

Immigration, fear of crime and public spending on security

V. Bove L. Elia M. Ferraresi

April 3, 2019

Hostility toward immigration: the three big concerns

- The consequence of immigration for the wage of low-skilled workers (e.g., Peri and Sparber, 2009; Ottaviano and Peri, 2012).
- Perceived fiscal burden placed by immigrants on public finances as recipients of generous social transfers (Preston, 2014; Boeri, 2010).
- The perceived effect of immigration on crime.
 - Immigrants do not increase the overall crime rate or the number of violent crimes a (see e.g., Bianchi et al., 2012; Bell et al., 2013).
 - Yet, anecdotal evidence suggest that immigration is often associated with an increase in the fear of crime.
 - This can lead to the implementation of restrictive regulations and control mechanisms. Does it also lead to unhelpful **additional spending on security?**

- Italy: Since 2007, crime rates have decreased by 25%. Yet, 60% of Italians do not feel safe in their cities and Censis 2018 report finds a “widespread bitterness”, with 75% believing that immigrants lead to an increase in crime. The government has pledged to recruit 10,000 new police officers (Sole 24 Ore, 07/10/18).
- Germany: crime rate in the country in 2017 was at its lowest in 30 years. Yet, 44% of Germans feel less safe in public spaces than a few years ago. To address these concerns, the government has introduced new security measures, including plans to employ 15,000 more police officers (FT, 26/11/18).
- Canada: “Safety survey shows people feel less safe even though crime rate is down” (Ottawa Sun, 23/09/2015)

La Municipale in festa per San Sebastiano. “I reati in calo, ma ci si sente meno sicuri”

La comandante Trentini sul 2017: "Raddoppiati gli sforzi in Gad. Siamo resilienti alla diminuzione delle risorse umane"

di Simone Pesci

“Richiamare un Santo martire per un corpo di polizia significa richiamare il lavoro dentro la città e dentro le case per il bene comune”. Inizia con la messa in Cattedrale, e con le parole del vescovo Gian Carlo Perego, la giornata di San Sebastiano, patrono della Polizia Municipale. Una ricorrenza molto sentita dal corpo, celebrato anche nella Residenza municipale, dove il



- Composition of local government spending for 8,000 Italian municipalities between 2003 and 2015 (Italian Ministry of Interior)
- Foreign-born residents by country of origin (National Statistical Office)
- Degree of cultural affinity using genetic, religious and linguistic distances (Spolaore and Wacziarg, 2009)
- Crime rates (National Statistical Office)
- Survey data on fear of crime and interpersonal trust (WVS)
- Different measures of social capital: no. of nonprofit organizations, no. of newspapers, turnout referendum and divorce, blood donation (various sources)
- Historical data

- The baseline empirical model is specified as follows:

$$s_{it} = \gamma m_{it} + \beta' x_{it} + f_i + f_t + \varepsilon_{it}$$

- s_{it} is the share of public spending devoted to security for municipality i at time t
- m_{it} measures the share of immigrants over the total population in municipality i at year t .
- x_{it} includes the number of inhabitants, population density, age dependency ratio, per capita income tax base, the share of household with low income and indicators for “domestic stability pact”
- $f_i + f_t$ are the municipality and year fixed effects

Results from FE model

Table 2: Migrants and local security spending. Results from fixed effects models.

Dep.var.: Security spending	No controls	Controls	Excluding prov. capital	Excluding municip. <15K	Excluding RSS	Excluding top 5 senders
Migrants (%)	0.03*** (0.01)	0.03*** (0.01)	0.02** (0.01)	0.05* (0.03)	0.02** (0.01)	0.03** (0.01)
Years	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15
Municipalities	7243	7243	7137	623	6196	7243
Observations	94159	94159	92781	8099	80548	94159

