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Foreign Currency Borrowing by Small Firms

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6th Annual NBP-SNB Joint Seminar, 15 June 2009

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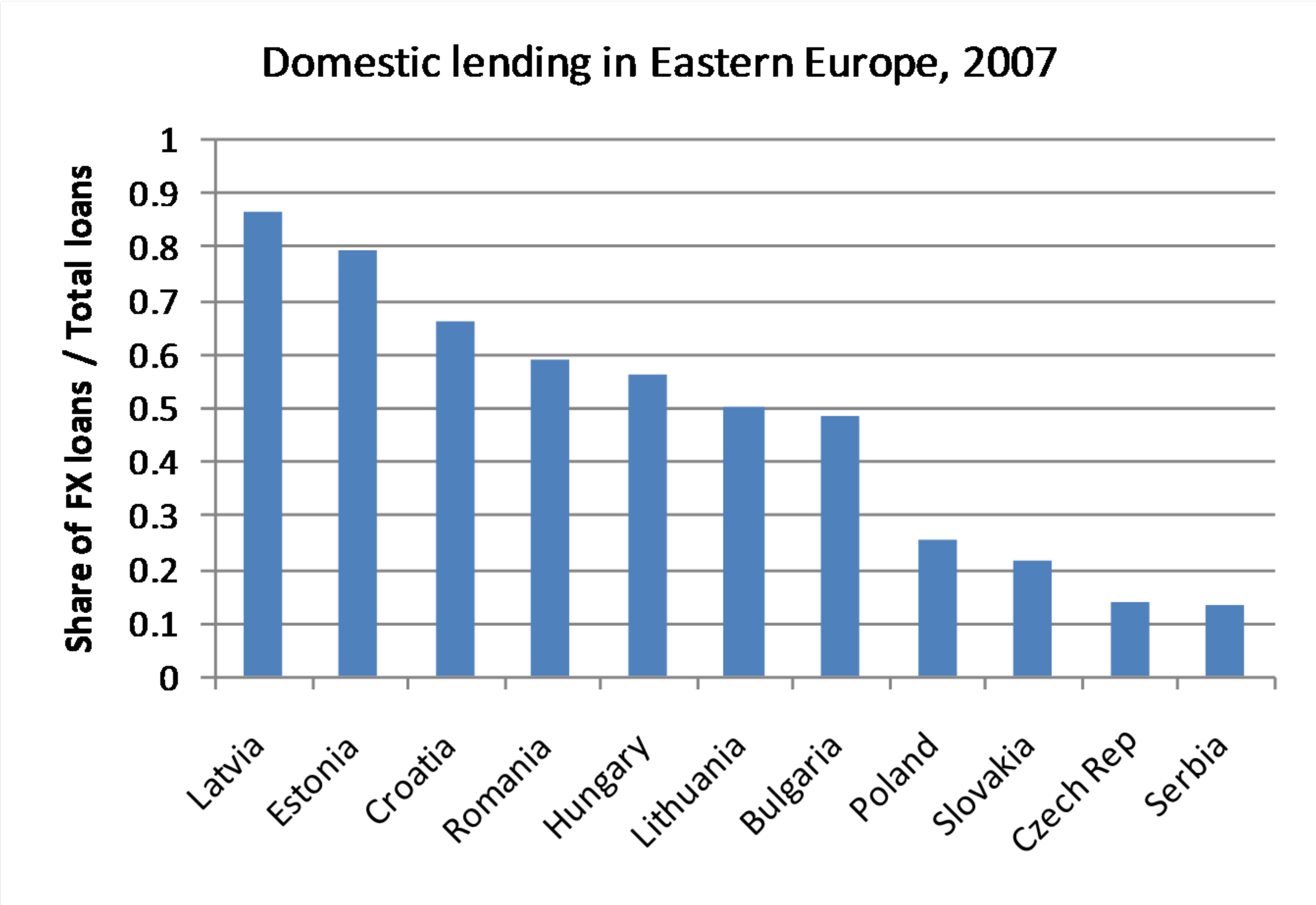


Motivation

- FX borrowing in Eastern Europe is mainly retail
  - residential mortgages
  - small enterprise credit

⇒ Large share of FX borrowing may be unhedged

⇒ Limited information on ability to repay FX loans

- financial opaqueness of retail borrowers
- weak institutions
- foreign-owned banks

	Number of banks (foreign-owned)	Asset share of foreign-owned banks (%)	Asset share of state-owned banks (%)
Bulgaria	29 (21)	82.3	2.1
Croatia	35 (16)	90.4	4.7
Hungary	40 (27)	64.2	3.7
Latvia	25 (14)	63.8	4.2
Lithuania	14 (6)	91.7	0.0
Poland	64 (54)	75.5	19.5
Romania	31 (26)	87.3	5.7
Russia	1136 (86)	17.2	n.a.
Slovakia	26 (15)	99.0	1.0
Ukraine	175 (40)	39.4	8.0

