

Back to Black?

The Impact of Regularizing Migrant Workers

Edoardo Di Porto¹, Enrica Maria Martino², Paolo Naticchioni³

¹University of Naples, CSEF

²University of Turin, CHILD

³University of Roma 3, AIEL

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A very hot topic!

Kicking out immigrants doesn't raise wages

The Economist, February 4th 2017

Lavoro nero, 77 miliardi di PIL sommerso l'anno

La Stampa, 19 novembre 2016

Motivation

- ▶ The paper merges together two streams of the literature:
 - Public Economics: Tax evasion, amnesties and auditing
 - Labour Economics: Undocumented migrant legalization

Selected related literature

- ▶ Almeida e Carneiro (2012)
 - The impact of larger enforcement on labor market
- ▶ Snow and Warren (2007)
 - Tax evasion \leftrightarrow bayesian updating (expected fine)
- ▶ Devillanova et al. (2014), Pinotti (2016), Chao (2001), Orrenious, Zabodny (2003); Borjas, Tienda (1993)
 - the impact of legalization on labour market outcomes

The paper

- ▶ Evaluation of Italy's largest legalization process ever
- ▶ Data: INPS archives, providing the universe of Italian workers and firms
- ▶ Exploiting an innovative identification strategy, based on unexpected change in the auditing policy for undeclared work

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- ▶ Data: INPS archives, providing the universe of Italian workers and firms
- ▶ Exploiting an innovative identification strategy, based on unexpected change in the auditing policy for undeclared work
- ▶ Two levels of analysis:
 - Firm level analysis, on employment and wages
 - Worker level analysis, on the careers of regularized migrants and co-workers (in progress)

Results in a nutshell

- ▶ Firm level: a short run employment growth, and no effect after one year
- ▶ Firm level: no causal impact on wages

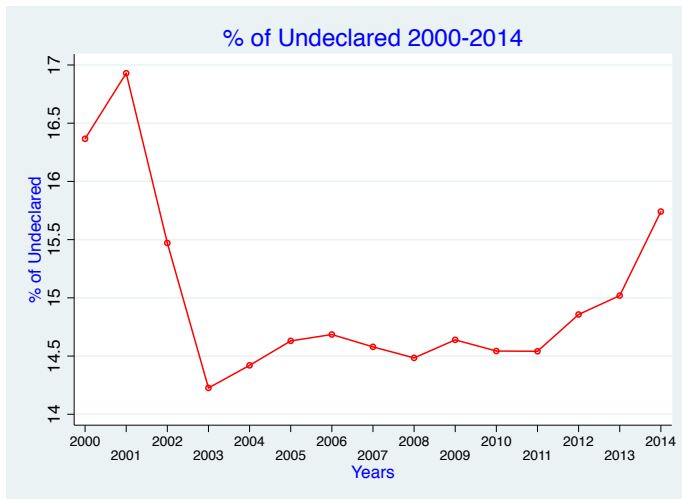
Results in a nutshell

- ▶ Firm level: a short run employment growth, and no effect after one year
- ▶ Firm level: no causal impact on wages
- ▶ Worker level: regularized migrant has an incredibly high survival rate in the economy: 80% after 5 years
- ▶ Preliminary findings: higher exposition to regularization slightly increases the separation rate for blue-collar co-workers (no effect for white collar)

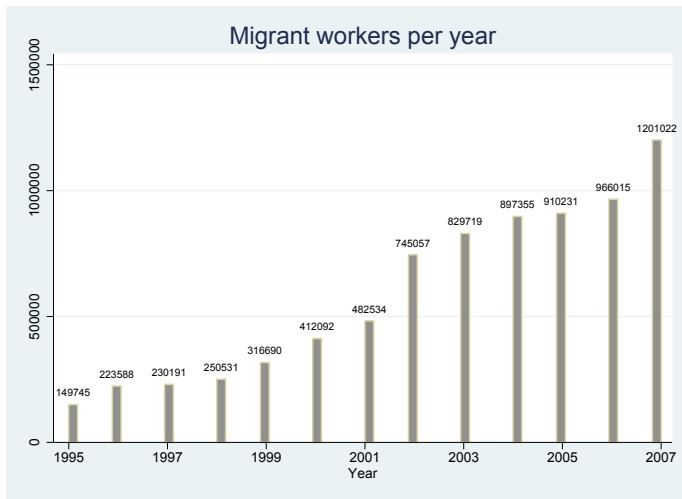
Regularization + Tax Amnesty (*Bossi Fini*) 2002

- ▶ Italy's largest legalization process ever (more than 700k applications). Renewable 2 years work/residence permit to all undocumented migrants whose employers were willing to:
 - Declare that they had continuously employed the immigrant for the three months before the legalization law was passed,
 - Legally hire the immigrant under a minimum one year contract at a minimum monthly salary (439 euros),
 - Pay an amnesty fee (700 euros for all workers).

