

# Homeward bound FDI: Are migrants a bridge over troubled finance?

A. Cuadros<sup>a</sup> J. Martín-Montaner<sup>a</sup> J. Paniagua<sup>b1</sup>

<sup>a</sup>Universitat Jaume I

<sup>b</sup>Catholic University of Valencia

IV Meeting on International Economics,  
Vila-Real, June 25, 2015

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<sup>1</sup>jordi.paniagua@ucv.es

If I were a country.....I would be a **big and rich one**

## Population

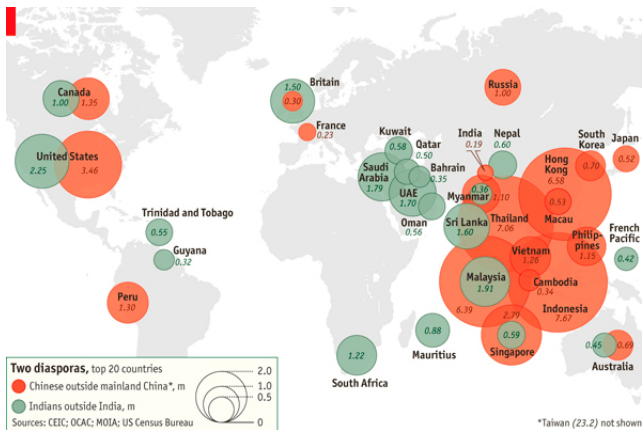
- ① China 1,366,900,000
- ② India 1,249,620,000
- ③ United States 318,787,000
- ④ Indonesia 252,164,800
- ⑤ **Migrants 215,000,000**
- ⑥ Pakistan 188,020,000
- ⑦ Nigeria 178,517,000
- ⑧ Bangladesh 157,019,000
- ⑨ Russia 146,149,200
- ⑩ Japan 127,040,000
- ⑪ Mexico 119,713,203
- ⑫ Philippines 100,286,600
- ⑬ Vietnam 89,708,900

## FDI

- ① United States 16,244,600
- ② China 8,358,400
- ③ Japan 5,960,180
- ④ Germany 3,425,956
- ⑤ France 2,611,221
- ⑥ United Kingdom 2,471,600
- ⑦ Brazil 2,254,109
- ⑧ Russia 2,029,812
- ⑨ Italy 2,013,392
- ⑩ India 1,875,213
- ⑪ Canada 1,821,445
- ⑫ Australia 1,564,419
- ⑬ **FDI 1,461,000**

# Old friends

- More Chinese people live outside mainland China than French people live in France, with some to be found in almost every country.
- There are some 22m ethnic Indians scattered across every continent



# I wish I was homeward bound

- Most of the foreign direct investment that flows into China is handled by the Chinese diaspora, loosely defined.
- Of the \$105 billion of FDI in 2010, some twothirds came from places where the population is more or less entirely ethnic Chinese

## It's who you know

China's top providers of foreign direct investment\*  
2010

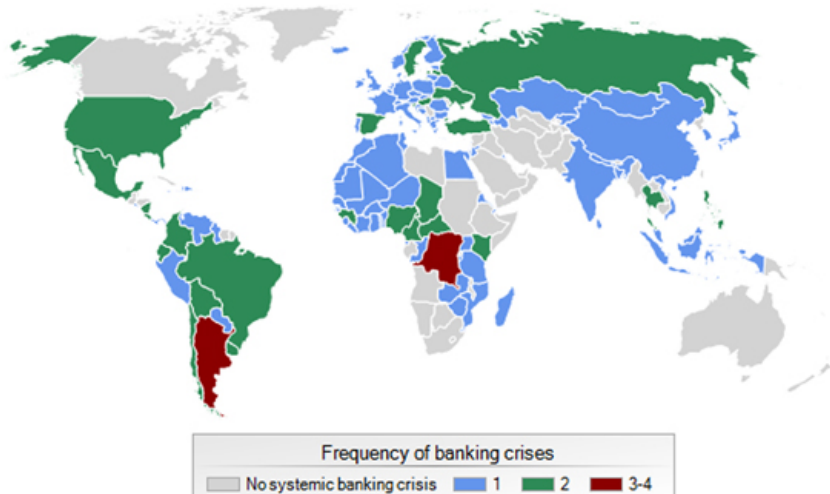
Country/territory	\$bn	As % of total	Chinese residents, m
Hong Kong	67.5	63.8	6.58
Taiwan	6.7	6.3	23.16
Singapore	5.7	5.4	2.79
Japan	4.2	4.0	0.52
United States	4.1	3.8	3.46
South Korea	2.7	2.5	0.70
Britain	1.6	1.6	0.30
France	1.2	1.2	0.23
Netherlands	1.0	0.9	0.15
Germany	0.9	0.9	0.07
Others	10.2	9.6	31.88

Sources: CEIC; OCAC;  
US Census Bureau

\*Including through tax havens

# Hello crisis my old friend

Figure: Frequency of banking crises



# The sounds of silence



# A bridge over troubled finance?

- Is there a link between FDI, financial constraints and migrants?.
- Do migrants play a role in FDI finance?
- What is the impact of the great recession on the FDI-migration link?

