Diaspora Externalities: A View from the South

UNI-WIDER Conference on Migration and Development
Accra, October 6, 2017

Hillel Rapoport | hillel.rapoport@psemail.eu

Paris School of Economics, Université Paris 1 Panthéon-Sorbonne

Migration Externalities

- The decision to migrate is based on the costs and benefits people expect for themselves and for their loved ones
- But there are unintended consequences on other people's welfare…
- Some are internalized by markets (e.g., wage effects) and some are not
- In the latter case economists call this an ***externality***

Migration Externalities

Migration externalities (as any type of externalities) can be good or bad:

- They should be (but seldom are) accounted for by policy makers
- Examples of negative migration externalities:
  - Emigrants can fuel civil conflict in their home countries
  - Remittances may lead to the so called "Dutch Disease"
  - Brain Drain → Lucas externality

Migration Externalities

- Examples of positive migration externalities:
  - Brain Drain → Brain Gain (endogenous human capital)
  - Diaspora networks can help to integrate the home country into the global economy : ***economic integration***
  - Diaspora networks transfer behavioral and cultural norms to their home communities: ***cultural integration***

What is this lecture about?

Diaspora externalities in terms of global economic and cultural integration, with:

- A focus on "development" (i.e., when the source country of migrants is a developing country)
- A focus on South-South migration when possible (i.e., when data constraints allow)
- A focus on the economics literature, with partial (i.e., biased coverage)

Road Map

Diaspora Externalities and Development

1. Economic integration into the global economy
    - The trade-creating effect of migration
    - Migration and Financial Investments (e.g., FDI, loans)
    - Knowledge and technology diffusion**
2. Cultural integration: social remittances
    - Political Remittances*
    - Malthusian and other types of social remittances*
    - Migration and cultural convergence**

1.
Economic integration: Diasporas and the global economy

A. Migration and Trade

The Trade-Creating Effect of Migration

Migration networks can have very strong trade-creating effects through two possible channels:

- ***Information Effect*** = migrants increase bilateral trade because they reduce bilateral information costs
- ***Preference Effect*** = migrants increase demand for goods from their home countries

→ Both effects indicate that migration and trade are complements!

The Trade-Creating Effect of Migration

Information Effect

- Migrants bring knowledge of origin and host markets, institutional and business environment, language skills etc.
- Evidence of network effects particularly for differentiated goods or goods with a high "cultural content"
  - *Rauch and Trindade (2002) Rauch and Casella (2003) and Felbermayr and Toubal (2012)*

The Trade-Creating Effect of Migration

Cross Country Evidence: ***Migration boosts Trade!***

- Gould (1994) for US; Head and Ries (1998) for Canada show that immigrants expand trade with their country of origin. Elasticities around 10 percent for exports (information) and 30 percent for imports (information+preferences).
- Felbermayr and Jung (2009) obtain similar elasticities in a fully bilateral setting (South-North migration to OECD countries), with no evidence of stronger effects for skilled immigrants; see also Felbermayr and Toubal (2012) on information.
- However: *"it is difficult to draw causal inferences from these results since immigration may be correlated with unobserved factors that affect trade, such as trading partners' cultural similarity or bilateral economic policies"* (Hanson 2007)

The Trade-Creating Effect of Migration

Cross Country Evidence: ***Migration boosts Trade!***

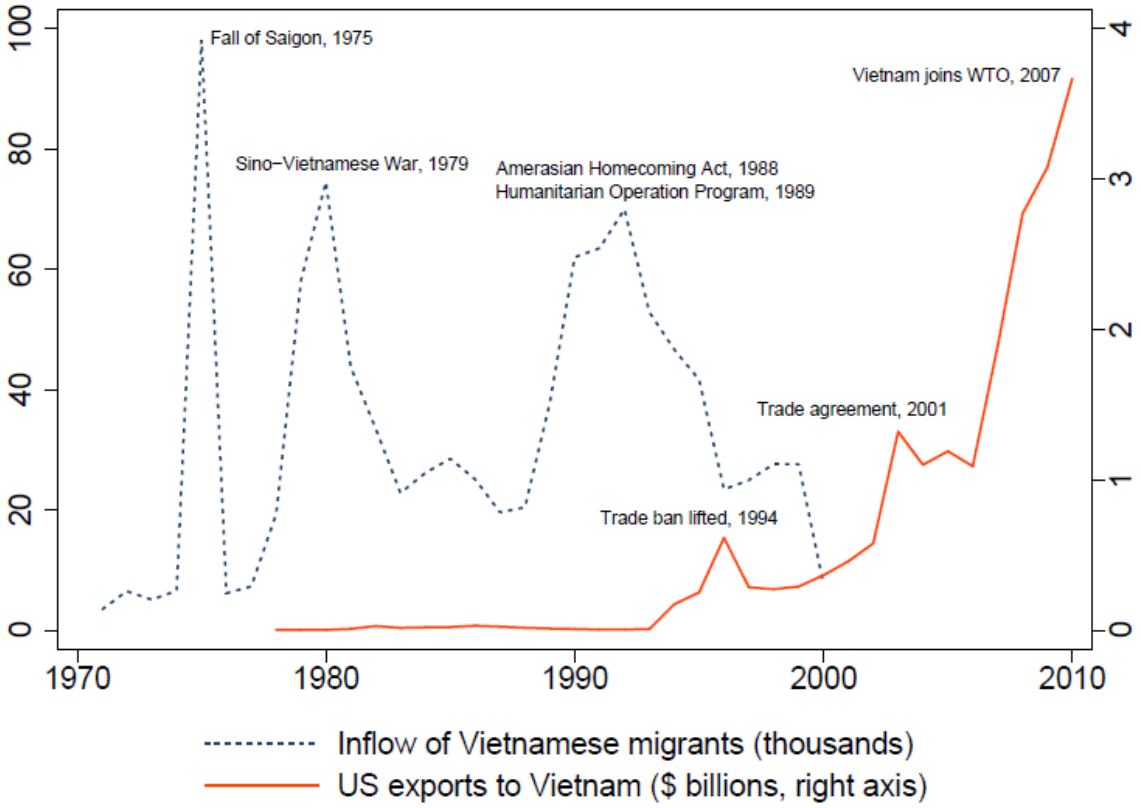
- However: *"It is difficult to draw causal inferences from these results since immigration may be correlated with unobserved factors that affect trade, such as trading partners' cultural similarity or bilateral economic policies"* (Hanson 2007)

Solution: ***Natural experiments!***

- Parsons and Vezina (forthcoming EJ): "Migrant Networks and Trade: The Vietnamese Boat People as a Natural Experiment"
- Ingredients: large immigration inflow of Vietnamese Boat People to US between 1975-1994 with concurrent Trade Embargo; quasi-random allocation Vietnamese Refugees in 1975

The Trade-Creating Effect of Migration

Figure 1: Vietnamese Boat People and US Exports to Vietnam



Sources: US Census 2000 and USITC.

The Trade-Creating Effect of Migration

Parsons and Vezina (forthcoming)

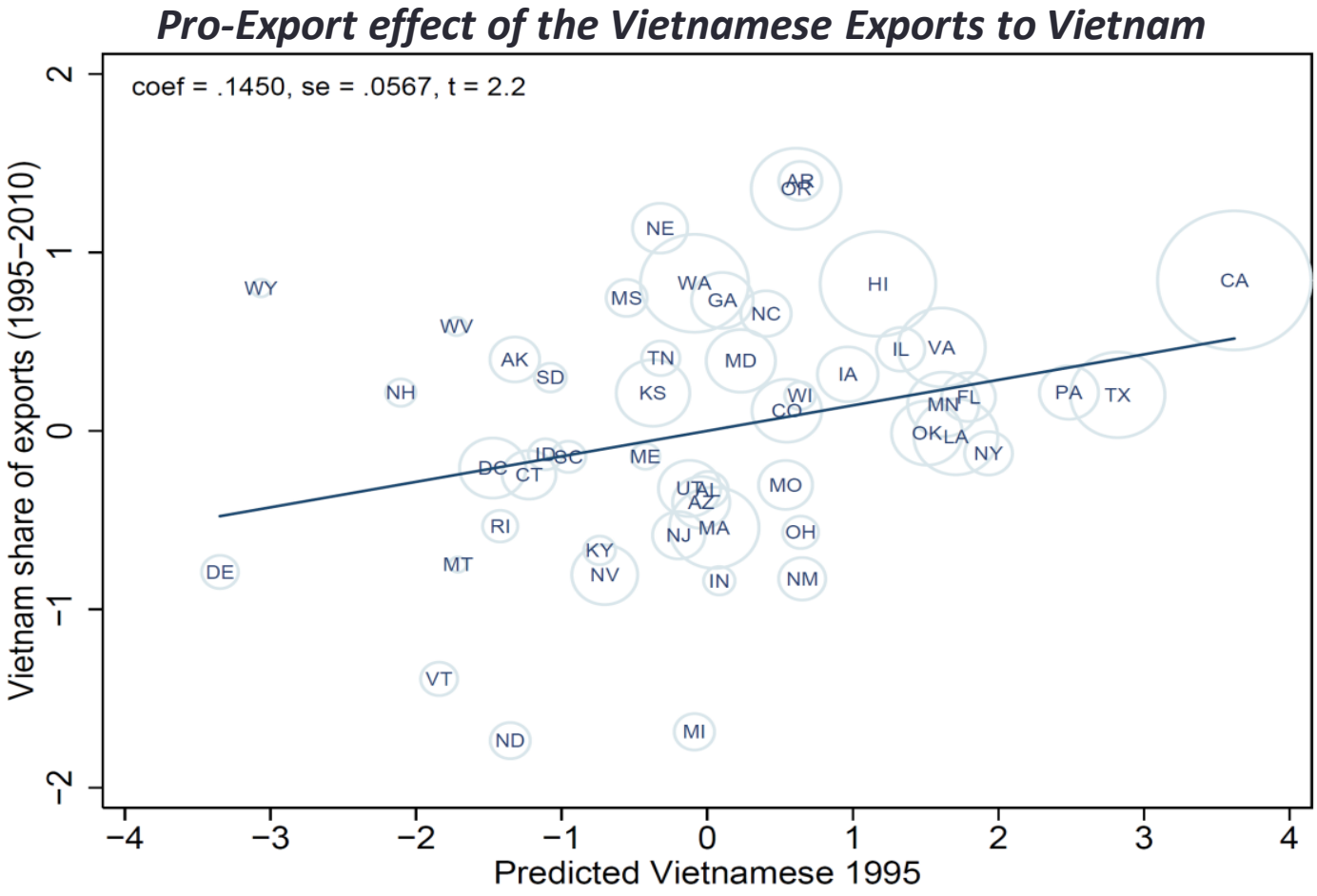
- Key assumption for natural experiment is that initial allocation Vietnamese is quasi-random, e.g. uncorrelated with immigrant preferences and exogenous to economic opportunities to trade with Vietnam

- Authors argue that the political chaos during that time and the case overload created a quasi random allocation of refugees

- Authors show that refugee characteristics are uncorrelated with US State characteristics

The Trade-Creating Effect of Migration

Parsons and Vezina (forthcoming)



The Trade-Creating Effect of Migration

Table 3: Results - IV

	(1)	(2)	(3)	(4)	(5)
	First Stage	Exports to Vietnam share of			
	Vietnamese 1995	Exports	GDP	Extensive margin	Exports to Asia
Vietnamese 1995		0.145**	0.198***	0.271***	0.134**
		-0.0567	(0.0605)	(0.0256)	(0.0573)
Income per capita	1.214	0.667	-0.901	-0.560*	0.0192
	(0.747)	(0.720)	(0.856)	(0.328)	(0.802)
Remoteness	-6.03e-05	0.408**	0.163	-0.412***	0.140
	(0.202)	(0.196)	(0.338)	(0.0868)	(0.183)
Export structure	-0.353***	0.214**	0.232*	0.0214	0.365***
	(0.108)	(0.100)	(0.135)	(0.0296)	(0.0910)
Refugees 1975	1.296***				
	(0.0781)				
Constant	-13.49	-6.831	14.94**	-5.800	-4.291
	(8.885)	(5.989)	(7.010)	(4.099)	(7.188)
Observations	51	51	51	51	51
R-squared	0.852	0.219	0.282	0.795	0.332
Cragg-Donald F	275.2				
Kleibergen-Paap p-val	0.000182				

