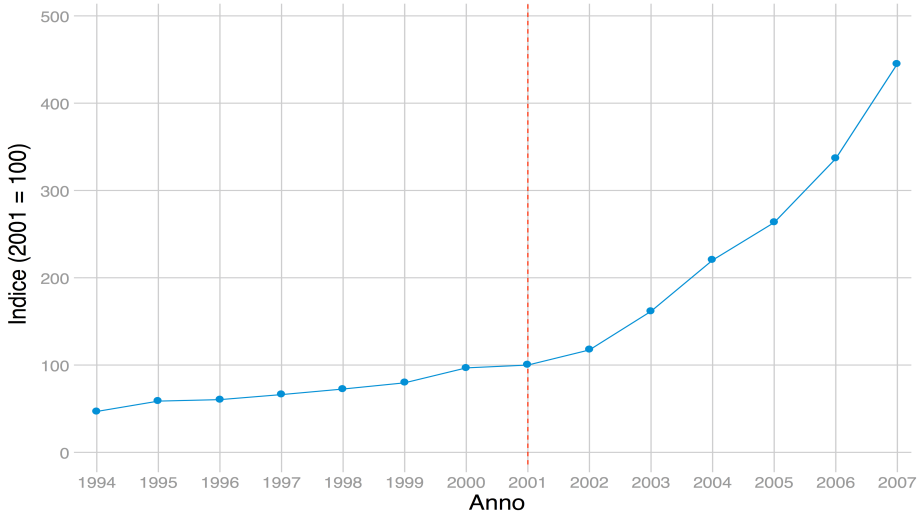
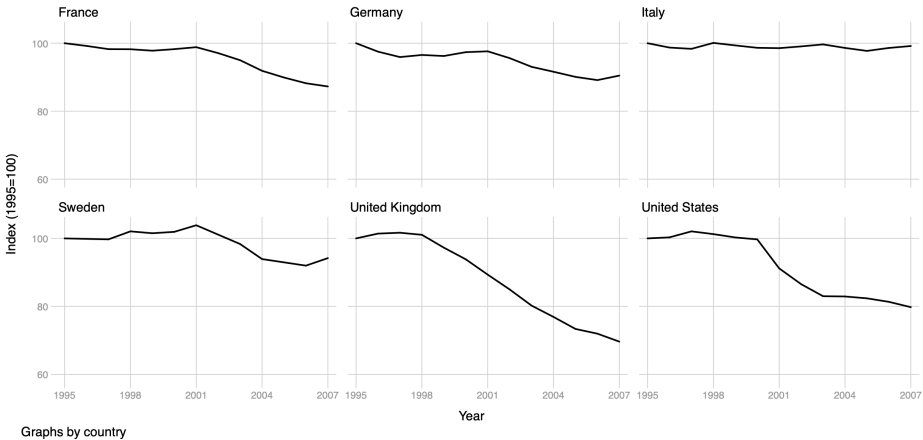
The view expressed herein are those of the authors and not those of the Bank of Italy nor INPS

# Chinese import growth since WTO accession



# Italian manufacturing employment rather stable compared to other OECD countries



# In this paper

Two research questions:

1. How many jobs were lost due to Chinese imports?
   - Census and ASIA data at LLM level with employment by 4-digit industry
   - Exploit within-manufacturing specialization of Italian LLMs
   - Based on Autor, Dorn, Hanson (2013, AER)
2. What happened to workers employed in most exposed industries?
   - VisitINPS data on individual working histories
   - Exploit workers' industry affiliation at end of '80s
   - Based on Autor, Dorn, Hanson, Song (2014, QJE)

- We take a long-run perspective: **1991-2007**
- **IV strategy** $\rightarrow$ Chinese exports to other countries in the same industries

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# Empirical strategy

- Import penetration ratio in industry $j$

$$\Delta IP_{jt}^{ITA} = \frac{\Delta M_{jt}^{ITA}}{Y_{j,91} + M_{j,91} - X_{j,91}}$$

- Import penetration ratio in LLM $i$:

$$\Delta IP_{it}^{ITA} = \sum_{j} \frac{L_{ij,1991}}{L_{i,1991}} \Delta IP_{jt}^{ITA}$$

- $\Delta IP_{it}^{ITA}$ instrumented with Chinese import penetration in other countries (OC): U.S., Australia, Canada, Japan and New Zealand.

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# Estimating local labor market effects

- Our estimating equation is:

$$\Delta Y_{it} = \alpha_r + \gamma_t + \beta \Delta IP_{it}^{ITA} + X'_{i,'91}\delta + \epsilon_{it},$$

- Two stacked long-differences: 1991-2001 and 2001-2007, normalized.
- $\alpha_r$ are 20 "NUTS 2" region fixed effects
- $\gamma_t$ are decade dummy
- $X'_{i,'91}$ = female empl. rate and mfg share of employment in '91.

