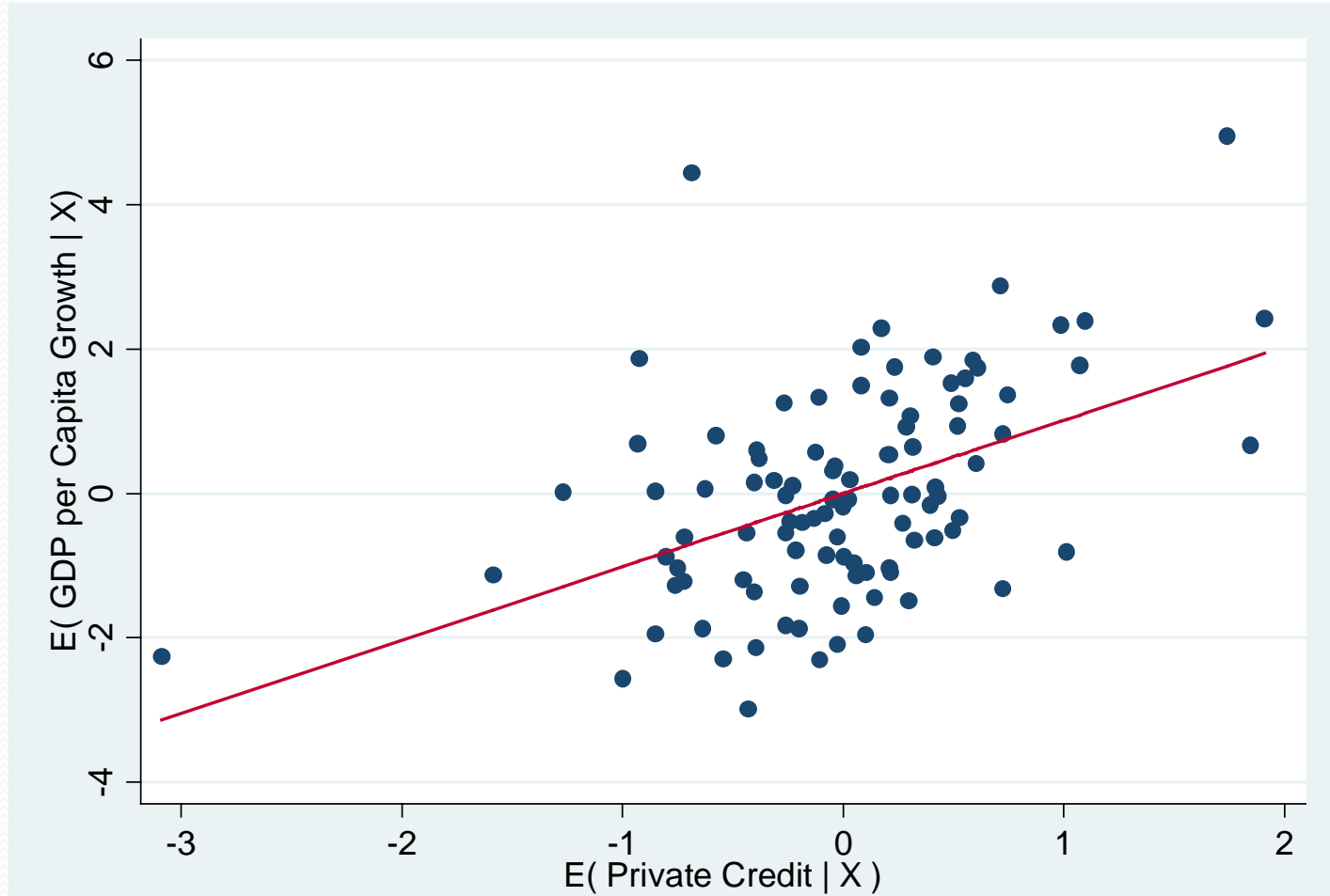


# The Finance and Growth Research Agenda: From Depth to Breadth

Thorsten Beck



# Finance and growth – the evidence



# Finance and Growth – the identification challenge

- Instrumental variable approach
  - Cross-country – historical and geographic experience as external instruments
  - Panel – internal instruments
- Time-series approach: forecast capacity of finance for growth
- Differences-in-differences approach: smoking gun
- Firm-level evidence
- Household-level evidence (more on this later)