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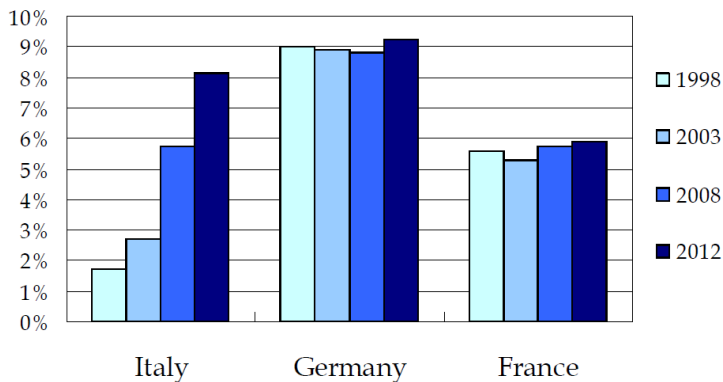


Figure 1: Resident Immigrant trends in Italy, Germany, France.

Social Security Administrative Data - INPS Archives

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 - Allow identifying the firms that undertake the regularization

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 - Nationality, two sources: an INPS provided variable collected from various administrative sources, and when missing place of birth.
- ▶ Auditing data: INPS VG00 archive
 - auditing programs since 2000 to detect undeclared workers (and related fines), at the firm level

Regularization in Italy: Bossi-Fini

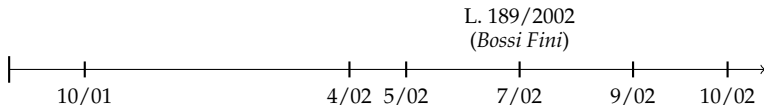
- ▶ Around 209,000 regularized workers, in around 96,000 firms
- ▶ Around 20,000 black firms, that have been regularized

Previous Literature for the Italian case

- ▶ Devillanova, Fasani, Frattini (2014)
 - expectation of the regularization \uparrow employment probability
- ▶ Congia (2007)
 - Only the estimates of the regularized workers
- ▶ Anastasia, Gambuzza, Rasera (2005)
 - Focus on the estimation of regularized workers for an Italian region (Veneto)

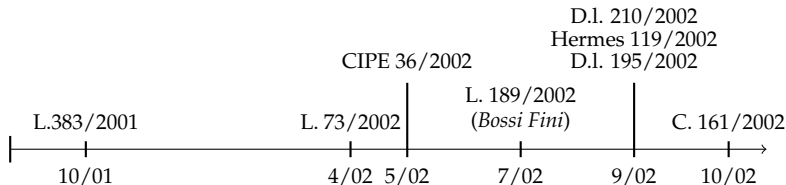
Institutional Background

Policy time frame



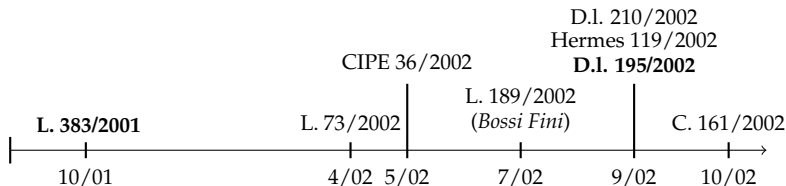
Institutional Background

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Identification Strategy

- Identification problem:
firms self select into the amnesty program

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firms self select into the amnesty program

→ Auditing “383” *exogenous* with respect to the standard auditing programs, since the main aim was to advertize the upcoming it Bossi-Fini Regularization

- Different distribution by regions → Auditing by regions
- Different distribution by sector → Auditing by sectors