# More exposed areas suffered decline in manufacturing employment

Table 3: Imports from China and changes in manufacturing employment (2SLS estimates)

| | Δ manuf emp/work age pop (p.p.) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Panel (a) : 1991-2007 stacked differences | | | | |
| $\Delta$Import penetration$^{ITA}$ (p.p.) | -0.253*** | -0.203*** | -0.146*** | -0.132*** |
| | (0.0436) | (0.0478) | (0.0425) | (0.0471) |
| Panel (b) : First stage estimates | | | | |
| $\Delta$Import penetration$^{OC}$ (p.p.) | 0.0621*** | 0.0587*** | 0.0555*** | 0.0585*** |
| | (0.00299) | (0.00333) | (0.00359) | (0.00150) |
| Observations | 1568 | 1568 | 1568 | 1568 |
| K-P F-stat. | 431.9 | 309.5 | 239.5 | 1525.2 |
| Region FE | NO | YES | YES | YES |
| LLM controls | NO | NO | YES | YES |
| Weights | YES | YES | YES | NO |

# How many jobs were lost due to Chinese imports?

Main results at the LLM level

- LLM with average exposure saw **5.1%** decline in mfg. employment
- No corresponding increase in services at local level.

Back-of-the-envelope calculations

- Overall decline small though.
- These correspond to ≈ 24,000 and 119,000 jobs in 90's and 00's, respectively.
- Initial number of mfg. workers ≈ 5.1 mln.

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- These correspond to $\approx$ **24,000** and **119,000** jobs in 90's and 00's, respectively.
- Initial number of mfg. workers $\approx$ **5.1 mln**.

# Estimating individual-level effects

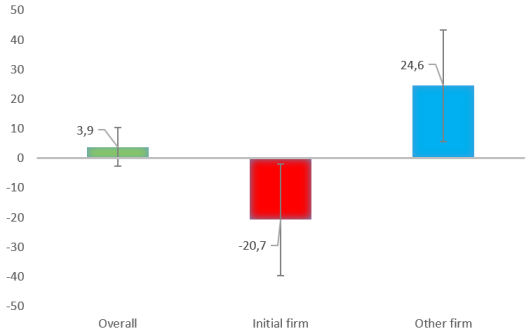
- Our estimating equation is:

$$Y_{ij} = \alpha + \beta_1 \Delta IP_{jt} + \beta_2 IP_{j,91} + X'_{ij}\gamma + X'_j\delta + \theta_k + \eta_s + \epsilon_{ij},$$

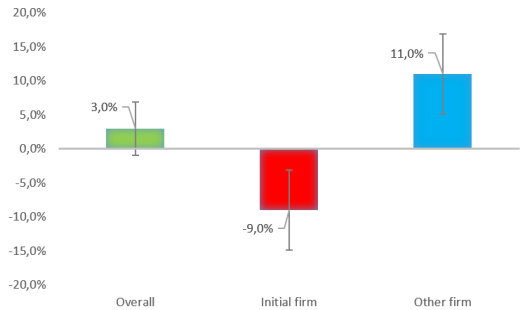
- $Y_{ij}$ outcome for worker $i$ employed in 1991 in industry $j$
- $X'_{ij}$: female, cohort FE, foreign born, PT/FT dummy, job-ladder code
- $X'_j$: % white collars in '91, $\Delta_{'83-'91}$ industry employment share, ...
- $\theta_k$ manufacturing 2-digit sectors dummies
- $\eta_s$ LLM dummies

# Workers changed employer but did not lose overall

Days of employment




Fraction of avg. 88-91 annual earnings




⇒ Implied effects of a **10 p.p.** (IQR) increase in Chinese import penetration

# What happened to workers employed in most exposed industries?

Main results at worker level

- Worker with average exposure **did not** face more discontinuous career
- Nevertheless she spent less time at initial employer

Where have workers transitioned?

- Out of initial 2-dig industry
- Out of manufacturing
- Towards **services**, especially non-knowledge intensive ones
- Towards **other LLMs**, especially outside the region

# Why are effects so small?

Common wisdom

- China exports **low-tech goods** (textile, apparel, furniture, toys,...)
- Italy has comparative advantage in many of these industries

Since early 2000's marked shift towards **consumer electronics**

- e.g. in 2004 *Lenovo* bought PC segment of *IBM* (!)

New evidence from Goldsmith-Pinkham et al. (2019); Bloom et al. (2019)

- China shock driven by computer equipment
- seems linked to **offshoring** of big high-tech firms

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Thanks!

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