Contribution of the paper

- Theoretical:
  - we enrich existing models of FX borrowing by examining how information asymmetries affect loan currency choice
- Empirical:
  - examine firm-level and country-level determinants of FX borrowing by 3105 small firms in 26 transition countries

Foreign currency borrowing by firms: theory

- Natural hedge, credit cost, and credit risk
  - foreign currency income of firm (+)
  - interest rate differential (+)
  - exchange rate volatility (-)
  - firm distress costs (-)

    (Allayanis, Brown & Klapper, JF 2003)
- Our contribution
  - information asymmetry on ability to repay FX loan (currency of income, level of indebtedness)

  $\Rightarrow$ may increase foreign currency borrowing

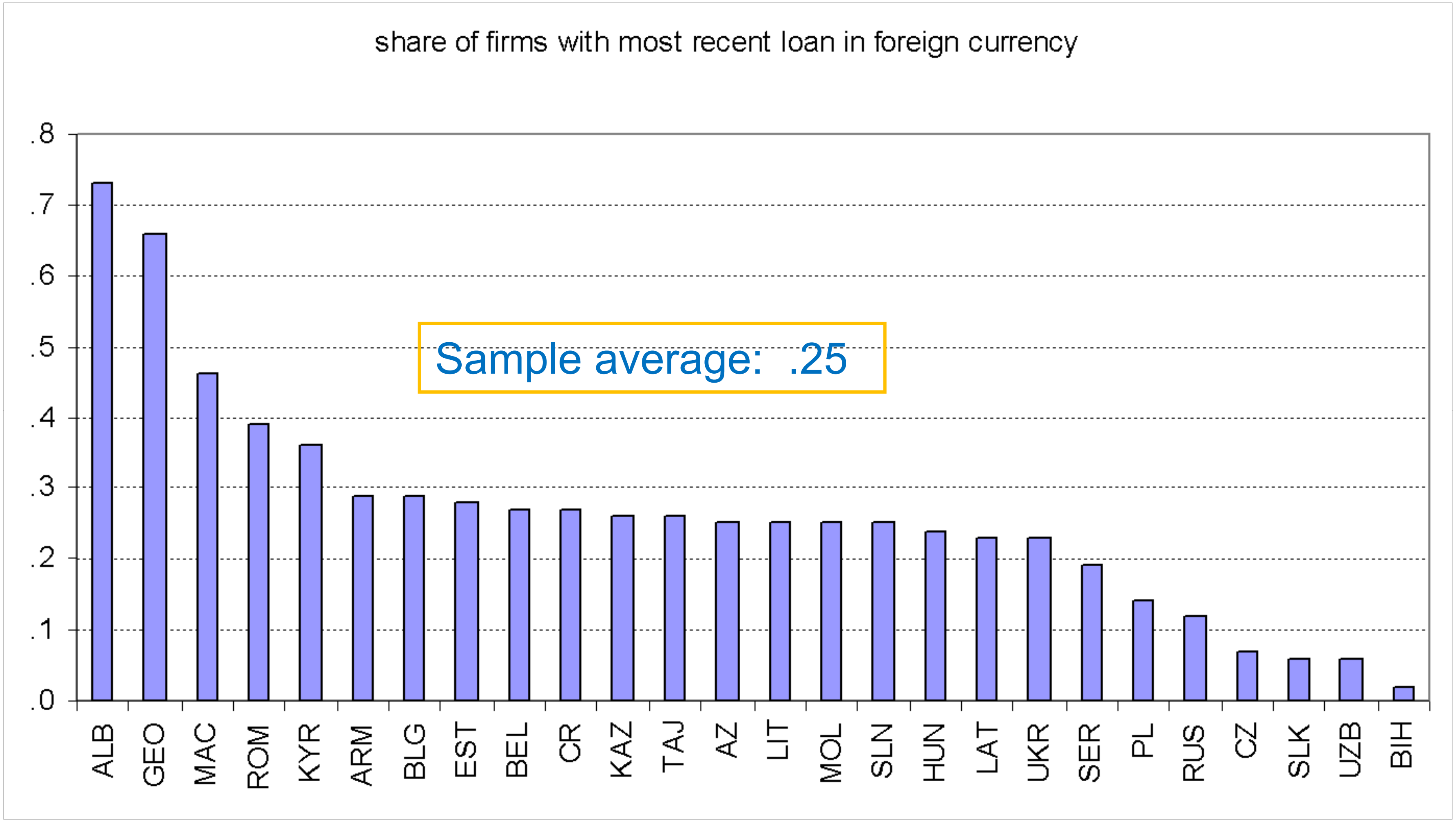
Foreign currency borrowing by firms: evidence