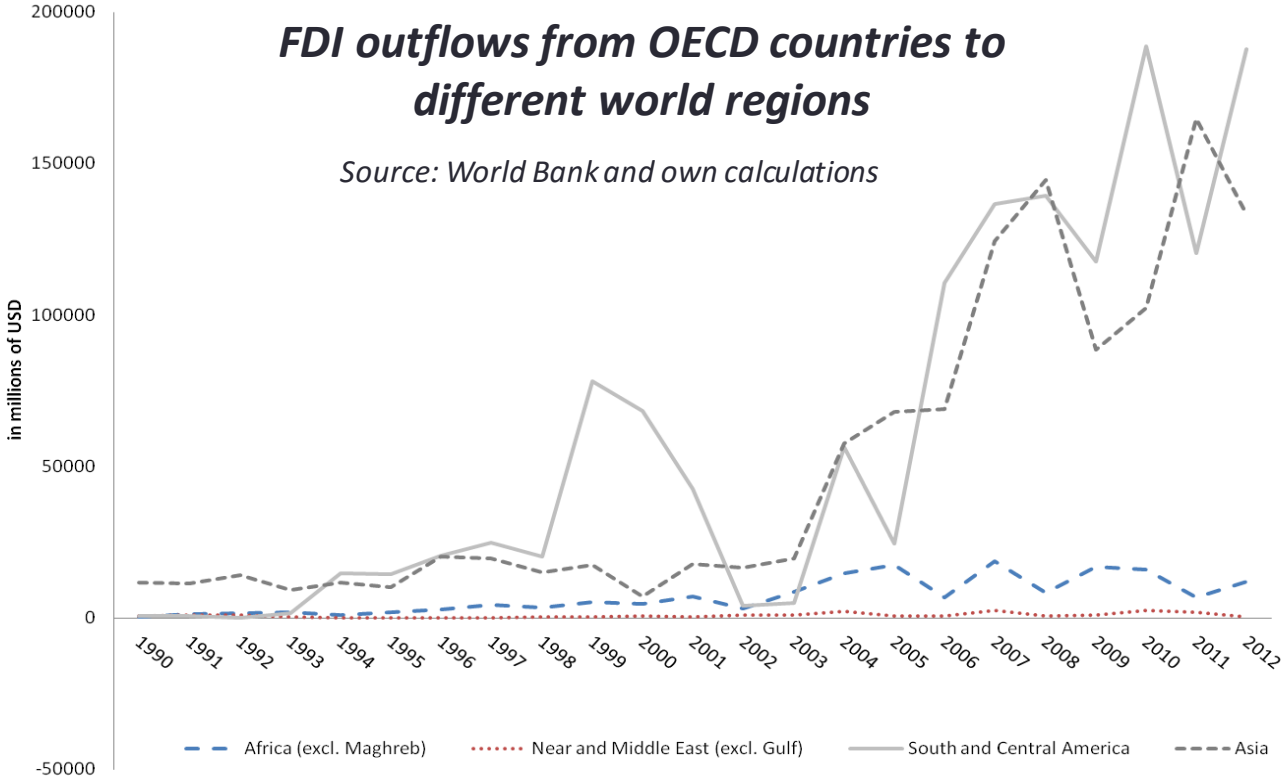
Note: Robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

1.
Economic integration: Diasporas and the global economy

B. Migration, FDI and other financial flows

Migration and Foreign Direct Investment

FDIs have become an increasingly important source of capital for non-OECD & developing countries since 1990



Migration and Foreign Direct Investment

Migration can reduce risk and uncertainty:

- Facilitate the formation of the types of business links
- Catalyst to establish efficient distribution, procurement, transportation and satisfaction of regulations
- Immigrant labor force carries information on their home countries (reduce uncertainty)

Migration and Foreign Direct Investment

Micro Evidence

Foley and Kerr (2012):

- Firm-level linkages between high-skill migration to the United States and U.S. FDI
- Using data on FDI and on patenting by ethnicity
- Firms with higher proportions of their patenting activity performed by inventors from a certain ethnicity have higher FDIs to the (high skilled) inventors' countries of origin = ***complementarity***

Migration and Foreign Direct Investment

Macro Evidence

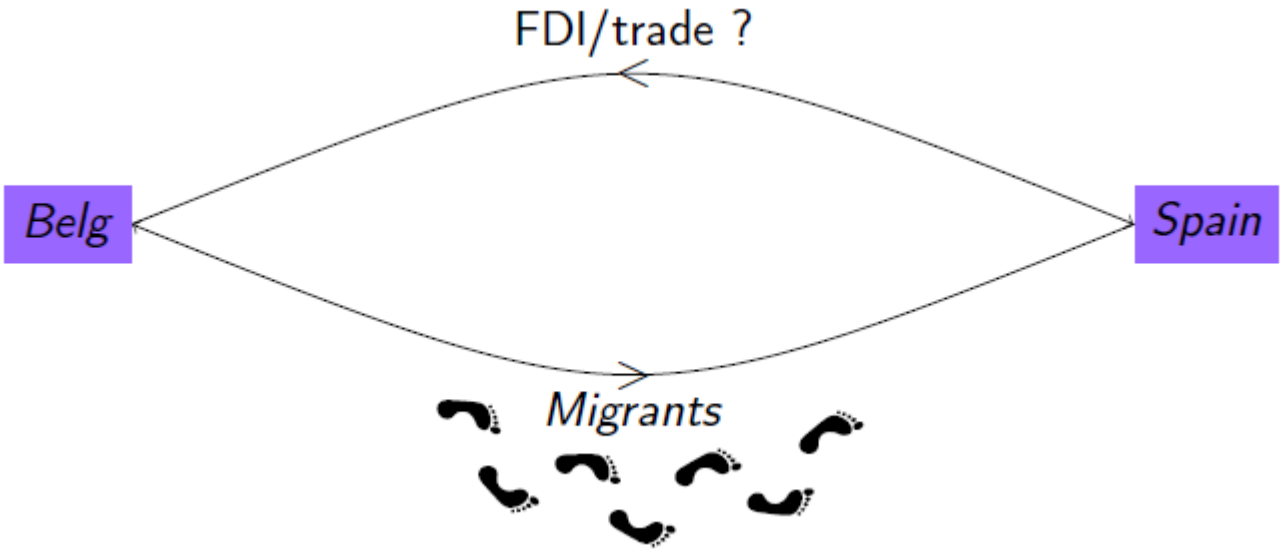
Kugler and Rapoport (EL2007), Javorcik et al. (JDE2011)

- Bilateral FDI (for U.S./rest of the world) and migration data considering the skill dimension of migration
- Manufacturing FDI is negatively correlated with current low-skill migration = ***static substitutability***
- FDI in both the service and manufacturing sectors is positively correlated with the high-skill immigration stock = ***dynamic complementarity***

Migration and Foreign Direct Investment

Aubry, Reshef & Rapoport (2017):

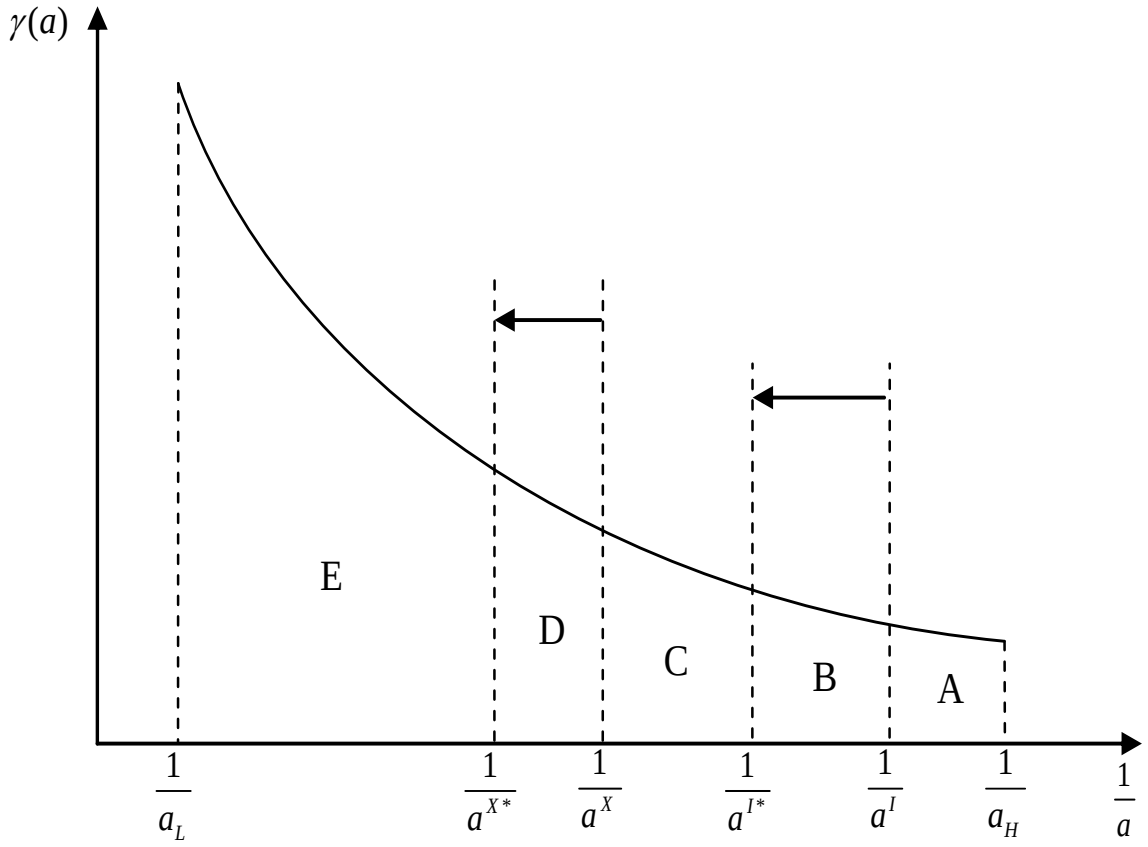
- Previous literature: Migration favors trade and FDI through a reduction in international business transaction costs.
- Need for a unified analysis: Interdependence between trade, migration and FDI. As migrants could both decrease the costs of trade and FDI the outcome is a priori ambiguous



Migration and Foreign Direct Investment

The effect of migration on the extensive margin: trade vs. FDI

Source: Aubry, Reshef, and Rapoport (2017)



Migration and Foreign Direct Investment

The Effect of Migration on Trade & FDI separately

Source: Aubry, Reshef, and Rapoport (2017)

	ln(Trade) benchmark	ln(Trade) nls	Tfdi Probit	ln(FDI) benchmark	ln(FDI) nls	ln(FDI) firm heterog	ln(FDI) firm selec
ln(Total migration in 2000)	0.151***	0.105***	0.027***	0.199***	0.176***	0.158***	0.212***
ln(distance)	-1.492***	-0.994***	-0.207***	-0.918***	-0.944***	-0.796***	-1.117***
Common border	0.338**	0.539***	0.105	0.060	0.084	0.065	0.053
Currency union	0.615***	0.340*	0.296***	0.127	0.071	0.012	0.039
Free trade agreement	0.651***	0.462***	-0.001	-0.057	-0.037	-0.064	-0.052
Country is landlocked	-0.639***	-0.488***	-0.003	0.502	0.605	0.454	0.357
Same legal system	0.362***	0.288***	0.086***	0.442***	0.434***	0.381***	0.536***
Same official language	0.686***	0.349***	0.139***	0.600***	0.614***	0.565**	0.687***
Colonial tie	0.106	1.253***	0.233***	0.655***	0.667***	0.522**	0.895***
Time to register a prop.			-0.068*				
δ		0.949***			0.066		0.508
η		0.562***			0.427***		
Observations	15615	15615	6512	2180	2180	2180	2180
R^2	0.677	0.676		0 .771	0.775	0.774	0.773

Migration and Foreign Direct Investment

The Effect of Migration on FDI over Trade ratio

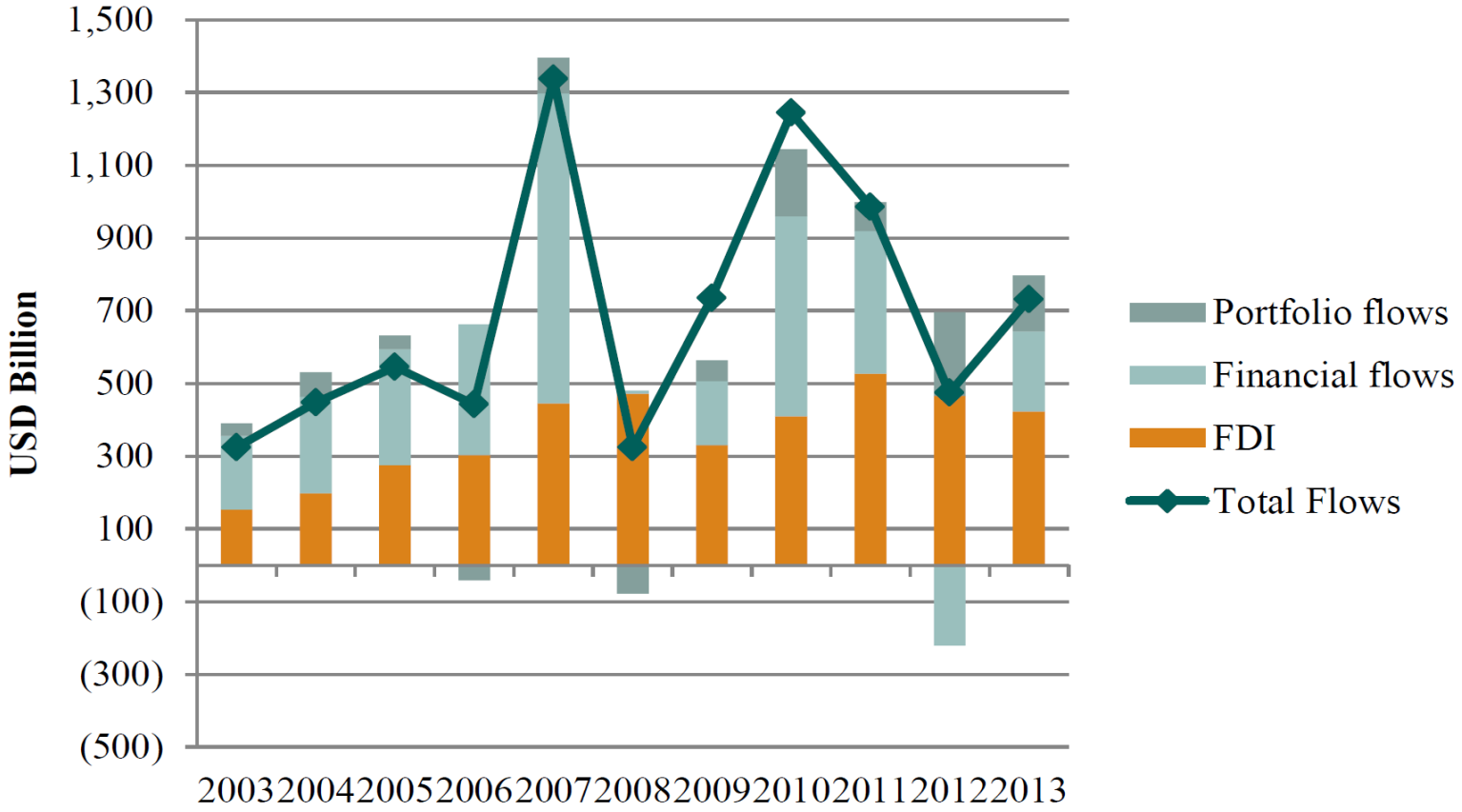
Source: Aubry, Reshef, and Rapoport (2017)