# Finance and Growth – the channels

- Allocation more than accumulation
- Cross-country
  - Productivity growth vs. capital accumulation/savings
  - Capital reallocation
- Differences-in-differences approach
  - Helps industries with more need of external finance
  - Helps industries with growth opportunities
  - Helps industries with higher shares of small firms
- Effect seems largest for middle-income countries
- Effect seems to come through enterprise rather than household credit

# What does the current crisis have to tell the finance and growth literature?

- Too much finance?
  - Not in most developing countries
- What role for finance?
  - Finance for markets and growth or:
  - Finance as export sector (Iceland, Switzerland)
- Crisis underlines the importance of
  - Incentive-compatible regulatory framework
  - Political economy of finance
- Cross-border banking
  - Yes, but with proper regulation

# Finance and Growth – Who benefits?

- Pro-poor

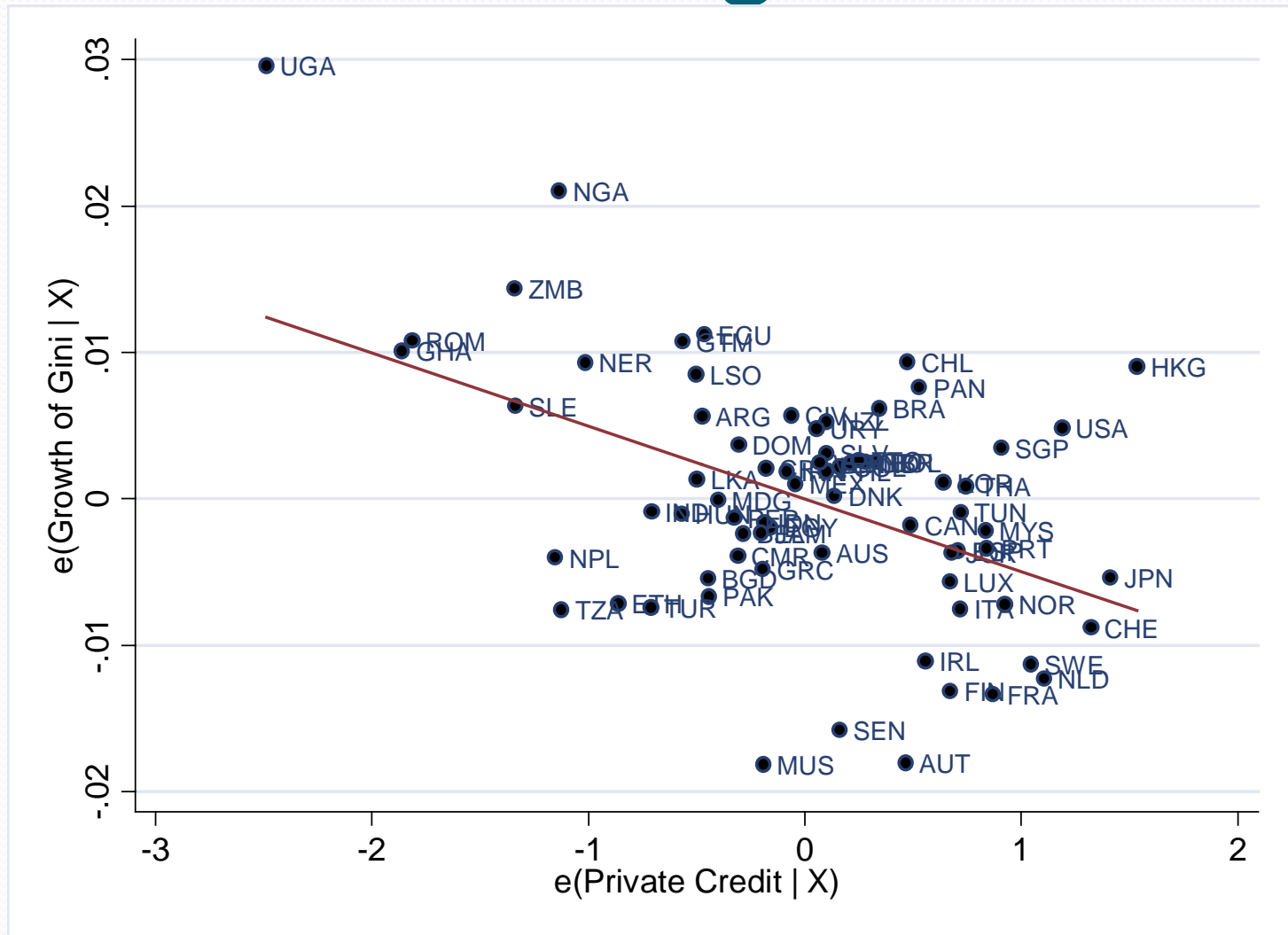
- Credit constraints are particularly binding for the poor (Banerjee and Newman, 1993; Galor and Zeira, 1993; Aghion and Bolton, 1997)
- Finance helps overcome barriers of indivisible investment (McKinnon, 1973)
- Finance foster economy-wide openness and competition by facilitating entry (Rajan and Zingales, 2003)