All regressions but model 1 include: population density, age dependency ratio, the share of low income households, population, average income, domestic stability pact and time dummies. Model 3 excludes municipalities that are administrative centres of the provinces. Model 4 does not include towns with population lower than 15000 inhabitants. Model 5 excludes regions with special status (RSS): Valle d'Aosta, Friuli Venezia Giulia, Trentino Alto Adige, Sardegna and Sicilia. Model 6 excludes migrants from Romania, Morocco, Albania, China, Ukraine. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Endogeneity of immigrants' settlement

- Individuals might pick municipalities based on, e.g. local economic development or welfare generosity. Twofold strategy:
 - 1 Compute predicted stock of immigrants year-by-year, \tilde{m}_{ijt} , from each source country j , from a gravity model (see Docquier et al, 2016):
$$\log m_{ijt} = \delta' w_{ij} + \lambda' distance_{ij} f_t + f_j + f_t + \epsilon_{ijt}$$
 - 2 Exploit exogenous variation provided by European Union enlargement in 2004, 2007 and 2013 (Jaeger et al., 2018)
- We redistribute the predicted stock of immigrants according to immigrants' settlement in 2003, σ_{ij2003} .

$$\hat{m}_{it} = \sum_j \sigma_{ij2003} \tilde{m}_{ijt}$$

Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic and Slovenia that joined the EU in 2004; Romania and Bulgaria that joined the EU in 2007; and Croatia that joined the EU in 2013.

Results from 2SLS models

Table 3: Migrants and local security spending. Results from 2SLS models.

Dep.var.: Security spending	No controls	Controls	Excluding prov. capital	Excluding mun. <15K	Excluding RSS	Excluding top 5 senders
Migrants (%)	0.14*** (0.02)	0.13*** (0.03)	0.13*** (0.03)	0.26*** (0.05)	0.11*** (0.03)	0.13 (0.11)
FIRST-STAGE						
Migrants (%)	0.22*** (0.01)	0.20*** (0.01)	0.20*** (0.01)	0.47*** (0.03)	0.19*** (0.01)	0.23*** (0.03)
First-stage F-stat	670	618	579	328	496	52
Years	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15
Municipalities	7243	7243	7137	623	6196	7243
Observations	94159	94159	92781	8099	80548	94159

All regressions but model 1 include: population density, age dependency ratio, the share of low income households, population, average income, domestic stability pact and time dummies. The share of migrants is instrumented with the predicted share of migrants stemming from countries that joined the EU between 2004 and 2013, multiplied by a time dummy that equals one for years since the accession and zero otherwise. Model 3 excludes municipalities that are administrative centers of the provinces. Model 4 does not include towns with population lower than 15000 inhabitants. Model 5 excludes regions with special status (RSS): Valle d'Aosta, Friuli Venezia Giulia, Trentino Alto Adige, Sardegna and Sicilia. Model 6 excludes migrants from Romania, Morocco, Albania, China, Ukraine. Standard errors are clustered at the municipality level. *** significant at 1%, ** significant at 5% * significant at 10%.

Robustness checks I

Dep.var.: Security spending	(i)	(ii)	(iii)	(iv)
Migrants (%)	0.14*** (0.04)	0.14*** (0.04)	0.09*** (0.03)	0.10*** (0.14)
Grants _{t-1}	-0.16*** (0.04)			-0.15*** (0.05)
Fees & charges _{t-1}		0.20** (0.09)		0.20** (0.09)
Security spending _i (%)			0.24*** (0.01)	0.23*** (0.01)
FIRST-STAGE				
$\widehat{\text{Migrants}}_i$ (%)	0.18*** (0.01)	0.18*** (0.01)	0.20*** (0.01)	0.18*** (0.01)
First-stage F-stat	409	409	607	403
Years	2004-15	2004-15	2003-15	2004-15
Municipalities	7243	7243	7243	7243
Observations	86916	86916	94159	86916

Variables *Grants* and *Fees & charges* are divided by 1,000. All regressions include: population density, age dependency ratio, the share of low income households, population, average income, domestic stability pact and time dummies. The share of migrants is instrumented with the predicted share of migrants stemming from countries that joined the EU between 2004 and 2013, multiplied by a time dummy that equals one for years since the accession and zero otherwise. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Robustness checks II