	ln(FDI/exports) benchmark	ln(FDI/exports) nls	ln(FDI/exports) firm heterog	ln(FDI/exports) firm select
ln(Total migration in 2000)	0.114***	0.102***	0.076***	0.134***
ln(distance)	-0.035	0.055	0.205*	-0.134
Common border	-0.095	0.075	(0.230)	(0.228)
Currency union	0.100	0.249	0.142	0.107
Free trade agreement	0.048	0.037	0.032	0.040
Country is landlocked	0.483	0.227	0.384	0.347
Same legal system	0.125	0.152	0.047	0.239**
Same official language	0.427**	0.325*	0.301	0.403**
Colonial Tie	0.328*	0.246	0.062	0.464**
δ		0.000	0.468***	
η		1.145***		0.696***
Observations	2180	2180	2180	2180
R^2	0.546	0.546	0.549	0.552

Migration and other Financial Flows

Cross Border Capital Flows by type in Developing Countries

Source: Tyson et al. 2014



Migration and other Financial Flows

Macro Evidence

Kugler, Levintal & Rapoport (forthcoming WBER)

- ***Hypothesis*** = migration should stimulate bilateral financial flows
- ***Channel*** = migrants transfer information on their home countries to investors in their host country
- Similar approach as for trade and FDI

Migration and other Financial Flows

Table : International bank lending and migration

Dependent Variable:	log (Loans_{ij})					Loans_{ij}
	(1)	(2)	(3)	(4)	(5)	(6)
log Migration_{ij}		0.184***		0.125**	0.150***	0.179***
		(0.038)		(0.050)	(0.037)	(0.028)
log Distance_{ij}	−0.368***	−0.247***	−0.710***	−0.595***	−0.701***	−0.253***
	(0.078)	(0.080)	(0.121)	(0.123)	(0.107)	(0.050)
$(\text{Colonial Link})_{ij}$	0.897***	0.777***	1.337***	1.169***	1.328***	0.176
	(0.239)	(0.239)	(0.266)	(0.267)	(0.204)	(0.170)
$(\text{Language})_{ij}$	0.320	0.075	0.127	0.048	0.260	−0.197
	(0.202)	(0.216)	(0.187)	(0.190)	(0.160)	(0.236)
$(\text{Legal origin})_{ij}$	0.694***	0.579***	0.485***	0.410***	0.144	0.450***
	(0.109)	(0.117)	(0.124)	(0.117)	(0.111)	(0.121)
Other controls (not reported)						
FE (i and j)	No	No	Yes	Yes	Yes	Yes
N	824	824	824	824	1,628	1,827
L	16	16	16	16	17	17
B	62	62	62	62	175	178
R^2	0.69	0.70	0.86	0.86	0.85	0.94
Estimator	OLS	OLS	OLS	OLS	OLS	Poisson

Kugler, Levintal & Rapoport (2017)

Migration and other Financial Flows

Table : Skilled versus unskilled migration - OLS and Poisson

Dependent Variable:	log(Loans) (1)	log(Export) (2)	Loans (3)	Export (4)
log(Skilled)	0.217***	0.072**	0.232***	0.087
	(0.066)	(0.035)	(0.090)	(0.058)
log(Unskilled)	−0.033	0.084**	0.001	0.119**
	(0.054)	(0.033)	(0.069)	(0.056)
log(Distance)	−0.736***	−0.815***	−0.258***	−0.633***
	(0.112)	(0.063)	(0.051)	(0.051)
N	1,427	1,427	1,546	1,546
L	17	17	17	17
B	158	158	157	157
R^2	0.86	0.93	0.94	0.97
Estimator	OLS	OLS	Poisson	Poisson

Regressions include country fixed effects, colonial link, language and legal origin as additional controls.

Kugler, Levintal & Rapoport (2017)

Migration and other Financial Flows

Table : Comparison between Developed and non-Developed countries - OLS and Poisson

Dependent variables:	log(Loans) (1)	Loans (2)
log Migration$_{ij}$	0.100**	0.125***
	(0.047)	(0.038)
log Migration$_{ij}$ $*$ (Non-Developed Country)$_j$	0.058	0.145***
	(0.042)	(0.038)
log Distance$_{ij}$	−0.744***	−0.265***
	(0.110)	(0.050)
Obs.	1,451	1,588
Obs with Developed Borrowing Countries	427	431
No. of Lending Countries	17	17
No. of Borrowing Countries	158	158
R^2	0.86	0.94
Estimator	OLS	Poisson

Regressions include country fixed effects, colonial link, language and legal origin as additional controls.

Kugler, Levintal & Rapoport (2017)

Migration and other Financial Flows

Kugler, Levintal & Rapoport (2017)

- Migration contributes to international bank lending
- Channel through which migration affects bilateral financial flows is the information channel = supported by the type of migrants (skilled), type of countries (culturally remote, developing) and type of investments (risky)
- The effect of migration on cross-border flows is higher for developing countries (extensive margin)

1.
Economic integration: Diasporas and the global economy

C. Migration and Technology Diffusion

Migration and Technology Diffusion

- Knowledge diffusion tends be highly geographically localized (e.g., Jaffe, Trajtenberg and Henderson 1993; Bottazi and Peri 2003; Keller 2002; Bahar et al. 2014)

- An accepted interpretation is that "tacitness of knowledge" makes its transmission difficult without direct human interaction (Polanyi, 1956, Arrow, 1981).

- Thus, **the pattern of international knowledge diffusion should relate to the pattern of international migration**: Immigrants "bring" knowledge; emigrants create diaspora networks

Migration and Technology Diffusion

Are migrants a source of dynamic comparative advantage?

Two Papers:

1. Bahar & Rapoport (forthcoming EJ):

Migrants (immigrants and emigrants) and their impact on the export-basket of a country = global analysis

2. Bahar, Hauptmann, Özgüzel & Rapoport (2017):

Return migrants and their impact on the export basket of their home country = natural experiment (Yugoslavia)

Migration and Technology Diffusion

Bahar & Rapoport (forthcomingEJ)

Research Question

- To what extent are migrants a source of evolution of the export basket composition of their sending and receiving countries?
- Are migrants carriers of tacit knowledge that translates into product-specific productivity shifts in their sending and/or receiving countries?

Migration and Technology Diffusion

Franschhoek Valley, South Africa

Migration and Technology Diffusion

Migration and Technology Diffusion

Migration and Technology Diffusion

Migration and Technology Diffusion

Migration and Technology Diffusion

Data and Sample

- Bilateral migration, FDI and trade data respectively from Artuc et al. (2015), OECD and Feenstra
- The final sample consists of 136 countries (no FSU) and 781 products, with two defined time periods: 1990-2000 and 2000-2010

Empirical strategy

- Results robust to: accounting for shifts in product-specific global demand, excluding bilateral trade possibly generated by network effects, instrumenting for migration using a gravity model.

Migration and Technology Diffusion

Extensive Margin

Dependent Variable: New Product in Export Basket					
	OLS			IV	
	(1)	(2)	(3)	(4)	(5)
Immigrants	0.0030		0.0025	0.0094	
	(0.001)***		(0.001)***	(0.004)**	
Emigrants		0.0027	0.0014		0.0120
		(0.001)***	(0.001)**		(0.005)**
Total FDI	0.0009	0.0010	0.0009	0.0007	0.0008
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Total Trade	-0.0061	-0.0059	-0.0066	-0.0098	-0.0114
	(0.003)**	(0.003)*	(0.003)**	(0.004)**	(0.005)**
Product Imports	-0.0007	-0.0007	-0.0007	-0.0006	-0.0006
	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*
N	83100	83100	83100	83099	83099
r2	0.15	0.15	0.15	0.14	0.14
KP F Stat				83.16	93.07

All specifications include country-by-year and product-by-year fixed effects. SE clustered at the country level presented in parenthesis

$^{*}p < 0.10, ^{**}p < 0.05, ^{***}p < 0.01$

Migration and Technology Diffusion

Intensive Margin

Dependent Variable: Average Annual Export Value Growth Rate					
	OLS			IV	
	(1)	(2)	(3)	(4)	(5)
Immigrants	0.0081		0.0065	0.0222	
	(0.001)***		(0.001)***	(0.004)***	
Emigrants		0.0104	0.0073		0.0370
		(0.002)***	(0.002)***		(0.007)***
Total FDI	-0.0005	-0.0005	-0.0005	-0.0007	-0.0009
	(0.000)*	(0.000)**	(0.000)**	(0.000)***	(0.000)***
Total Trade	0.0107	0.0076	0.0044	-0.0034	-0.0211
	(0.004)***	(0.005)	(0.005)	(0.006)	(0.010)**
Baseline Exports	-0.0419	-0.0415	-0.0420	-0.0432	-0.0427
	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Product Imports	0.0037	0.0038	0.0039	0.0041	0.0048
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Previous Exports Growth	-0.0058	-0.0059	-0.0058	-0.0055	-0.0057
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Zero Exports in t-1	-0.0872	-0.0870	-0.0871	-0.0871	-0.0863
	(0.007)***	(0.007)***	(0.007)***	(0.007)***	(0.007)***
N	127770	127770	127770	127770	127770
r2	0.34	0.34	0.34	0.34	0.33
KP F Stat				105.94	62.22

All specifications include country-by-year and product-by-year fixed effects. SE clustered at the country level

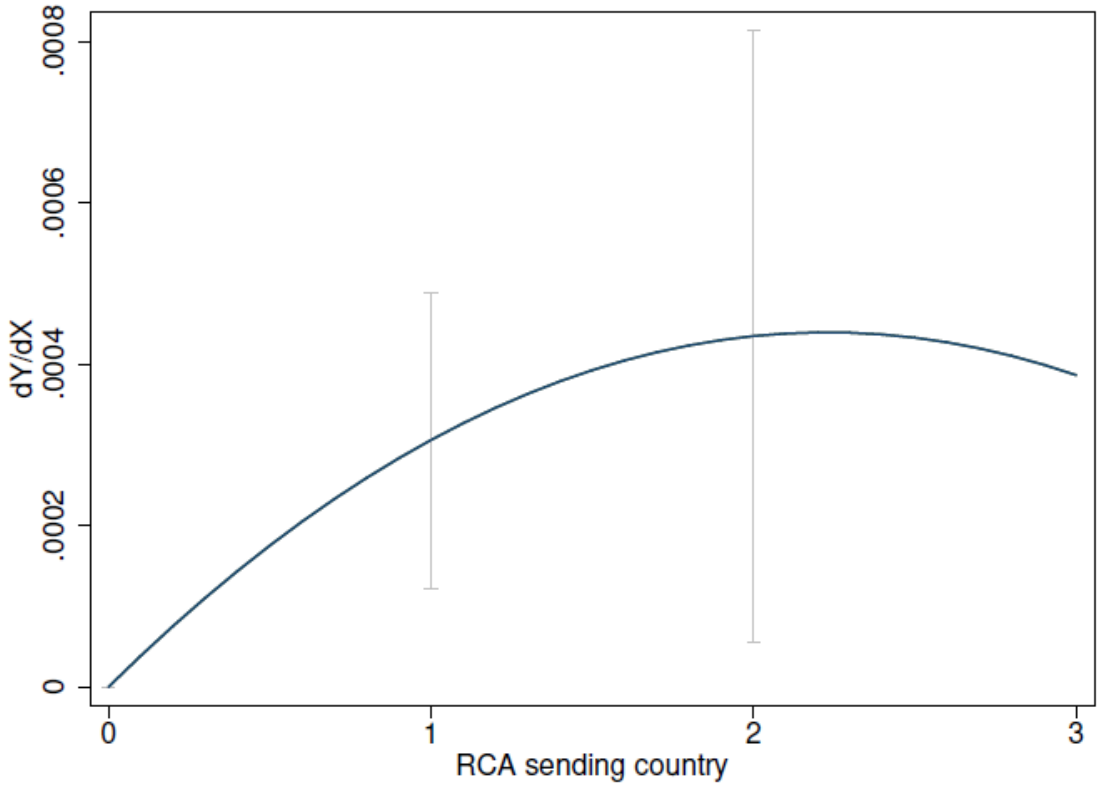
Migration and Technology Diffusion

Summary of results

- Margins. A 10% increase in the immigrants or emigrants stock coming from countries exporters of product p is associated with a ~2% increase in the likelihood country c will export product p with RCA ≥ 1 (extensive margin) and with higher annual CAGR of 0.06pp/0.07pp (intensive margin) in the next 10 year period. Immigrants seem to dominate emigrants when entered jointly at the extensive margin.
- Skills: Migrants with college education or above are about ten times more "effective" than unskilled migrants.
- South-South: qualitatively and quantitatively similar as in full sample (see next Table)