- Pro-rich:

- Non-linear relationship (Greenwood and Jovanovic, 1993)
- Credit is channeled to incumbent and connected and not to entrepreneurs with best opportunities (Lamoreaux, 1986; Haber, 1991)

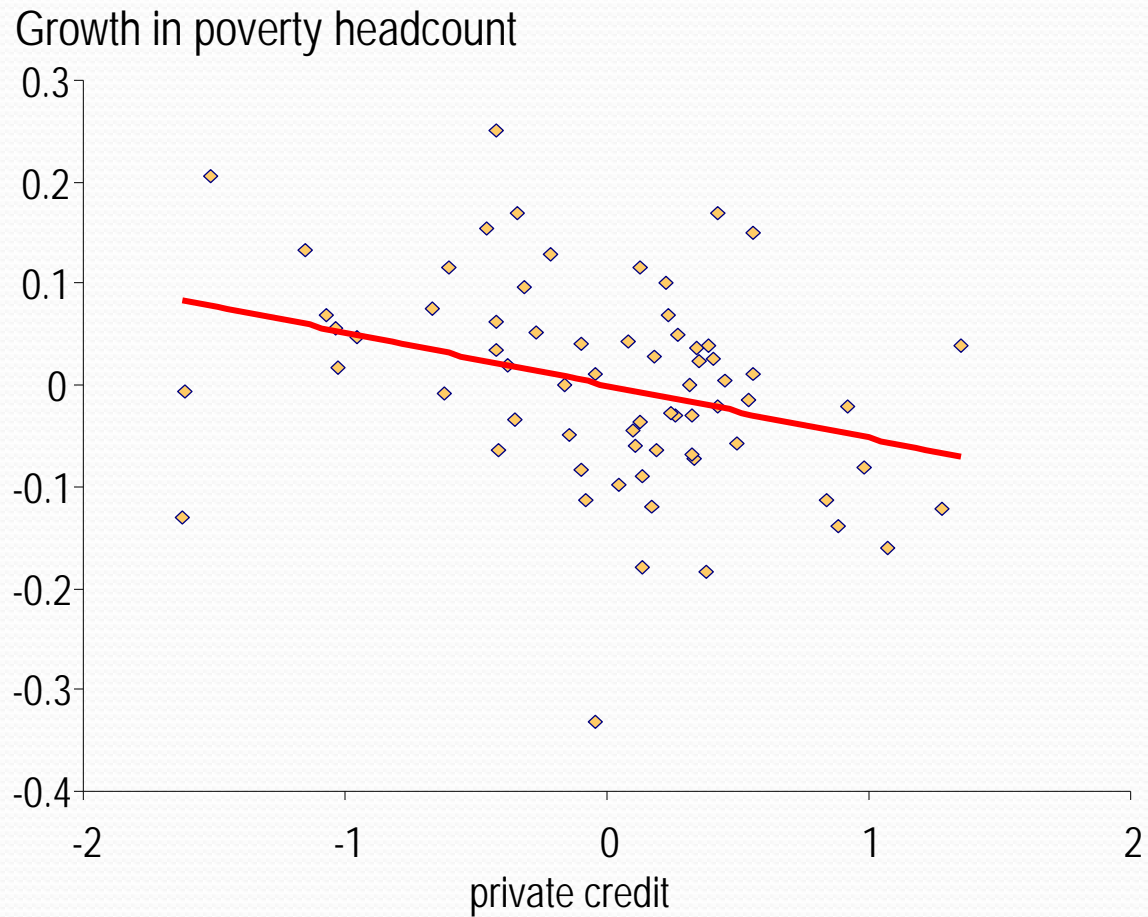


# Finance and change in Gini





# Finance and Poverty Reduction



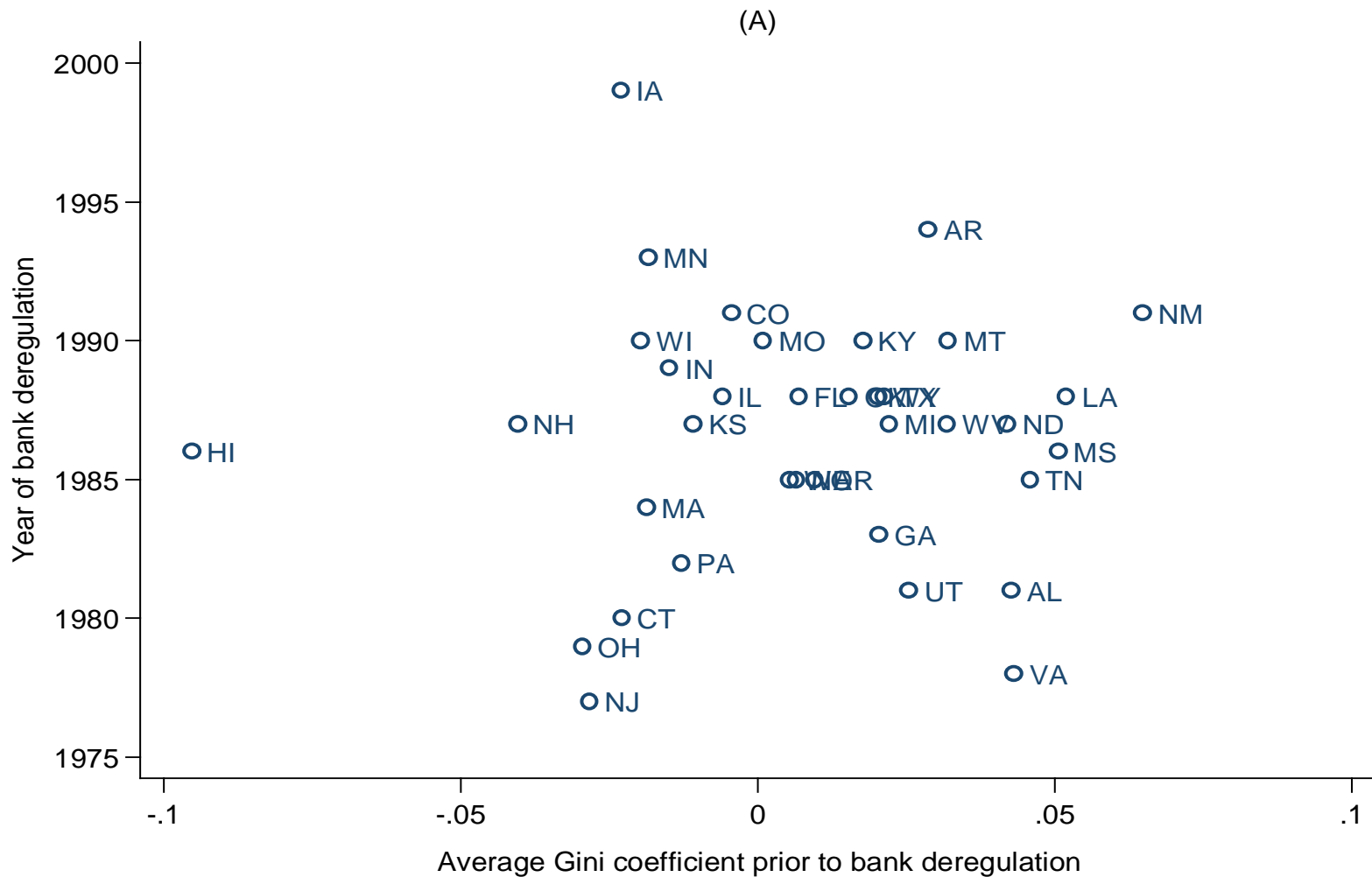
# Finance and Income Inequality – Summary of cross-country work

- Finance is pro-growth and pro-poor!
  - Robust to outliers, IV and GMM
- Almost half of positive effect of financial development on income growth of poorest income quintile comes through income distribution effect
- Important caveats:
  - Measurement
  - Identification
  - Channels