Identification Strategy

Relevant characteristics by type of inspection

	2001	2002	Ex 383	Total
Not irregular	39.72	38.18	69.37	46.70
Not fined	14.49	18.27	15.98	16.21
Fined	45.80	43.55	14.65	37.09
Not found	(.)	1.28	0.26	0.52
Migrants	.31	.34	.12	0.30
Fine (median)	2,643	1,800	644	1,893
Fine (mean)	20,219	15,790	3,664	16,710
N	8,580	7,849	5,513	21,951

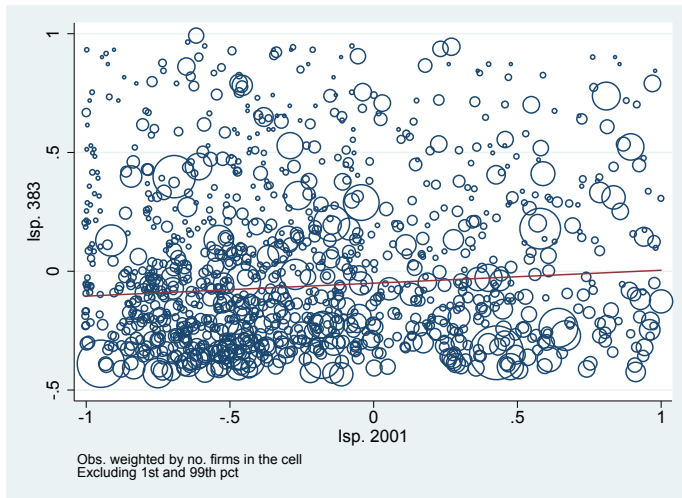
Focus on Lombardia

Identification Strategy

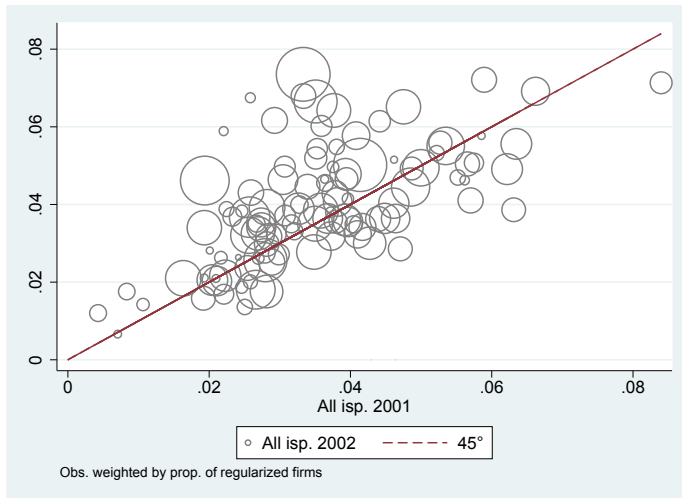
Sector by type of inspection				
	2001	2002	Ex 383	Total
Manufacturing	21.82	22.05	31.58	24.35
Constructions	17.60	15.19	3.35	13.16
Sales	19.58	21.23	30.63	22.95
Transports	2.50	1.96	0.59	1.82
Food&Tourism	19.69	16.61	12.82	16.86
Real estate	1.39	1.86	1.04	1.47
Professionals	1.59	2.06	2.05	1.88
Services	3.52	3.72	2.76	3.40
Health	1.44	0.77	1.14	1.12

Focus on Lombardia - only sectors counting for $\geq 1\%$

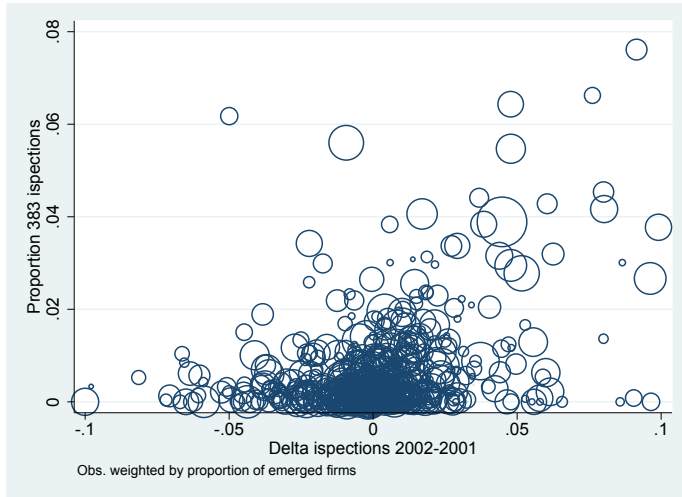
Identification Strategy



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Identification Strategy



The Econometric Model

- ▶ Dependent variables: changes in employment and wages at the firm level between May 2002 (four months before the regularization) and:
 - December 2002, for a short term analysis
 - May and September 2003, for a medium run analysis