Migration and Technology Diffusion

Figure: Continuous RCA Weight, Diminishing Returns



Migration and Technology Diffusion

Skill Levels

Dependent Variable: New Product in Export Basket						
	Unskilled			Skilled		
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	0.0028		0.0021	0.0029		0.0025
	(0.001)***		(0.001)***	(0.001)***		(0.001)***
Emigrants		0.0026	0.0016		0.0023	0.0014
		(0.001)***	(0.001)***		(0.001)***	(0.001)*
Total FDI	0.0009	0.0010	0.0009	0.0009	0.0010	0.0009
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Total Trade	-0.0066	-0.0066	-0.0072	-0.0065	-0.0062	-0.0070
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)*	(0.003)**
Product Imports	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007
	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*
N	83100	83100	83100	83100	83100	83100
r2	0.12	0.12	0.12	0.12	0.12	0.12

All specifications include country-by-year and product-by-year fixed effects. SE clustered at the country level presented in parenthesis

$^{*}p < 0.10, ^{**}p < 0.05, ^{***}p < 0.01$

Migration and Technology Diffusion

Skill Levels

Dependent Variable: Export Value Annual Growth Rate						
	Unskilled			Skilled		
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants	0.0216		0.0175	0.0217		0.0213
	(0.003)***		(0.003)***	(0.003)***		(0.003)***
Emigrants		0.0249	0.0165		0.0089	0.0023
		(0.004)***	(0.004)***		(0.005)*	(0.004)
Total FDI	-0.0011	-0.0010	-0.0012	-0.0011	-0.0009	-0.0011
	(0.001)**	(0.001)**	(0.001)**	(0.001)**	(0.001)*	(0.001)**
Total Trade	0.0267	0.0205	0.0117	0.0312	0.0421	0.0296
	(0.008)***	(0.010)**	(0.009)	(0.007)***	(0.009)***	(0.009)***
Baseline Exports (Exc. Bilateral)	-0.0962	-0.0959	-0.0964	-0.0960	-0.0956	-0.0960
	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Product Imports	-0.0044	-0.0041	-0.0039	-0.0048	-0.0050	-0.0048
	(0.002)**	(0.002)*	(0.002)*	(0.002)**	(0.002)**	(0.002)**
Previous Exports Growth (Exc. Bilateral)	-0.0021	-0.0023	-0.0021	-0.0022	-0.0024	-0.0022
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Zero Exports in t-1 (Exc. Bilateral)	-0.1640	-0.1647	-0.1630	-0.1653	-0.1668	-0.1653
	(0.012)***	(0.012)***	(0.012)***	(0.012)***	(0.012)***	(0.012)***
N	127770	127770	127770	127770	127770	127770
r2	0.46	0.46	0.46	0.46	0.46	0.46

All specifications include country-by-year and product-by-year fixed effects. SE clustered at the country level presented in parenthesis

$^{*}p < 0.10, ^{**}p < 0.05, ^{***}p < 0.01$

Migration and Technology Diffusion

Global Results: South-South Migration

Table 1: South-South Migration

Panel A: Extensive Margin					
	OLS			IV	
	(1)	(2)	(3)	(4)	(5)
Immigrants	0.0030		0.0024	0.0080	
	(0.001)***		(0.001)**	(0.003)**	
Emigrants		0.0022	0.0011		0.0079
		(0.001)***	(0.001)*		(0.003)**
Total FDI	-0.0001	-0.0001	-0.0001	-0.0003	-0.0003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)*
Total Trade	-0.0005	-0.0004	-0.0005	-0.0011	-0.0009
	(0.000)	(0.000)	(0.000)	(0.000)**	(0.000)**
Product Imports	-0.0008	-0.0008	-0.0008	-0.0009	-0.0008
	(0.000)*	(0.000)*	(0.000)*	(0.000)*	(0.000)*
N	83230	83230	83230	83230	83230
r2	0.15	0.15	0.15	0.14	0.14
KP F Stat				89.61	72.78

Migration and Technology Diffusion

Global Results: South-South Migration

Panel B: Intensive Margin

	OLS			IV	
	(1)	(2)	(3)	(4)	(5)
Immigrants	0.0058		0.0030	0.0101	
	(0.001)***		(0.001)***	(0.003)***	
Emigrants		0.0082	0.0067		0.0107
		(0.001)***	(0.001)***		(0.003)***
Total FDI	-0.0011	-0.0011	-0.0012	-0.0013	-0.0012
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Total Trade	0.0026	0.0023	0.0018	0.0016	0.0017
	(0.001)***	(0.001)***	(0.001)***	(0.001)	(0.001)*
Baseline Exports	-0.0453	-0.0456	-0.0459	-0.0460	-0.0460
	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Product Imports	0.0038	0.0039	0.0039	0.0039	0.0040
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Previous Exports Growth	-0.0045	-0.0045	-0.0044	-0.0043	-0.0045
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Zero Exports in t-1	-0.0884	-0.0879	-0.0881	-0.0886	-0.0879
	(0.007)***	(0.007)***	(0.007)***	(0.007)***	(0.007)***
N	95656	95656	95656	95656	95656
r2	0.35	0.35	0.35	0.35	0.35
KP F Stat				58.21	78.93

Standard errors clustered at the partner country level reported in parenthesis.

$^{*}p < 0.10, ^{**}p < 0.05, ^{***}p < 0.01$

Migration and Technology Diffusion

Bahar, Hauptmann, Özgüzel & Rapoport (2017)

- Exploit a natural experiment on Yugoslavian refugees in Germany, 1990-1995
- Return migration from Germany to areas of former Yugoslavia has increased the exports of "German-type" goods to the rest of the world
- Products with an increase in return migration by 1% had 0.13-0.33% increase in exports to ROW (excluding Germany).

Migration and Technology Diffusion

Historical Context:

- In 1991 Yugoslavia starts a process that ends with its disintegration into 6 countries (7 later on). Croatia and Slovenia secede first.
- Right away, fighting begins b/t Serbia and Croatia
- In 1992 Bosnia votes for independence, too, leading to internal war between muslims, serbs and croats (though fueled by leaders and armed forces in Serbia and Croatia)
- In 1995 parties sign peace treaty in Dayton, OH (USA) after several years of bloodshed and massive forced displacement of civilian populations

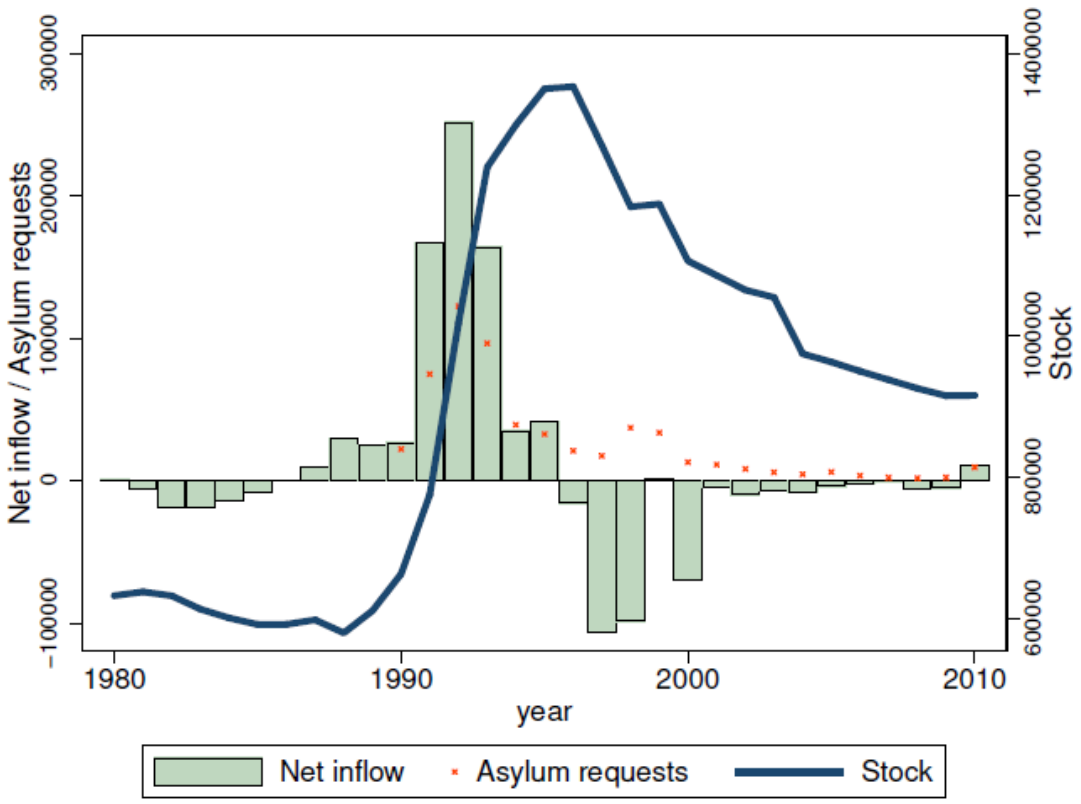
Migration and Technology Diffusion

Historical Context:

- According to German official data, in the first half of the 90s, over 600K Yugoslavians fled to Germany
- Germany provided to Yugoslavians a mix of asylum and temporary protection (Duldung) status. Both options allowed them to work, and indeed they integrated into German labor force in different industries
- Following Dayton peace treaty, Germany enacted a repatriation program for Yugoslavians

Migration and Technology Diffusion

Figure: Migration from Yugoslavia into Germany



Migration and Technology Diffusion

Empirical Strategy:

- DID specification to compare average exports in 1985-1990 against 2005-2010 as follows:

$$exports_{p,t} = \beta_{DID} treat_p \times after_t + controls_{p,t} + \eta_p + \varphi_t + \varepsilon_{p,t}$$

- Addressing endogeneity:
  - Placebo test using pre-trend as outcome
  - Using Instrumental Variable Strategy

$$\underbrace{TreatIV_p}_{\text{Expected asylum workers in industry } p} = \sum_{t=1990}^{1995} \sum_s \underbrace{asylumseekers_t}_{\text{Inflow asylum seekers in year } t} \times \underbrace{quota_{s,t}}_{\text{Quota (share) for state } s \text{ during } t} \times \underbrace{shareindustry_{s,p,t}}_{\text{Employment share of } p \text{ within } s \text{ year } t}$$

Migration and Technology Diffusion

Baseline and IV Results

Table: Differences-in-differences estimation, 1985-1990 and 2005-2010

Dependent variable: $exports_{p,t}$						
	OLS			2SLS		
	lnexp	lnexpplus1	asinhexp	lnexp	lnexpplus1	asinhexp
treat2000 × after2005	0.1281	0.2251	0.2291	0.1885	0.3252	0.3311
	(0.040)***	(0.063)***	(0.065)***	(0.049)***	(0.084)***	(0.086)***
lnfdi	-0.1696	-0.2600	-0.2641	-0.1734	-0.2663	-0.2704
	(0.069)**	(0.121)**	(0.125)**	(0.070)**	(0.122)**	(0.126)**
N	1520	1572	1572	1520	1572	1572
r2	0.86	0.80	0.80	0.86	0.80	0.80
KP F Stat				2841.59	2985.62	2985.62

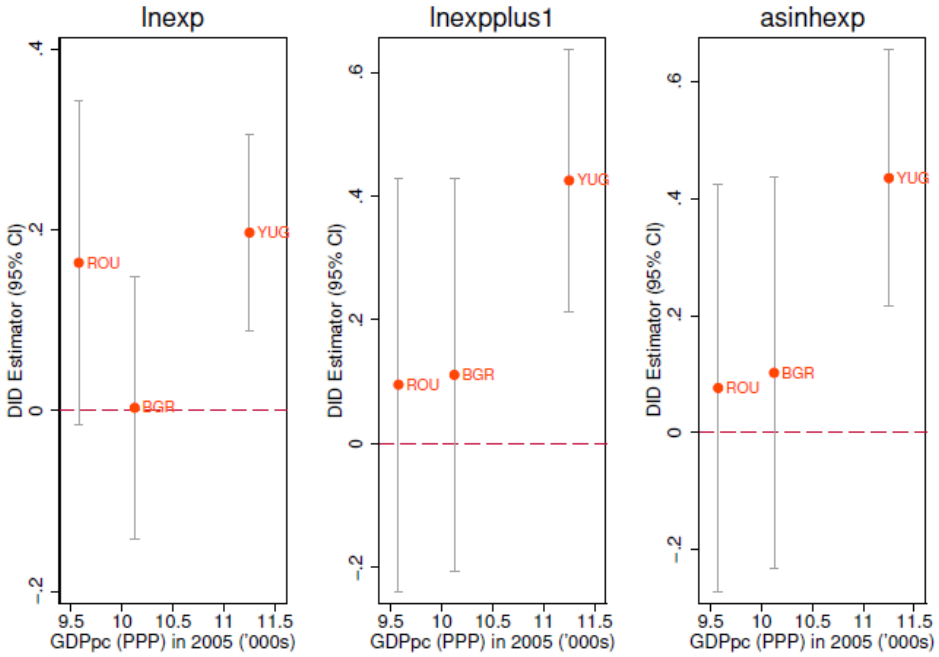
This table shows result of the estimation using different monotonic transformations for $exports_p, t$ in each column. The estimation aggregated exports by product in years 1985-1990 and 2005-2010. All columns include product fixed effects and year fixed effects. Standard errors clustered at the product level presented in parenthesis.