Dep. var.: $\widehat{\text{Migrants}} (\%)$	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population ₂₀₀₁₋₁₉₉₁	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Observations	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232
Population density ₂₀₀₁₋₁₉₉₁	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00* (0.00)	-0.00* (0.00)
Observations	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232
Income p.c. ₂₀₀₂₋₂₀₀₁	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Observations	7205	7205	7205	7205	7205	7205	7205	7205	7205	7205	7205	7205
Houses ₂₀₀₁₋₁₉₉₁	0.04 (0.10)	0.05 (0.11)	0.06 (0.13)	-0.40 (0.38)	-0.43 (0.43)	-0.43 (0.43)	-0.41 (0.45)	-0.34 (0.36)	-0.35 (0.40)	-0.38 (0.46)	-0.36 (0.47)	-0.38 (0.49)
Observations	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232
Unemployment rate ₂₀₀₁₋₁₉₉₁	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Observations	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232	7232

Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Is the effect heterogeneous across migrant groups?

- An important question is whether the **increase in security spending** differs according to immigrants' origin.
- We use two measures of native-immigrants cultural similarity:
 - ① Immigrants from OECD countries or from EU15 countries;
 - ② Weighted cultural distance between native and immigrants (Spolaore & Wacziarg, 2009) calculated as:

$$WCD_{in} = \sum_{j=1}^N (\pi_{ij} \times d_{nj})$$

where d_{nj} is the genetic, linguistic and religious distance.

Migrants from OECD/nonOECD countries

Dep.var: Security Spending		
Migrants OECD(%)		-0.11
		0.58
Migrants non-OECD(%)		0.13***
		0.03
	FIRST-STAGE MIGRANTS	FIRST-STAGE MIGRANTS
	OECD	NON-OECD
$\widehat{\text{Migrants OECD}} (\%)$	-0.11**	0.16
	(0.52)	(0.13)
$\widehat{\text{Migrants non-OECD}} (\%)$	-0.01*	0.21***
	(0.00)	(0.01)
First-stage F-stat	4.43	392
Years		2003-15
Municipalities		7243
Observations		94159

All regressions include: population density, age dependency ratio, the share of low income households, population, average income and domestic stability pact. The share of migrants OECD is instrumented with the predicted share of OECD migrants stemming from countries that joined the EU between 2004 and 2013, multiplied by a time dummy that equals one for years since the accession and zero otherwise. The share of migrants non-OECD is instrumented with the predicted share of non-OECD migrants stemming from countries that joined the EU between 2004 and 2013, multiplied by a time dummy that equals one for years since the accession and zero otherwise. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Cultural distance and local security spending

Dep.var.: Security spending	Distance			
	Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious
WCD _{int}	0.17*** (0.04)	0.10*** (0.02)	0.05*** (0.01)	0.05*** (0.01)
FIRST-STAGE WCD _{int}	0.08*** (0.01)	0.18*** (0.01)	0.27*** (0.01)	0.28*** (0.01)
First-stage F-stat	266	243	592	651
Years	2003-15	2003-15	2003-15	2003-15
Municipalities	7243	7243	7243	7243
Observations	94159	94159	94159	94159

All regressions include: population density, age dependency ratio, the share of low income households, population, average income and a dummy for domestic stability pact. The share of migrants is instrumented with the predicted share of migrants stemming from countries that joined the EU between 2004 and 2013, multiplied by a time dummy that equals one for years since the accession and zero otherwise. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: crime rates

Dep.var.: Crime rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		0.00 (0.00)					
Security spending			-0.00 (0.00)				
WCD _{int}				0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Years	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15
Provinces	91	91	91	91	91	91	91
Observations	1092	1092	1092	1092	1092	1092	1092

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available. *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: bash rates