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 - December 2002, for a short term analysis
 - May and September 2003, for a medium run analysis
- ▶ Treatment variable: being a regularizing firm
- ▶ Sample of firms at 2002, using also the year 2001 to control for unobserved heterogeneity: panel estimation
- ▶ For this reason we do not consider the “black” firms

The Econometric Model

$$y_{i,c,t} = \beta_0 T_{i,c,t} + \beta_1 x_{i,c,t} + \beta_2 \text{insp}_{c,t-1} + \eta_i + \sigma_c \times \delta_t + \varepsilon_{i,c,t}$$

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$c = \text{SLL} \times \text{sector}$

$x_{i,c}$: age, size of c , North

η_i : individual FE

σ_c : cell FE

δ_t : year FE

$\text{insp}_{c,t-1}$: inspections in c

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$$y_{i,c,t} = \beta_0 \widehat{T}_{i,c,t} + \beta_1 x_{i,c,t} + \beta_2 \text{insp}_{c,t-1} + \eta_i + \sigma_c \times \delta_t + \varepsilon_{i,c,t}$$

$$T_{i,c,t} = \gamma_0 \text{insp}_{383,c,t} + \gamma_1 x_{i,c,t} + \gamma_2 \text{insp}_{c,t-1} + \eta_i + \sigma_c \times \delta_t + v_{i,c,t}$$

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$\text{insp}_{c,t-1}$: inspections in c

Summary Statistics: outcomes

		Empl. May	Empl. Dec.	Wage May	Wage Dec.
Controls	mean	7.87	7.87	1152.94	1129.31
	median	2.00	2.00	1132.75	1108.25
	p25	1.00	1.00	830.40	803.00
	p.75	5.00	5.00	1388.00	1366.83
Treated	mean	5.54	7.45	1419.23	1257.39
	median	1.00	3.00	1435.32	1273.34
	p25	0.00	1.00	1160.98	940.70
	p75	5.00	7.00	1673.95	1515.54

Summary Statistics: instruments and covariates

	383 inspections	Inspections in t-1	Cell's dimension
mean	10.80	26.28	1526.85
median	42.55	70.85	2239.40
min	0.00	0.00	1.00
max	432.00	499.00	13917.00

Variables at the LLM-industry 2digit NACE.

Weighted by cell size

Employment - OLS estimates

	May-Dec '02	May '02-May '03	May '02-Sep '03
Treated	1.48*** (.013)	1.14*** (.041)	-.458*** (.018)
N	2,054,226	1,875,084	1,874,524

Controls included: cells dimension, firm FE, sector \times year FE, SLL \times year FE, inspections in t-1

Excluding outliers (1^o and 99^o pctl of the outcome) and largest firms (99^o pctl in terms of employment in May 2002)

Errors clustered at firm's level

Employment - IV estimates

	May-Dec '02	May '02-May '03	May '02-Sep '03
Treated	2.82*** (.574)	1.06 (.811)	-.93 (.825)
N	2,054,226	1,875,084	1,874,524
KP	86.35	89.08	89.18

Controls included: cells dimension, firm FE, sector×year FE, SLL×year FE, inspections in t-1

IV: Inspections ex lege 383 in the cell, and interacted with north

Excluding outliers (1^o and 99^o pctl of the outcome) and largest firms (99^o pctl in terms of employment in May 2002)

Errors clustered at firm's level

FS instr coeff:0.0001, Prob treat 0.06, instr sd around 100, the effect is 0.01

Total wages - IV estimates

	May-Dec '02	May '02-May '03	May '02-Sep '03
Treated	732.22 (1342.56)	2,248.13 (2162.14)	1,634 (2096.70)
N	2,029,358	1,861,022	1,861,180
KP	80.92	83.49	84.41

Controls included: cell's dimension, firm FE, sector×year FE, SLL×year FE, inspections in t-1

IV: Inspections ex lege 383 in the cell, and interacted with north

Excluding outliers (1^o and 99^o pctile of the outcome) and largest firms (99^o pctile in terms of employment in May 2002)