$^{*}p < 0.10,^{**}p < 0.05,^{***}p < 0.01$

Migration and Technology Diffusion

Placebo Test:

Figure: Results of "placebo" test

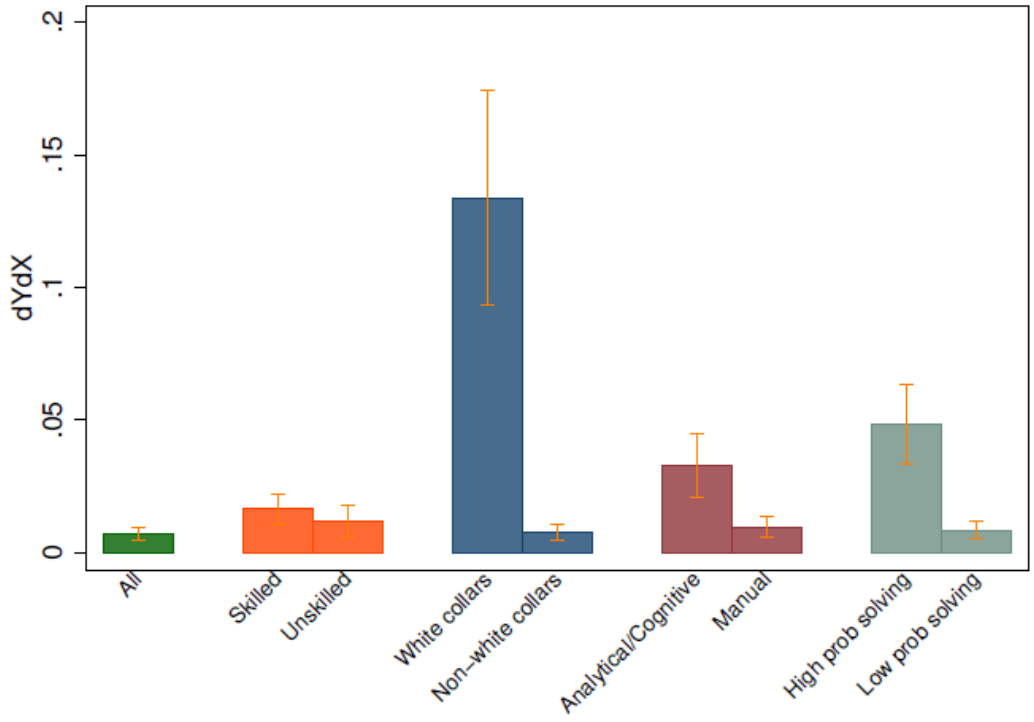


Migration and Technology Diffusion

Global Results:

$$exports_{c,p,t} = \beta_{DID} migrants_{c,p,t-10} + globalexports_{p,t} + \eta_{c,p} + \varphi_{c,t} + \varepsilon_{c,p,t}$$

Figure: Marginal effect by type of migrant, using $log(exports_{c,p,t})$



Migration and Technology Diffusion

- Migrants, as carriers of tacit knowledge, induce good specific productivity-shifts
- The effect is much stronger when migrants are skilled and/or work in occupations that are more cognitive and analytical in nature, suggestive of the role of information

2.

Cultural integration: diasporas, social remittances and culture

Social Remittances

Migrants' transfers of behavioral and cultural norms to their communities of origin

- (Levitt, 1998)

2.
Cultural integration: diasporas, social remittances and culture

A. Political Remittances

Political Remittances

How could emigration affect political outcomes at home? Some channels:

- Self-selection of individuals along political lines (or "exit effect"), ethnicity, or education
- Migration (and remittances) serve as a safety net: lower pressure to reform (Mexico, Haiti), income effects?
- Diasporas take sides in internal conflicts, lobby host country governments to affect institutions at home (Cuba, Croatia)
- Social (political) remittances

Political Remittances

Cross-Country Evidence

Spilimbergo (AER2009)

- Foreign-trained individuals promote democracy in their home countries, but only if foreign education was acquired in a democratic destination
- Use weighted averages of democracy scores of students' destinations, plus data on where political leaders were educated (Harvard, Chicago, Lumumba, Sorbonne); destination matters
- Size of foreign migrant stock does not matter, only whether destination was democratic or not

Political Remittances

Cross-Country Evidence

Docquier, Lodigiani, Rapoport and Schiff (JDE2016):

- Estimate the effect of emigration on home-country institutions for all migrants, not just foreign students,
- Openness to migration, as measured by the total emigration rate, contributes to improved institutional quality
- Size of emigration rate makes a difference, not just whether emigration is directed toward destinations with high or low democracy scores

Political Remittances

Country Case Study

Barsbai, Rapoport, Steinmayr, Trebesch (AEJ: Applied, 2017):

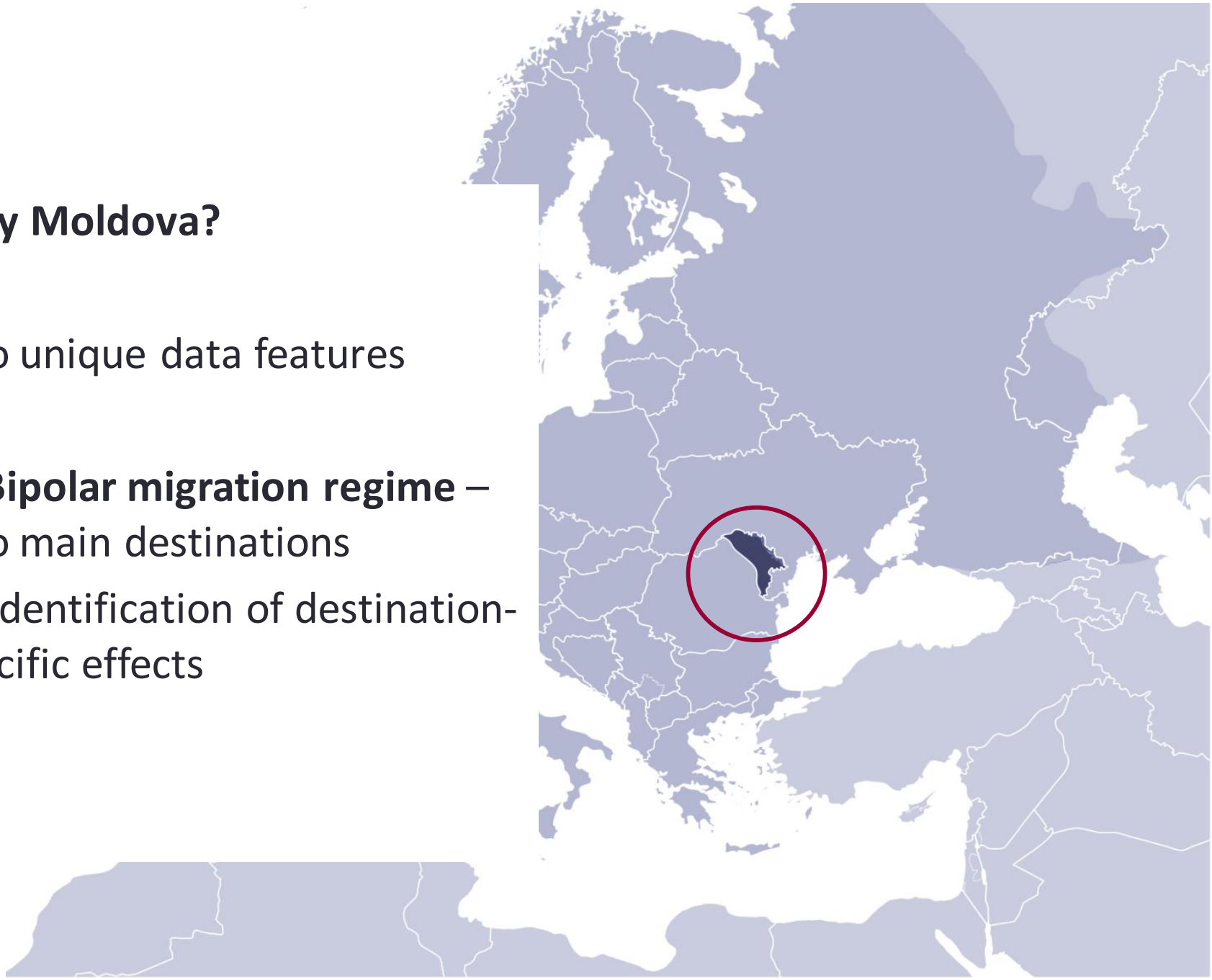
- The effect of labor migration on the diffusion of democracy: evidence from a former Soviet Republic (forthcoming: AEJ Applied)
- Moldova: Waves of emigration both towards east and west
- Emigration to democratic countries decreases share of votes for communist parties in home district (and vice versa for emigration to Russia)

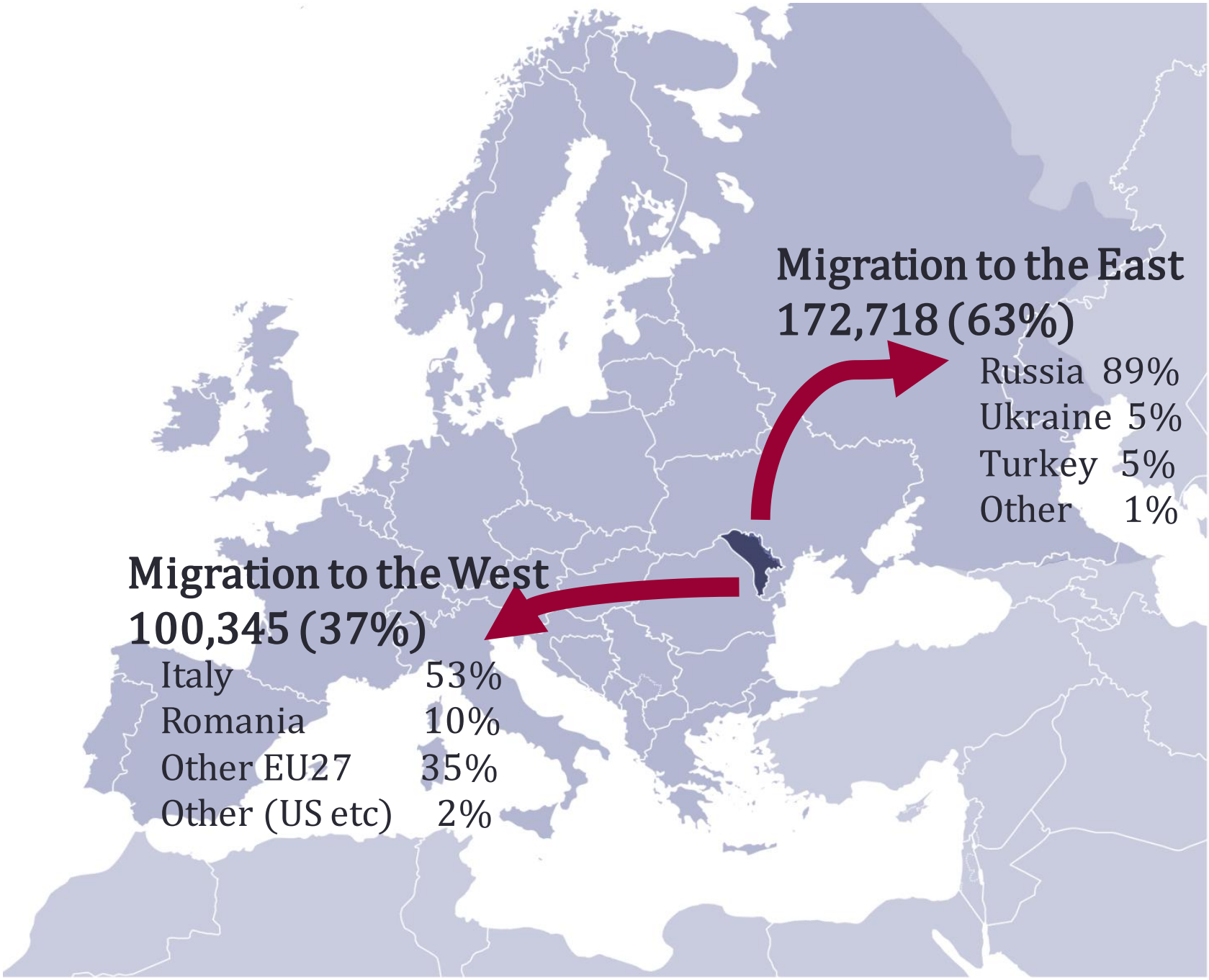
Why Moldova?