# This paper contributes to

- explain the effect of migrants in FDI
  - with a model where migrants step in to ease credit constraints of MNE
- gather empirical evidence that suggest that migrants have a differential influence on FDI under financial turmoil
  - On FDI capital flows, number of projects (extensive margin)



# Outline

- 1 Motivation
  - Teaser
  - Some music
  - Questions
  - Contributions
- 2 Background
  - Literature
- 3 The model
  - Domestic Production
  - Internationalization of the firm
  - Financial frictions
  - Migration & financial frictions
- 4 Data & Empirics
  - Empirics
  - Data
- 5 Results
  - Baseline
  - Interactions
  - Quantile
- 6 Conclusions
  - Lessons learned

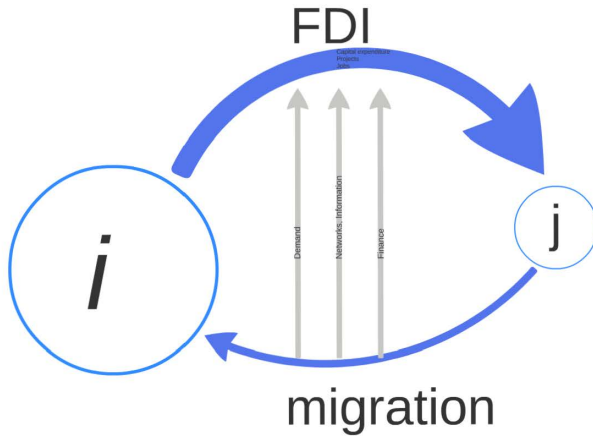
# Two strands

## Migration & FDI

- Relationship between trade, FDI and migration flows (see Kugler and Rapoport, 2011 and Buch et al, 2006)
- Personal ties between expatriates and business members of host countries (Bandelj, 2002)
- knowledge brokers (Paniagua and Sapena, 2013 and Bergstrand et al, 2008)
- Brain gain (Federici and Giannetti, 2010)
- Immigrants as business developers (Foley and Kerr, 2013)

## FDI & Credit constraints

- Financial factors may constraint foreign investment decision (Alfaro, 2004; Buch et al, 2014)
- Credit constraints derived from system banking crises affect primarily FDI's extensive margin and foreign employment (Gil Pareja et al 2013; Paniagua & Sapena 2015)
- FDI flows are more sensitive to information frictions than investment portfolio equity and debt securities (Daude and Fratzscher, 2008)



# At home

- The model considers a firm  $k$  producing and selling products in country  $i$

$$\max_{K,L} \pi_i^{Dom} = \max \{ p_i A_k \left( \frac{K}{\mu} \right)^\mu \left( \frac{L}{1-\mu} \right)^{1-\mu} - c_i K - w_i L - f \},$$

- In equilibrium, the labour market clears so that  $L = 1$

$$K^* = \mu \left( \frac{p_i A_k}{c_i} \right)^{\frac{1}{1-\mu}}.$$

# Export or FDI?

## Trade

$$\max_{K,L} \pi_i^{Exp} = \max \{ p_{ij} A_k \left( \frac{K}{\mu} \right)^\mu \left( \frac{L}{1-\mu} \right)^{1-\mu} - c_i K - w_i L - f \}.$$

## FDI

$$\max_{K,L} \pi_j^{FDI} = \max \{ p_j A_k \left( \frac{K}{\mu} \right)^\mu \left( \frac{L}{1-\mu} \right)^{1-\mu} - c_{ij} K - w_j L - f \}.$$

$$K_{ij}^* = \mu \left( \frac{p_j A_k}{c_i \tau_{ij}} \right)^{\frac{1}{1-\mu}}.$$