Errors clustered at firm's level

Employment - Additional specifications

	(1)	(2)	(3)	(4)
Treated	2.82*** (.574)	3.08*** (.661)	3.31*** (.640)	3.06** (1.51)
N	2,054,226	1,797,518	1,789,226	2,058,534
KP	86.35	63.31	108.8	27.67

(1): Baseline specification

(2): Excluding sectors with no regularizing firms

(3): Excluding interaction with north

(4): IV built at province level

Estimates at the LLM level

- ▶ We run similar FE and IV regressions aggregating firm level variables at the LLM level (as for the instrument)
- ▶ Dependent variables: employment change at the LLM level
- ▶ Treatment: number of firms treated at the LLM level
- ▶ controls: number of firms, average firm age, industry compos.

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- ▶ Dependent variables: employment change at the LLM level
- ▶ Treatment: number of firms treated at the LLM level
- ▶ controls: number of firms, average firm age, industry compos.
- ▶ Results are very similar to the firm level ones:
 - Positive employment effect in the short run (similar magnitude)
 - No employment effect after one year
 - No effect on wages

Back to Black?

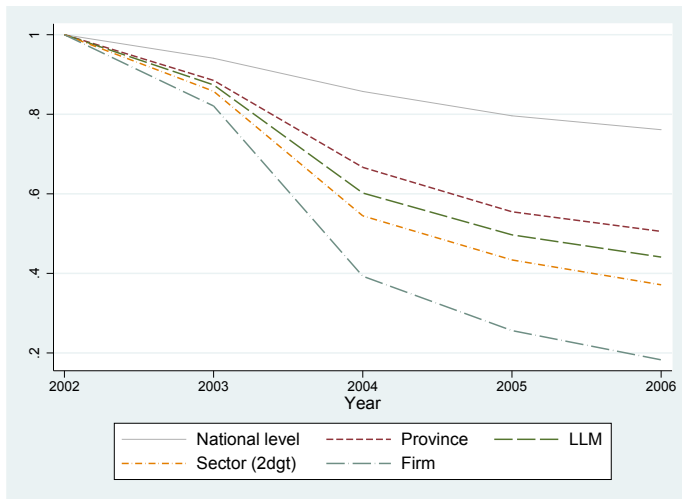
Back to Black?

- ▶ So far, results are disappointing from a policy point of view: effects only on employment in the short run
- ▶ Are migrants going back to black?
- ▶ Is the policy ineffective ?

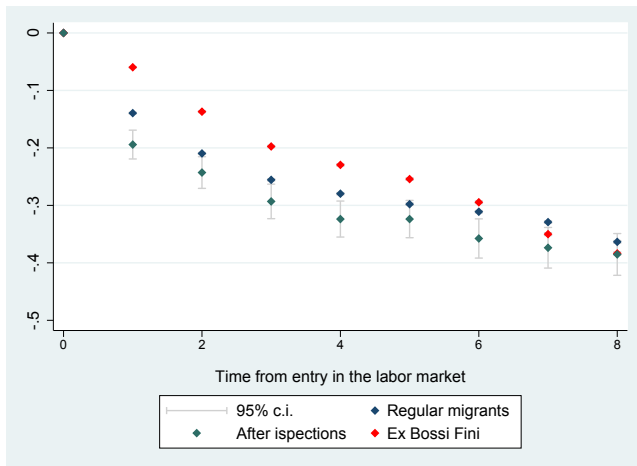
From firms outcomes to individual careers

Back to Black?