Two unique data features

1) Bipolar migration regime – Two main destinations

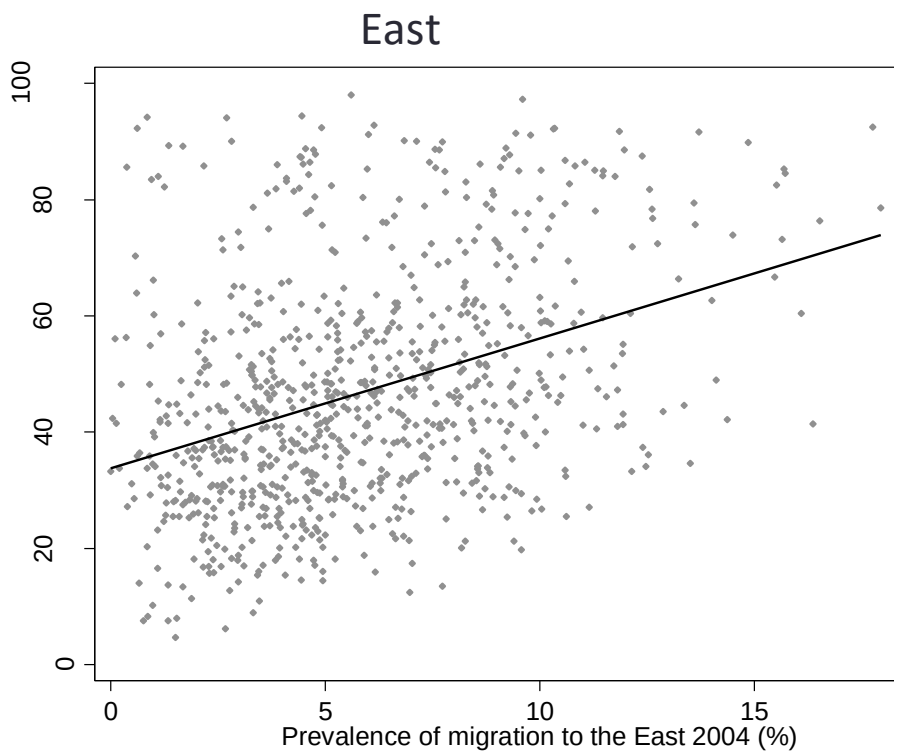
→ Identification of destination-specific effects

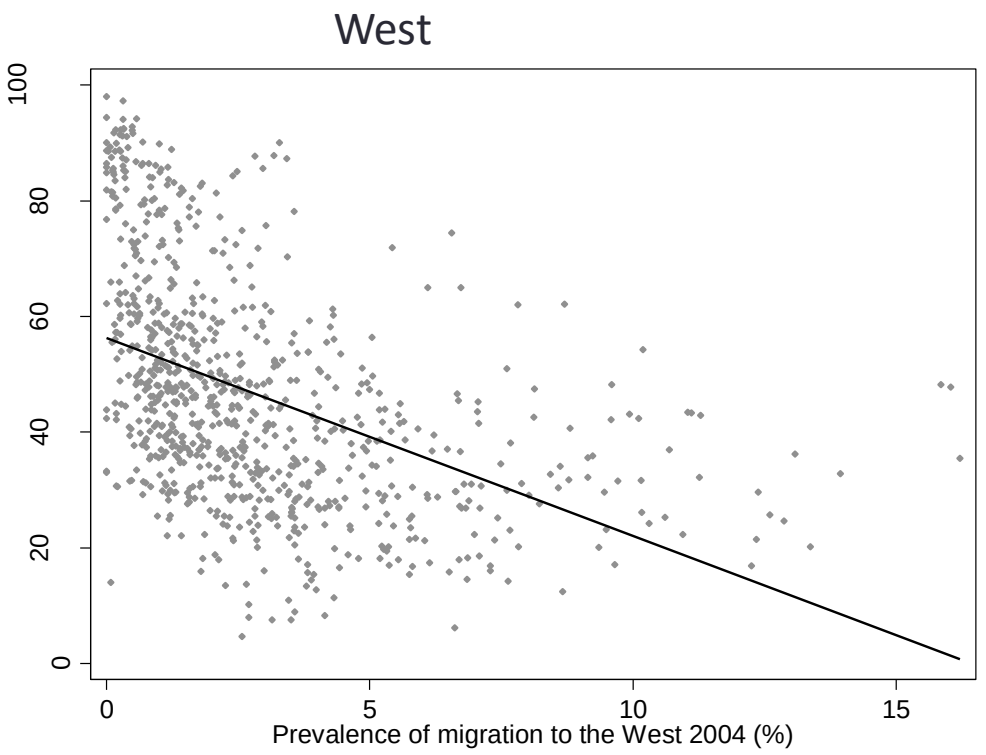



Migration to the East
172,718 (63%)
Russia 89%
Ukraine 5%
Turkey 5%
Other 1%
Migration to the West
100,345 (37%)
Italy 53%
Romania 10%
Other EU27 35%
Other (US etc) 2%

Political Remittances

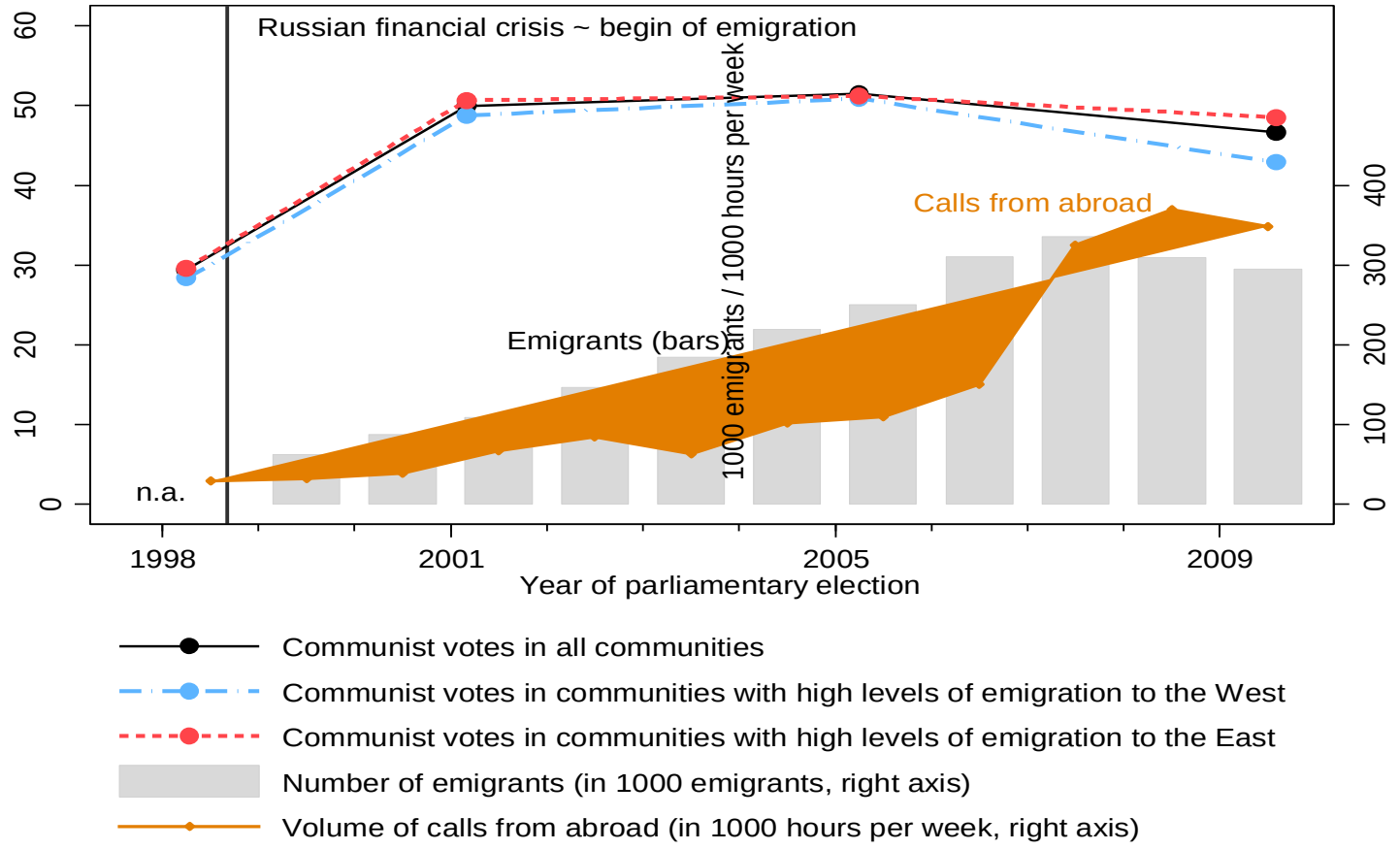
Migration to the East/West and Share of Communist Votes





Political Remittances

Communist votes, number of emigrants in stocks, and volume of calls from abroad to Moldova, 1998-*2009*



Political Remittances

	Share of votes for the Communist Party (%)			Share of votes for opposition parties (%)			
	Basic controls	Plus pre-migration election results	Plus night-time light (full model)	Liberal Democratic Party	Liberal Party	Demo-cratic Party	Party Alliance Our Moldova
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Prevalence of emigration to the West (%)	-0.70***	-0.63***	-0.63***	0.40***	0.24**	0.08	-0.16
	(0.20)	(0.18)	(0.18)	(0.13)	(0.11)	(0.12)	(0.15)
Prevalence of emigration to the East (%)	0.44**	0.39**	0.39**	-0.07	-0.17**	-0.07	-0.01
	(0.17)	(0.16)	(0.16)	(0.09)	(0.07)	(0.08)	(0.11)
Basic controls	yes	yes	yes	yes	yes	yes	yes
Pre-migration election results	-	yes	yes	yes	yes	yes	yes
Night-time light	-	-	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes	yes
Number of observations	848	848	848	848	848	848	848
R^2	0.78	0.82	0.82	0.56	0.66	0.42	0.37

2.
Cultural integration: diasporas, social remittances and culture

B. Malthusian and other social remittances

Malthusian Remittances

Do social remittances extend to fertility preferences?

- Fargues (2007): Notes that emigration is associated with lower birthrates in MENA countries whose main destination is the West while it is associated with higher birthrates where emigration is going Eastward (i.e., to the Gulf countries)
- Beine, Docquier and Schiff (CJE2013): cross-country evidence
- Bertoli and Marchetta (WD2015): confirm Fargues' conjecture with careful empirical analysis of return households to Egypt.

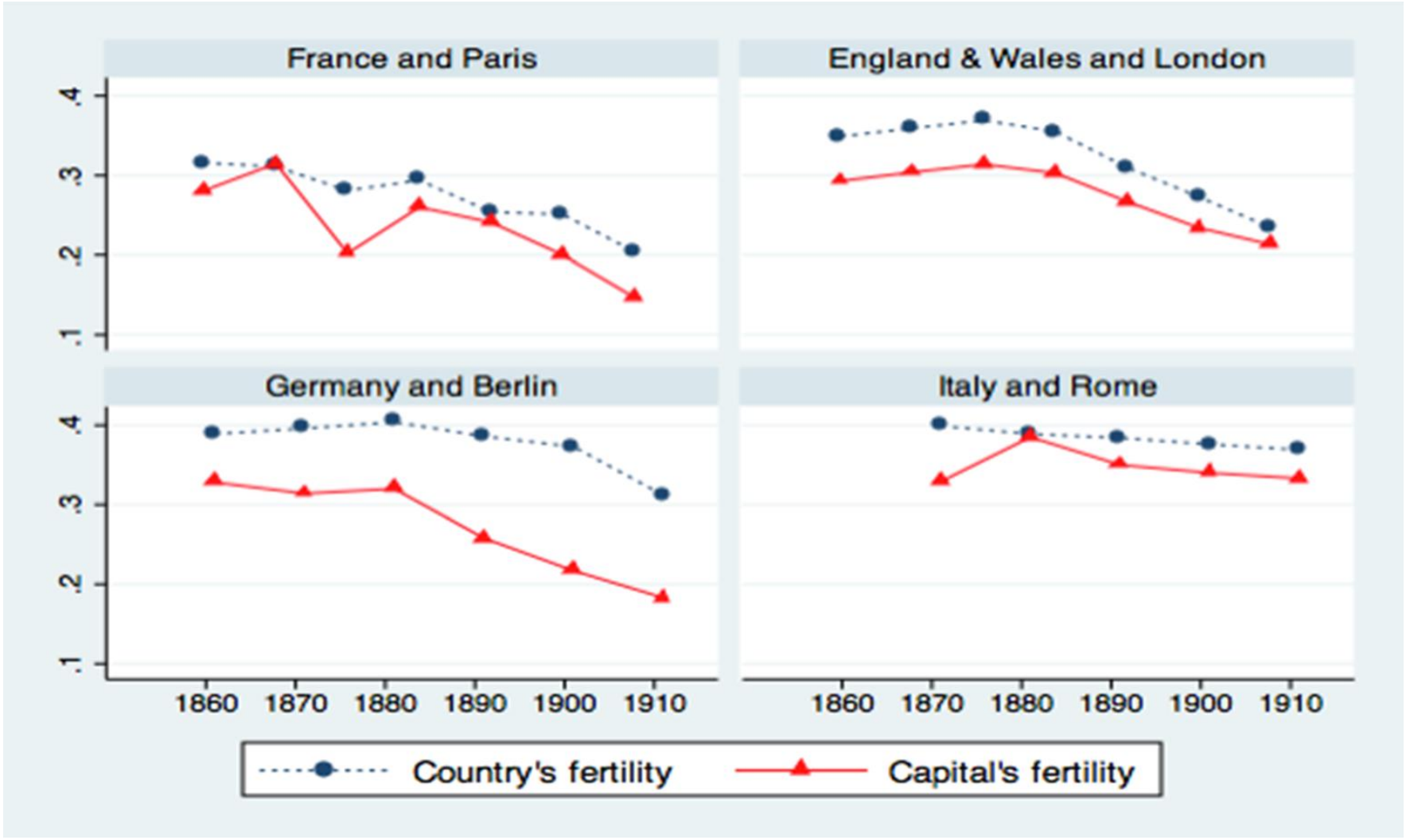
Malthusian Remittances

Country Case Study:

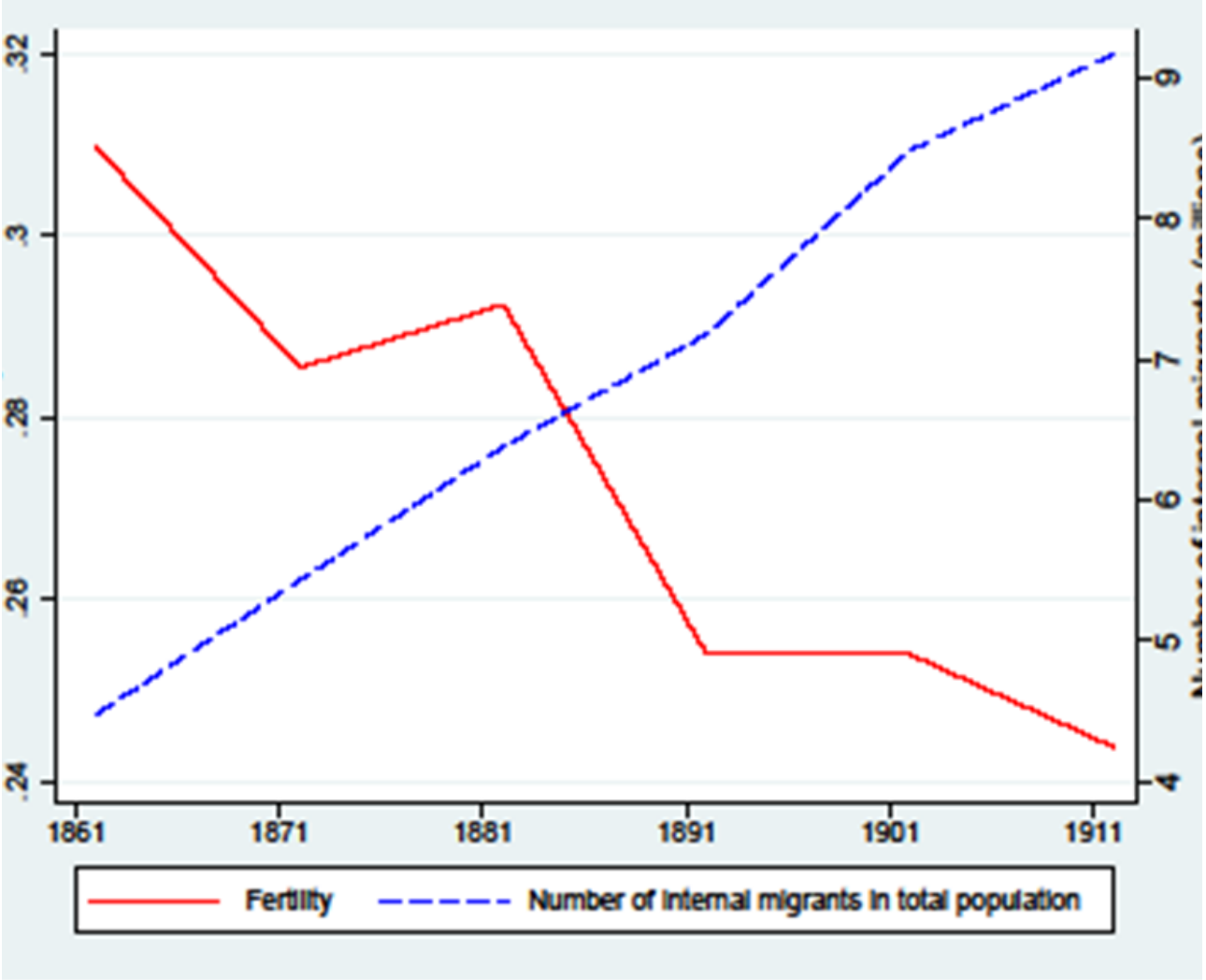
Daudin, Franck and Rapoport (2016)

- The role of migration and fertility norms for intra-national migration in France
- France experienced the demographic transition before richer and more educated countries. Channel = diffusion of culture and information through internal migration
- Building a decennial bilateral migration matrix between French regions for 1861-1911

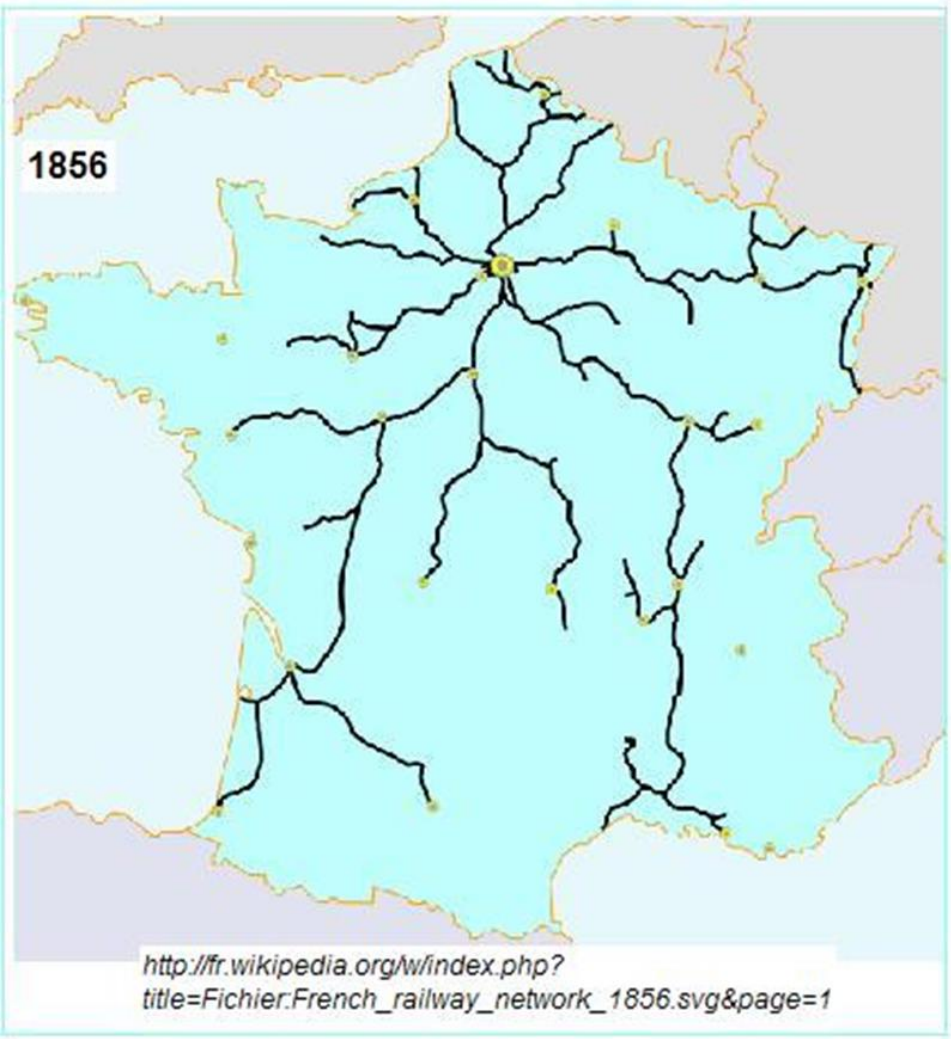
Malthusian Remittances



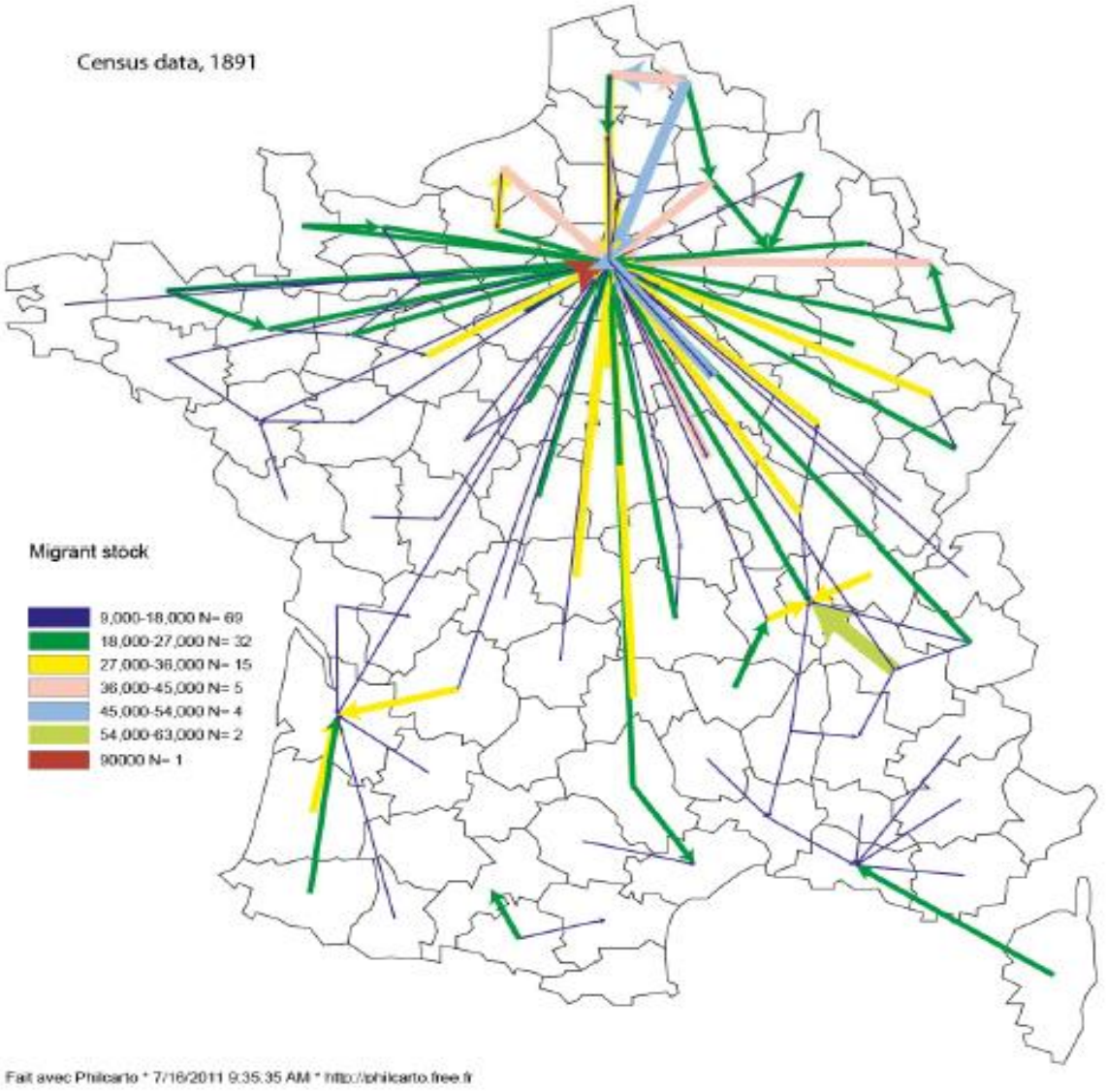
Malthusian Remittances



Malthusian Remittances



Malthusian Remittances



Malthusian Remittances

Daudin, Franck and Rapoport (2016)

- Emigrants who moved from high- to low-fertility areas transmitted cultural and economic information about fertility norms and the cost of raising children in the regions where they had settled to the inhabitants of the regions where they came from
- Emigration to Paris, which accounted for 26.33% of the total number of French internal emigrants between 1861 and 1911, explains half of the national decline in fertility (which is in line with the economic, political and cultural importance of Paris within France)

Other Aspects of Societal Change

Entrepreneurial and Managerial Skills

- Marchetta (2012): entrepreneurial activities by Egyptian returnees enjoy a probability of survival that is 35 % higher than for stayers, even after controlling for a possible positive selection of migrants.

Religiosity and Religious Tolerance

- Clingingsmith et al. (2009): returnees from Hajj exhibit more rigorously Islamic practices (such as prayer of fasting) but fewer localized practices (e.g. use of amulets and dowry); Hajjis express more tolerance, more favorable attitude towards women & more likely to believe in equality and harmony among Muslims but also among ethnic groups.