Dep.var.: Bash rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		0.00 (0.00)					
Security spending			0.00 (0.00)				
WCD _{int}				0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available. *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: injury-crime rates

Dep.var.: Injury crime rate	Distance						
	Genetic		Linguistic (cognate)		Linguistic (common nodes)		Religious
Migrants (%)	0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		0.00 (0.00)					
Security spending			-0.00 (0.00)				
WCD _{int}				0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available.
 *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: threats-crime rates

Dep.var.: Threats crime rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		0.00 (0.00)					
Security spending			-0.00 (0.00)				
WCD _{int}				0.00* (0.00)	0.00 (0.00)	0.00* (0.00)	0.00* (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available. *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: theft-crime rates

Dep.var.: Theft crime rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		0.00 (0.00)					
Security spending			-0.00** (0.00)				
WCD _{int}				-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available.
 *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: robbery-crime rates

Dep.var.: Robbery crime rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	-0.00 (0.00)		0.00 (0.00)				
Migrants OECD(%)		-0.00 (0.00)					
Migrants non-OECD(%)		-0.00 (0.00)					
Security spending			0.00 (0.00)				
WCD _{int}				-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available.
 *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: counterfeiting-crime rates

Dep.var.: Counterfeiting crime rate	Distance						
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants (%)	-0.00 (0.00)		-0.00 (0.00)				
Migrants OECD(%)		0.00 (0.00)					
Migrants non-OECD(%)		-0.00 (0.00)					
Security spending			0.00 (0.00)				
WCD _{int}				0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Years	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15	2010-15
Provinces	91	91	91	91	91	91	91
Observations	546	546	546	546	546	546	546

All regression are estimated using province-level data. Controls include: population density, age dependency ratio, share of poor households, population size, average gross income. Standard errors are clustered at the province level. Data from 2009 are not available.
 *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: fear of crime

	Dep.var.: Fight against crime		Dep.var.: Immigrants increase crime	
Neighbors of different race	0.08** (0.04)		0.14*** (0.05)	
Foreign neighbors		0.13*** (0.04)		0.17*** (0.05)
Years			2009	
Observations	1367	1367	867	867

Marginal effects shown. All regressions control for: gender, marital status, seven dummies for employment status, squares in ages, number of kids, religion, two dummies for income. Robust standard errors of models in Panel A are clustered at the municipal (province) level. In Panel B standard errors are robust to heteroskedasticity. *** significant at 1%, ** significant at 5% * significant at 10%.

Transmission mechanism: social capital

PANEL A						
	Dep.var.: no. of non-profit organizations per capita					
			Distance			
			Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious
Migrants (%)	-0.038*		0.34	-2.10**	-1.29*	-0.97*
	(0.02)		(0.88)	(0.99)	(0.70)	(0.60)
Migrants OECD(%)		0.10				
		(0.15)				
Migrants non-OECD(%)		-0.04**				
		(0.02)				
Years	2003;2013	2003;2013	2003;2013	2003;2013	2003;2013	2003;2013
Municipalities/Provinces	6969	6969	6969	6969	6969	6969
Observations	13938	13938	13938	13938	13938	13938
PANEL B						
	Dep.var.: Interpersonal trust			Dep.var.: civic cooperation		
Neighbors of different race	-0.11***			-0.81***		
	(0.02)			(0.22)		
Foreign neighbors		-0.12***			-0.95***	
		(0.02)			(0.22)	
Years			1990; 1999; 2009			
Observations	4587	4581		4635	4628	