- FX borrowing by (large) firms
  - Kedia & Mozumdar JB 2003 — US
  - Keloharju & Niskannen EFM 2001 — Finland
  - Allayanis, Brown & Klapper, JF 2003 — East Asia
  - Kamil, IMF 2008 — Latin America
- Aggregate FX borrowing in Eastern Europe
  - Luca & Petrova JBF 2008
- Our contribution
  - loan-level analysis for small firms in Eastern Europe & CIS

Data: firm-level loan characteristics

- World Bank / EBRD firm survey (BEEPS)
  - representative survey for 26 transition countries
  - 2005 Survey: 9’098 firms
- Information on most recent loan
  - 3’105 observations from 26 countries
  - duration, collateral, interest rate
  - currency denomination: Foreign currency loan ? (yes / no)
  - date of disbursement (2002:I -2005:II): synthetic panel

Forex borrowing by country



Firm-level explanatory variables (BEEPS)

- Foreign currency income
  - exporter, sales to multinationals, foreign owner
- Distress costs
  - debt, family firm
- Financial transparency
  - audited firm, income via bank
- Other firm-level variables:
  - International accounting standards, firm size , firm age
  - industry fixed effects

Panel A: Sample means by loan currency

This panel reports means of firm characteristics for firms in our sample as well as for all firms covered by the survey (i.e. including those firms who report having no loan, for which the most recent loan was received prior to 2002, or firms which did not indicate the currency of their most recent loan). The reported difference tests between firms with local currency loans and foreign currency loans are standard t-tests. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	All firms	Firms in sample: with local currency loan	Firms in sample: with foreign currency loan	Difference tests	
Observations	*9,098*	*2,335*	*770*		
Exporter	0.25	0.31	0.43	t(3,101) = 6.25	***
Sales to multinationals	0.14	0.17	0.24	t(3,020) = 4.46	***
Foreign firm	0.10	0.08	0.20	t(3,105) = 9.03	***
Family firm	0.73	0.73	0.70	t(3,011) = 1.20	
Debt	0.23	0.38	0.40	t(3,054) = 1.21	
Audited firm	0.46	0.51	0.59	t(3,071) = 4.20	***
Income via bank	0.50	0.58	0.55	t(3,099) = 1.94	*
International accounting	0.16	0.19	0.31	t(3,105) = 7.16	***
Small firm	0.71	0.62	0.57	t(3,105) = 2.49	**
Age	15.36	16.19	14.19	t(3103) = 2.52	**
Security costs	0.83	0.69	0.93	t(3,105) = 3.50	***

Firm-level regression results

	full sample	Sample split by firm earnings: local currency	foreign currency
FX income			
Exporter (+)	.081***		
Sales to multis (+)	.054*		
Foreign firm (+)	.200***		
Distress costs			
Family firm (-)	.030	.034	-.008
Debt (-)	.024	.015	.033
Transparency			
Audited firm (-)	.012	-.029	.052*
Income via bank (-)	-.021	-.024	-.009
Observations	2,779	844	1,791
Fixed effects	Industry / country fixed effects		
Firm controls:	Accounting, size, age; Loan duration & collateral		
Methodology:	Probit, standard errors adjusted for clustering		

Country-level explanatory variables

• Monetary conditions	
– interest differentials to USD / EUR	IMF / Basso et al. (*ECB* 2007)
– exchange rate regime / volatility	IMF
– inflation / inflation volatility	IMF
• Transparency	
– foreign bank presence	EBRD
– enterprise reform index	EBRD
• Controls:	
– dollarization	Basso et al. (*ECB* 2007)
– FX market development	IMF
– regulation of FX positions / capital inflows	IMF
– EU membership / accession	

Country-level regression results

	no country effects	with country effects	with institutional variables
Monetary conditions			
Interest differential Euro (+)	.007***	.004*	-.001
Exrate volatility-Euro (-)	.003	.002	.005
Inflation volatility (+)	.020***	.037***	.022*
Transparency			
Foreign banks (+)			.002***
Enterprise reform (-)			-.265***
Observations	2584	2584	1493
fixed effects	industry	industry, country	industry
Firm controls:	Income currency, Distress costs, Transparency, Loan terms		
Methodology:	Probit, st. errors adj. for clustering		

Robustness tests

- Firm-level: selection corrected (Heckman) estimations
  - Selection 1: Firm needs loan
  - Selection 2: Firm has loan

  ⇒ no change in firm-level results

- Country-level: regressions by country
  ⇒ no effect of interest differentials or exchange rate volatility

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Summary & conclusion

- FX borrowing by small firms is related to
  - firm-level income structure (FX income)
  - institutions which affect financial transparency
- FX borrowing seems unrelated to
  - changes in interest rate differentials
  - distress costs and financial transparency at firm-level

Forex borrowing by small firms in Eastern Europe does not seem to be dominated by unhedged currency bets … but may be promoted by weak information of lenders.