Other Aspects of Societal Change

Gender Roles and Women's Empowerment

- Lodigiani and Salomone (2016) analyze the role of women in politics as measured by the share of female members of the National Parliament. They find that migration to countries where the share of women in the parliament is higher is likely to increase female parliamentary share in the source country.

2.
Cultural integration: diasporas, social remittances and culture

C. Migration and cultural convergence

Migration and Cultural Convergence

- Globalization is both economic and cultural

- Every economic interaction also contains a cultural component and culture plays a major role in the creation of institutions, economic integration into the world market, and the wealth of nations more generally (Guiso et al. 2006; Aghion et al. 2010; Alesina & Giuliano 2015)

- What is the role of migration in the formation (evolution) of culture and in making home/host countries closer/more distant culturally?

Migration and Cultural Convergence

Related Work: **Trade-based cultural change**

Olivier, Thoenig and Verdier (2008)

- Trade integration leads to cultural divergence; some cultures that existed under autarky may even disappear under free trade
- Factor endowment model with comparative advantage with micro-founded OLG model of cultural transmission
- Under free trade the distribution of cultures becomes more dissimilar across countries over time because countries "specialize" on the production of the cultural good for which they have the comparative advantage

Migration and Cultural Convergence

Maystre, Olivier, Thoenig and Verdier (2014)

- Trade integration leads to cultural convergence
- Model: Dixit-Stiglitz monopolistic competition coupled with micro-founded OLG model of cultural transmission, shows that (even temporary) shocks to trade openness make countries culturally more similar
- Empirics: Cross-sectional evidence for a positive relationship between trade and cultural similarity, particularly for the trade in differentiated good (goods with a high "cultural content")

Migration and Cultural Convergence

Rapoport, Sardoschau & Silve (2017)

1. Develop a set of bilateral cultural proximity measures along different statistical and topical dimensions
2. Develop a model of migration based cultural change to identify the conditions under which there is (bilateral) cultural convergence or divergence
3. Empirically test these conditions with the help of data from the World Value Survey and World Bank bilateral migration data

Migration and Cultural Convergence

Selection Effect

- Migrants move to a country with norms and values more similar to their own, leaving behind more dissimilar values and norms, and a more homogeneous population

→ Cultural Divergence

Diffusion Effect

- Migrants bring their culture to the melting pot at destination

→ Cultural Convergence

Transmission Effect (social remittances)

- Migrants remit their norms and values back home

→ Cultural Convergence

Migration and Cultural Convergence

Theoretical model has 2 layers:

1) **A compositional model of migration (cultural incentives for migration)**
   - Individuals emigrate for both economic and cultural reasons

2) International migration and intergenerational cultural transmission (based on Bisin & Verdier, 2000)
   - Imperfect Altruism with horizontal and vertical cultural transmission

Migration and Cultural Convergence

Table 1: Comparison of Empirical Predictions

Prediction / Condition	**Compositional Model**	**Transmission Model**
Equilibrium	Cultural divergence (with $\beta > 0$)	Cultural convergence (unconditional)
↑↑ Economic gains from migration	Cultural convergence	Cultural divergence
↑↑ Initial cultural distance	Cultural divergence	Cultural convergence

Migration and Cultural Convergence

Statistical Distance Measures:

Minkowski	$D_M = \sqrt[p]{\sum_{i=1}^{d} \lvert P_i - Q_i \rvert^p}$
Euclidean *	$D_E = \sqrt{\sum_{i=1}^{d} (P_i - Q_i)^2}$
Canberra *	$D_{Ca} = \sum_{i=1}^{d} \frac{\lvert P_i - Q_i \rvert}{P_i + Q_i}$
Chebyshev	$D_{Ch} = \max_i \lvert P_i - Q_i \rvert$
Herfindahl *	$D_I = \sum_{i=1}^{d} P_i * Q_i$

Data:

- World Value Survey = Unbalanced panel of 6 waves, 1981 to 2014 with questions on attitudes, norms, and beliefs
- World Bank Bilateral Migration Data 1960 to 2010 (Interpolation between decades to match WVS waves)

Migration and Cultural Convergence

Specification:

$$CS_{ijt} = \beta_0 + \beta_1 Mig_{ij,t-\Delta} + \beta_2 Trade_{ij,t-\Delta} + \theta_{ij} + \theta_{it} + \theta_{jt} + \varepsilon_{ijt}$$

- CS_{ijt} = Index of Cultural Similarity between country i and j at time t
- Our coeffecient of interest is beta: Convergence with beta > 0 and divergence with < 0
- We can only capture the aggregate effect of selection and diffusion (overall effect)
- Fixed Effects: country pair, host-year, home-year = exploit variation within country pair over time

Migration and Cultural Convergence

Migration and Cultural Proximity (5 year and 10 year lag)

Main Effect (OLS Results): Aggregate Measures

	Euclidean			Herfindahl			Canberra		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\Delta = 1$									
Mig	0.0730***	0.0503***	0.0237**	0.0370***	-0.0290*	0.0175**	0.0689***	0.0359**	0.0213*
	(0.00489)	(0.0118)	(0.00982)	(0.00499)	(0.0149)	(0.00776)	(0.00490)	(0.0150)	(0.0118)
Trade	-0.0374***	0.0855***	0.00263	-0.00997*	-0.0339**	8.27e-05	-0.0334***	0.0515***	0.00192
	(0.00518)	(0.0119)	(0.0164)	(0.00528)	(0.0150)	(0.0130)	(0.00519)	(0.0151)	(0.0196)
Obs	6,983	6,983	6,983	6,983	6,983	6,983	6,983	6,983	6,983
Rsq	0.032	0.910	0.966	0.010	0.859	0.979	0.029	0.855	0.952
$\Delta = 2$									
Mig	0.0582***	0.0553**	0.0554**	0.0339***	-0.0589**	0.0408**	0.0648***	0.101***	0.0690***
	(0.00873)	(0.0258)	(0.0233)	(0.00829)	(0.0257)	(0.0191)	(0.00889)	(0.0293)	(0.0253)
Trade	-0.0407***	0.0461*	0.0108	-0.00886	-0.150***	-0.0260	-0.0481***	-0.0447	-0.0784*
	(0.00997)	(0.0257)	(0.0407)	(0.00946)	(0.0256)	(0.0334)	(0.0101)	(0.0292)	(0.0442)
Obs	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840
Rsq	0.024	0.941	0.978	0.011	0.934	0.983	0.028	0.927	0.975
FE									
ij	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
it	No	No	Yes	No	No	Yes	No	No	Yes
jt	No	No	Yes	No	No	Yes	No	No	Yes

Migration and Cultural Convergence

OLS Results: Migration, trade and income differences in a horse race

	Euclidean			Herfindahl			Canberra		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Migration	0.0759***	0.0485***	0.0217**	0.0385***	-0.0290*	0.0167**	0.0710***	0.0357**	0.0193
	(0.00466)	(0.0119)	(0.00980)	(0.00494)	(0.0149)	(0.00775)	(0.00478)	(0.0150)	(0.0118)
Trade	-0.0109**	0.0809***	-0.00477	0.00243	-0.0409**	-0.00557	-0.0138***	0.0502***	-0.00426
	(0.00503)	(0.0131)	(0.0164)	(0.00534)	(0.0164)	(0.0130)	(0.00516)	(0.0166)	(0.0197)
GDP Gap	-0.204***	0.0178	-0.0438***	-0.0976***	0.0185	-0.0305***	-0.152***	0.00219	-0.0370**
	(0.00761)	(0.0173)	(0.0133)	(0.00808)	(0.0217)	(0.0105)	(0.00781)	(0.0219)	(0.0159)
Constant	1.368***	-2.136***	0.379	0.509***	0.876***	0.254	1.023***	-1.270***	0.370
	(0.0903)	(0.211)	(0.363)	(0.0958)	(0.266)	(0.287)	(0.0926)	(0.268)	(0.435)
Observations	6,977	6,977	6,977	6,977	6,977	6,977	6,977	6,977	6,977
R-squared	0.123	0.910	0.967	0.030	0.860	0.980	0.079	0.855	0.952
Fixed Effects									
Country-Pair	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Dest.-Year	No	No	Yes	No	No	Yes	No	No	Yes
Origin-Year	No	No	Yes	No	No	Yes	No	No	Yes

Migration and Cultural Convergence

Countries that are initially more similar converge at a lower rate

	Euclidean	Herfindahl	Canberra
	(1)	(2)	(3)
Migration	0.0688***	0.0414***	0.0499**
	(0.0176)	(0.0129)	(0.0196)
Migration*_Similar_	-0.0991*	-0.0213	-0.440***
	(0.0533)	(0.0541)	(0.0825)
Trade	-0.0284	-0.0385	-0.0566
	(0.0464)	(0.0342)	(0.0519)
Constant	0.120	0.590	1.342
	(0.977)	(0.718)	(1.100)
Observations	1,259	1,259	1,259
R-squared	0.648	0.850	0.643
Country-Pair FE	Yes	Yes	Yes
Dest.-Year	Yes	Yes	Yes
Origin-Year	Yes	Yes	Yes
Model	Panel	Panel	Panel

Migration and Cultural Convergence

Where does this global cultural convergence come from? Mostly South-North Migration!

	North-North			South-North			South South		
	Euclidean	Herfindahl	Canberra	Euclidean	Herfindahl	Canberra	Euclidean	Herfindahl	Canberra
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Migration	-0.00334	-0.0564*	-0.209***	0.0541***	0.0367***	0.0616***	0.0111	0.0121	0.0129
	(0.0384)	(0.0316)	(0.0595)	(0.0151)	(0.0124)	(0.0192)	(0.0146)	(0.0112)	(0.0162)
Trade	0.0484	0.00482	-0.0660	-0.0120	-0.0199	-0.0394	-0.0392*	-0.0220	0.00725
	(0.0971)	(0.0798)	(0.150)	(0.0256)	(0.0210)	(0.0326)	(0.0228)	(0.0175)	(0.0252)
Constant	-0.360	1.412	4.312	-0.540	-0.145	0.0573	0.909**	0.324	-0.0141
	(2.159)	(1.774)	(3.345)	(0.521)	(0.428)	(0.662)	(0.448)	(0.344)	(0.496)
Observations	702	702	702	3,108	3,108	3,108	3,173	3,173	3,173
R-squared	0.953	0.991	0.944	0.983	0.982	0.966	0.958	0.981	0.960

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, OLS regression with full set of fixed effects (bilateral FE, destination-year FE, origin-year FE). Sample split into 3 categories: North-North for bilateral migration between OECD countries (members in 2014), South-South for bilateral migration between non-OECD countries, and South-North for bilateral migration between OECD and non-OECD.

Migration and Cultural Convergence

Convergence remains when ruling out compositional effects

	Aggregate Euclidean Distance Measure							
	With Foreign-Born				Without Foreign-Born			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Migration	0.0896***	0.0353***	0.0364***	0.0344	0.0873***	0.0344***	0.0353***	0.0335
	(0.0113)	(0.0105)	(0.0104)	(0.0855)	(0.0112)	(0.0106)	(0.0105)	(0.0854)
Trade	-0.0572***	0.0998***	0.101***	-0.0286	-0.0534***	0.101***	0.102***	-0.0348
	(0.0125)	(0.0163)	(0.0161)	(0.117)	(0.0124)	(0.0163)	(0.0161)	(0.117)
Constant	0.262	-1.052***	-1.067***	0.198	0.211	-1.042***	-1.058***	0.319
	(0.187)	(0.303)	(0.298)	(2.202)	(0.187)	(0.303)	(0.299)	(2.200)
Observations	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308
R-squared	0.046	0.638	0.656	0.995	0.044	0.635	0.653	0.995
Origin	No	Yes	No	No	No	Yes	No	No
Dest.	No	Yes	No	No	No	Yes	No	No
Dest.-Year	No	No	Yes	Yes	No	No	Yes	Yes
Origin-Year	No	No	Yes	Yes	No	No	Yes	Yes
Country-Pair	No	No	No	Yes	No	No	No	Yes

Migration and Cultural Convergence

Migration makes home and destination populations more similar culturally

- We detect the positive aggregate effect: diffusion and transmission dominate selection
- We proposed a simple model of migration based cultural change
- Evidence for cultural convergence that is robust to different statistical distance measures and cultural dimensions
- The data broadly match the empirical predictions of the model

Conclusion

Migrants contribute to the economic integration of their home countries into the world market

- The trade-creating effect of migration not just for goods but also for financial (especially FDI) and knowledge flows
- Preference channel and information channel are both at play

Migrants contribute to the cultural integration of their home countries through social remittances and cultural convergence

- Migrants are exposed to new values and norms abroad, absorb new information, transfer this information to their home communities (including political and fertility norms)
- International Migration contributes to make home and host countries culturally closer.

Conclusion

Did we learn something?

- Sociologists, anthropologists and political scientists already know all that; economists' contribution is to uncover mechanisms (causal inference) and provide quantification (elasticities, point-estimates)
- This is important to be able to impact policymaking; informed, evidence-based v. opinion-based policies

Policy implications?

- Home-countries: allow for dual citizenship, facilitate cross-border movements, diasporas involvement, etc. (again, not new)
- Host-countries: "let their people come" (Pritchett, 2006)