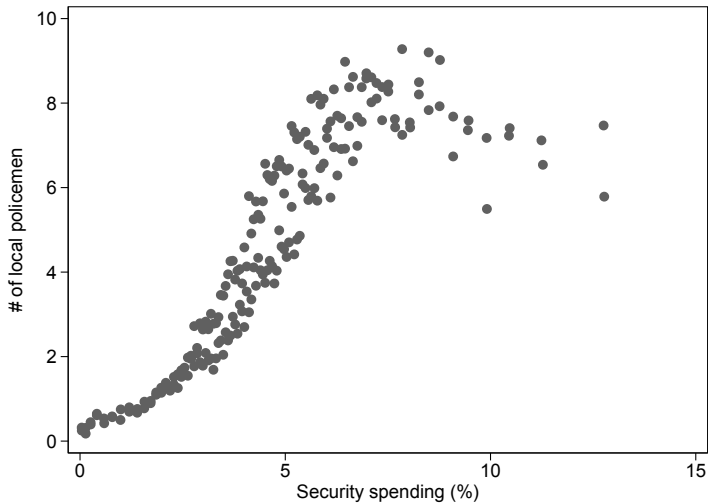
β s in column 1-6, Panel A are multiplied by 1,000. All regressions of Panel A include: population density, age dependency ratio, the

Transmission mechanism: voting

Dep.var.: right-wing mayor	Distance				
	Genetic	Linguistic (cognate)	Linguistic (common nodes)	Religious	
Migrants _{t-1} (%)	0.02* (0.01)				
Migrants OECD _{t-1} (%)		-0.06 (0.10)			
Migrants non-OECD _{t-1} (%)		0.03** (0.01)			
WCD _{in,t-1}		0.01** (0.01)	0.01 (0.01)	0.01* (0.00)	0.01* (0.00)
Years	2004-15	2004-15	2004-15	2004-15	2004-15
Municipalities	315	315	315	315	315
Observations	3780	3780	3780	3780	3780

All regressions include: population density, age dependency ratio, the share of low income households, population and average income. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Security spending



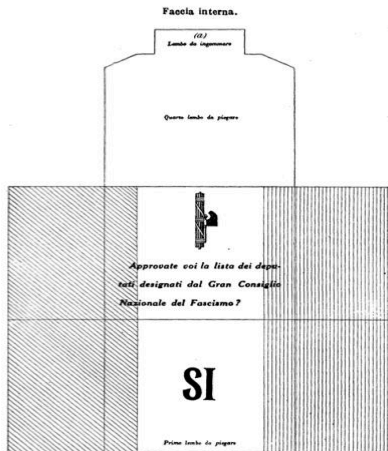
Dep. var.	total			disaggregated				
	revenue	spending	surplus	Admin	TPE	CST	SE	SB
Migrants (%)	-8.81*** (1.60)	-6.47*** (1.25)	-2.33*** (0.83)	-0.03 (0.02)	0.04 (0.03)	-0.03*** (0.01)	0.04 (0.02)	-0.04*** (0.01)
Years	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15	2003-15
Municipalities	7243	7243	7243	7243	7243	7243	7243	7243
Observations	94159	94159	94159	94159	94159	94159	94159	94159

^ Admin: Administration & Management Services. TPE: Roads & Transport Services, Planning & Environment Services. CST: Culture, Sport and Tourism Services. SE: Social Services and Education Services. SB: Economic development. All regressions include: population density, age dependency ratio, the share of low income households, population, average income, domestic stability pact and time dummies. Standard errors are clustered at the municipality level.*** significant at 1%, ** significant at 5% * significant at 10%.

Historical instruments



(a) Lembo da inumidire dall'elettore per la chiusura della scheda, dopo averla ripiegata secondo le indicazioni ivi contenute.



(a) Lembo da inumidire dall'elettore per la chiusura della scheda, dopo averla ripiegata secondo le indicazioni ivi contenute.

Do immigrants prompt changes in public spending decisions in receiving municipalities?

- ✓ Yes, immigration leads to an increase in public spending for police protection.
- ✓ This is at the expense of the budget allocated to culture, tourism and economic development.
- ✓ The effect is stronger the higher the cultural distance between Italy and home

What are the transmission mechanisms?

- ✓ No effect of immigration on crime rates
- ✓ Increase in people's fear of future crimes, as opposed to the actual probability of being a victim of crime.
- ✓ Immigration is also associated to a deterioration in the strength of social ties and interpersonal trust e