# A problem of limited commitment

- Limited commitment between the firm and the bank: incomplete contracts (Nunn, 2007; Antràs & Foley (forthcoming))
- The non-enforcement would thereby imply that the cost of capital increases by  $1/\delta_{ik}$
- The MNE now determines its optimal level of investment in country  $j$ :

$$K_{ij}^* = \begin{cases} \mu \left( \frac{p_j A_k}{c_i \tau_{ij} \left( (1-\gamma_i) + \frac{\gamma_i}{\delta_{ik}} \right)} \right)^{\frac{1}{1-\mu}} & \text{if } \pi_j^{FDI} > \pi_i^{Exp} \\ 0 & \text{otherwise.} \end{cases}$$

# With a little help of my friends

- In our model, this information reduces the transaction costs related to the transfer of capital  $c_{ij} = (c_i \tau_{ij}) / (migr_{ji})$ .
- Nevertheless, this effect might be offset by the probability of financial crises in migrants' home countries.

$$K_{ij}^* = \mu \left( \frac{p_j A_k}{c_i \tau_{ij} \left( (1 - \gamma_i) + \frac{\gamma_i}{\delta_{ik}} \right)} \right)^{\frac{1}{1-\mu}} \times \left( \frac{migr_{ji}}{\left( (1 - \gamma_j) + \frac{\gamma_j}{\delta_{jk}} \right)} \right)^{\frac{1}{1-\mu}}$$

# Gravity equation

- Baseline:

$$\ln FDI_{ijt} = \beta_1 \ln(Y_{it} * Y_{jt}) + \beta_2 \ln(D_{ij}) + \beta_3 border_{ij} + \beta_4 colony_{ij} + \beta_5 lang_{ij} + \beta_6 smctry_{ij} + \beta_7 rel_{ij} + \beta_8 locked_j + \beta_{10} BIT_{ijt} + \beta_{11} FTA_{ijt} + \beta_{12} GR_{it} + \beta_{13} \ln(migr_{jit}) + \beta_{14} \ln(migr_{jit}) * GR_{it} + \beta_{15} \ln(migr_{jit}) * GR_{jt} + \lambda_t + e_{ijt},$$

- Aggregate bilateral FDI flows
- Extensive margin
- PPML (Silva & Tenreyro 2006)



# Data

- Dataset Firm level greenfield investments and stock of migrants
  - Period: 2003-2012
  - 141 countries (excluding those for which there is no migration data)
  - i countries are developed j are mixed
- Database for systemic banking crisis: Laeven and Valencia (2013)
  - 1 Significant signs of financial distress in the banking system (significant bank runs, losses in the banking system, and/or bank liquidations)
  - 2 Significant banking policy intervention measures in response to significant losses in the banking system.