Legalized Migrants Survival rate

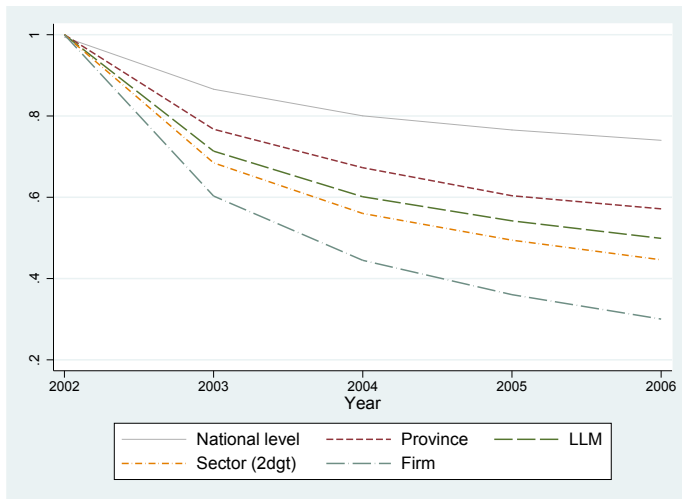


Migrants: legalized vs others

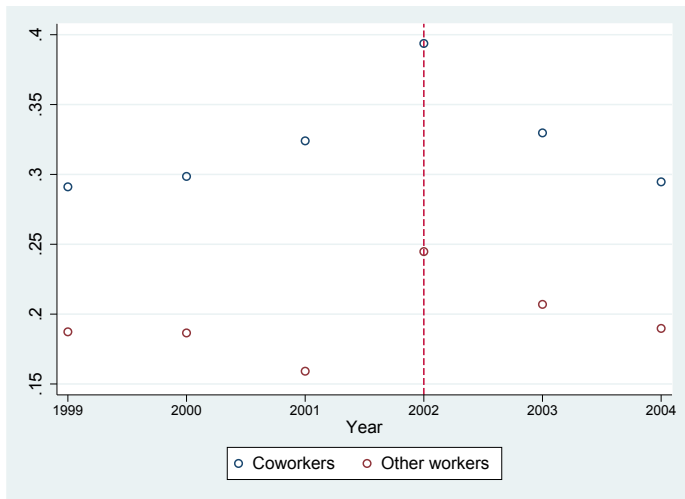


Controlling for citizenship, age, sector and province of entry

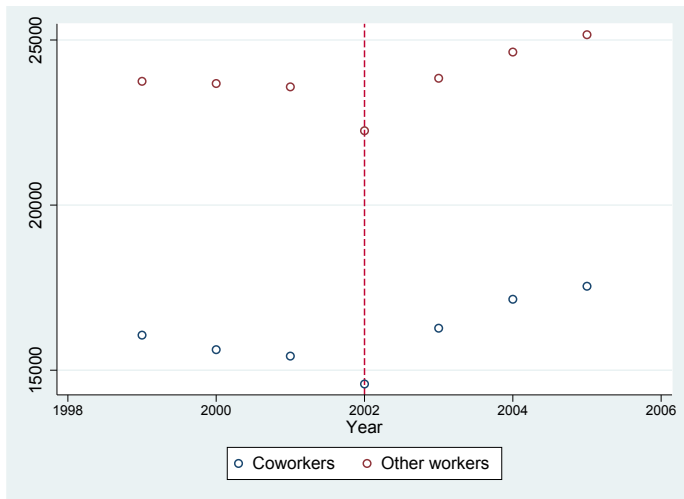
Co-Workers Survival rate



Coworkers separations



Coworkers earnings



The Econometric Model

$$y_{i,f,t} = \beta_0 T_{i,f,t} + \beta_1 x_{i,f,t} + \eta_i + \delta_t + \varepsilon_{i,f,t}$$

- ▶ Panel of co-workers, in 2001 and 2002
- ▶ $y_{i,f,t}$: separation from the firm at t+1; yearly earnings at t+1
- ▶ $T_{i,f,t}$: share of legalized workers in the firm
- ▶ Controls: work experience, firm size
- ▶ Cluster s.e. at the firm level

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FE on Coworkers

	White Collar		Blue Collar	
	Separations	Earnings	Separations	Earnings
Treated	-0.981 (0.146)	471.023 (581.915)	0.095*** (0.035)	-455.900*** (135.502)
N	188,912	188,912	944,174	944,174

Controls included: firm's size, work experience

Standard error clustered at firm level

$0.095 \times 0.12(\text{sd}) = 0.012$ on average the separation rate is 0.41

FE Coworkers and experience

	White Collar		Blue Collar	
	Separations	Earnings	Separations	Earnings
Treated	0.106 (0.135)	1010.279* (608.356)	0.204*** (0.031)	-409.387*** (154.872)
Work Exp	-0.003 (0.011)	182.789 (120.338)	0.026*** (0.005)	109.719
Interaction	-0.372*** (0.056)	-916.949* (436.111)	-0.286*** (0.018)	-455.900*** (161.414)
N	188,912	188,912	944,174	944,174