	Total FDI				Number of projects (extensive margin)			
	Country FE		Country-pair FE		Country FE		Country-pair FE	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	PPML	OLS	PPML	OLS	PPML	OLS	PPML
$\ln(Y_{it} * Y_{jt})$	0.041 (0.44)	-0.069 (0.37)	0.136 (0.38)	0.344* (0.18)	0.122 (0.17)	-0.443 (0.31)	0.134 (0.14)	-0.474 (0.31)
$\ln(D_{ij})$	-0.551*** (0.09)	-0.437*** (0.10)			0.281*** (0.05)	0.428*** (0.06)		
$BIT_{ijt}$	-0.414** (0.17)	-0.126 (0.15)	-0.333 (0.29)	0.091 (0.09)	-0.221** (0.10)	-0.114 (0.09)	0.101 (0.10)	0.209* (0.11)
$FTA_{ijt}$	0.429*** (0.12)	-0.507*** (0.15)	-0.821** (0.33)	-0.009 (0.14)	-0.170** (0.07)	0.066 (0.07)	0.222* (0.12)	0.316 (0.19)
$border_{ij}$	0.025 (0.21)	-0.192 (0.34)			0.014 (0.13)	-0.470** (0.22)		
$lang_{ij}$	0.442** (0.17)	0.446*** (0.15)			0.375*** (0.11)	0.649*** (0.09)		
$col_{ij}$	0.795*** (0.19)	0.999*** (0.18)			0.464*** (0.13)	0.650*** (0.12)		
$smctry_{ij}$	-0.340 (0.35)	-0.109 (0.46)			0.137 (0.237)	0.364 (0.39)		
$rel_{ij}$	0.064 (0.40)	0.127 (0.44)			-0.170 (0.203)	-0.175 (0.27)		
$locked_j$	-0.051 (0.11)	-0.313* (0.162)			-0.014 (0.061)	-0.127 (0.11)		
$\ln(migr_{jit})$	0.118*** (0.03)	0.210*** (0.03)	0.157 (0.19)	0.095 (0.08)	0.080*** (0.02)	0.189*** (0.03)	-0.032 (0.07)	0.238* (0.12)
$GR_{jit}$	0.036 (0.09)	0.126 (0.08)	0.119 (0.09)	0.024 (0.03)	0.046 (0.03)	-0.017 (0.04)	0.084** (0.03)	-0.021 (0.04)
Observations	3148	6557	3148	6370	3148	6557	3148	6370
$R^2$	0.409	0.683	0.025		0.661	0.937	0.085	
Country FE	Yes	Yes	No	No	Yes	Yes	No	No
Country pair FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Robust standard errors in parentheses; dependent variable for OLS in logs and for PPML in levels; only variables of interest are reported.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	PPML	OLS	PPML	OLS	PPML	OLS	PPML
$\ln(migr_{jit})$	0.099** (0.04)	0.221*** (0.04)	0.140 (0.19)	0.087 (0.08)	0.067*** (0.02)	0.196*** (0.02)	-0.032 (0.07)	0.219* (0.12)
$GR_{ijt}$	-0.657 (0.41)	0.491 (0.30)	0.260 (0.37)	0.364 (0.79)	-0.469*** (0.16)	0.249 (0.19)	-0.119 (0.13)	0.298 (0.18)
$\ln(migr_{jit}) * GR_{it}$	0.078** (0.03)	-0.028 (0.02)	-0.002 (0.03)	0.009 (0.01)	0.053*** (0.01)	-0.017 (0.01)	0.022* (0.01)	-0.022 (0.01)
$\ln(migr_{jit}) * GR_{jt}$	0.046 (0.04)	-0.045 (0.03)	-0.044 (0.04)	-0.031 (0.07)	0.047*** (0.01)	-0.036* (0.02)	0.013 (0.01)	-0.041** (0.01)
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$R^2$	0.410	0.687	0.027		0.662	0.938	0.087	
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Country pair FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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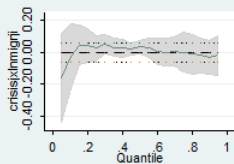
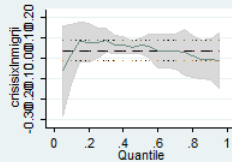
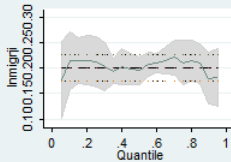
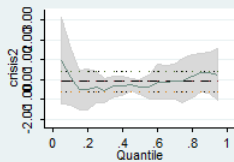
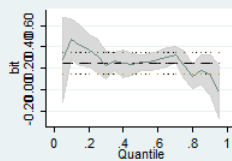
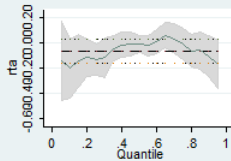
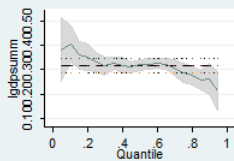
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	(1)	(2)	(3)	(4)
	Q(0.25)	Q(0.50)	Q(0.75)	Q(0.90)
$\ln(Y_{it} * Y_{jt})$	0.333*** (0.02)	0.321*** (0.01)	0.288*** (0.02)	0.261*** (0.04)
$BIT_{ijt}$	-0.134* (0.07)	-0.0107 (0.02)	-0.0116 (0.08)	-0.106 (0.068)
$FTA_{ijt}$	0.313*** (0.09)	0.254*** (0.03)	0.230*** (0.07)	0.139 (0.10)
$GR_{ijt}$	-0.373 (0.32)	-0.387* (0.21)	-0.0591 (0.22)	0.348 (0.58)
$\ln(migr_{jit})$	0.213*** (0.01)	0.195*** (0.01)	0.211*** (0.01)	0.180*** (0.01)
$\ln(migr_{jit}) * GR_{it}$	0.0737** (0.02)	0.062*** (0.02)	0.029 (0.02)	-0.007 (0.05)
$\ln(migr_{jit}) * GR_{jt}$	0.025 (0.03)	0.033 (0.02)	0.002 (0.03)	-0.034 (0.05)
Observations	3148	3148	3148	3148
Country pair FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Notes: Bootstrap standard errors in parentheses.

Dependent variable total FDI in logs

\*  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$



# Take-away

- ➊ New channel in the FDI-migration link
- ➋ Migrants offset credit constraints for FDI
  - ➊ through the the extensive margin (primarily)
- ➌ Migrants effect is **potentiated** by credit constraints at the **source**
- ➍ The role is migrants is significant for countries with low levels of FDI (e.g., smaller projects)

# Our study is relevant for:

- 1 Theory (migration & FDI)
- 2 Empirical evidence
- 3 Policy (e.g., policies targeted to migrants' remittances?)



The end

# Thanks!!!