Controls included: firm's size, work experience dummy: median

Standard error clustered at firm level

Results

► Firm Level Analysis:

- Short run causal impact on employment: negative
- Short run causal impact on wages: non significant
- Medium/long run causal impact: non significant

► Worker level analysis:

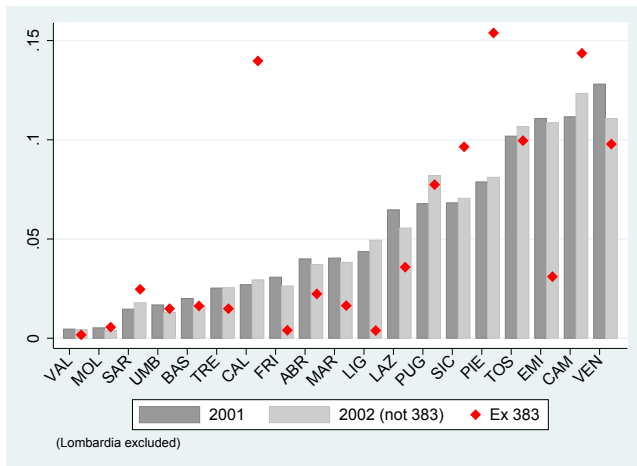
- Legalized migrants do not go *Back to Black!*
- Legalized migrant careers are similar to comparable workers
- Coworkers: We have mixing non causal evidence of separation but the overall effect seems to be very little.

Next steps

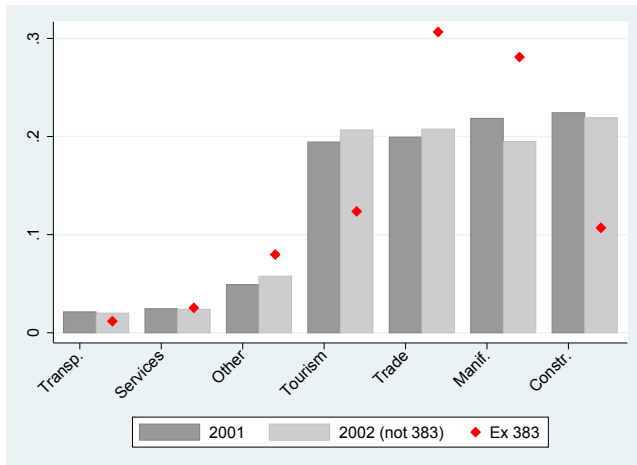
- ▶ Mechanisms:
 - Bargaining power
 - Evidences from 2012
 - Peer effects
 - Complementarities
- ▶ Effects on local labour markets
- ▶ *network* Effects
- ▶ Cost-benefit analysis

Grazie!

Distribution of inspections by region



Distribution of inspections by industry



Evidenza migranti

	Entry characteristics		
	Regular	Ex Bossi Fini	After insp.
Age	29.9	29.7	29.5
Europe	4.1.	54.6	41.4
Asia	19.7	18.3	9.3
Africa	30.2	20.1	37.2
North Am.	0.4	0.04	1.0
Central Am.	2.0	0.4	1.4
South Am.	6.5	6.6	9.7
Australia	0.1	0.0	0.2
Manufacturing	33.2	27.2	26.8
Constructions	16.2	38.2	17.7
Sales	6.0	8.0	6.5
Transports	6.5	5.3	12.0
Food&Tourism	14.3	9.9	19.8
Professionals	2.5	0.6	1.3
Services	12.4	6.4	6.8
Health	1.7	0.4	2.6
N	250,577	194,271	1,174

Evidenza migranti

Entry characteristics			
	Regular	Ex Bossi Fini	After insp.
Abruzzo	1.4	1.4	4.7
Campania	2.0	5.1	2.3
Emilia Romagna	12.0	9.7	16.6
Friuli-VG	3.6	1.4	2.8
Lazio	7.9	11.8	4.0
Liguria	2.1	2.2	1.9
Lombardia	26.4	27.6	20.9
Marche	3.7	2.6	1.0
Piemonte	7.8	9.6	5.8
Puglia	1.4	1.0	1.7
Toscana	8.2	9.3	8.3
Trentino AA	3.4	0.9	2.2
Umbria	1.9	1.9	3.3
Veneto	15.8	13.2	19.4
N	250,577	194,271	1,174