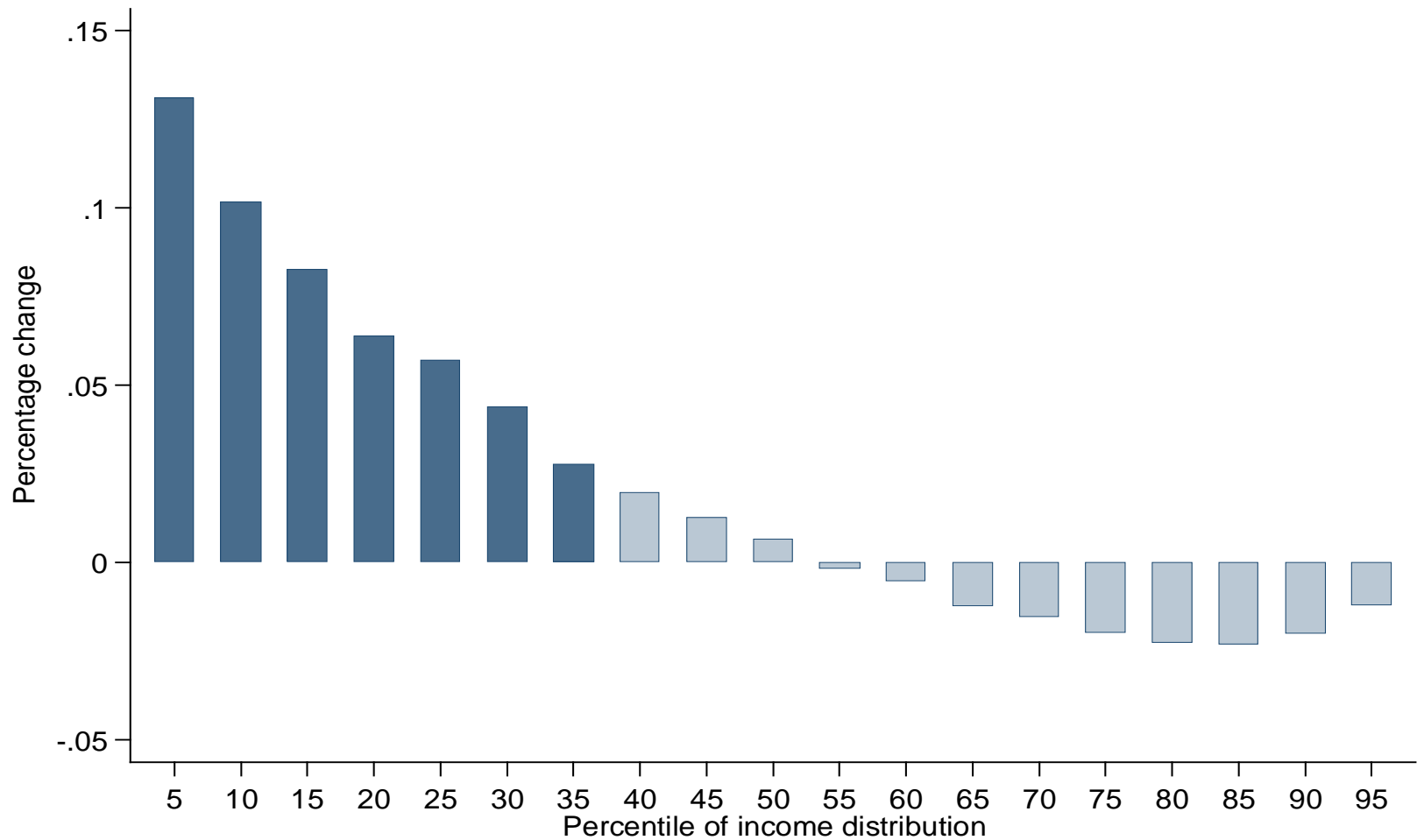
# Finance and Income Distribution – exploiting U.S. branching deregulation

- Deregulation at different times allows to exploit state-time-panel
- Difference-in-difference estimation of relationship between branch deregulation and  $\log(\text{Gini})$
- Control for state and year dummies and time-variant state characteristics
- 1977 to 2005
- Little concerns of endogeneity
- Single policy change - reduce identification and comparability problems often associated with cross-country comparisons

# No endogeneity concerns

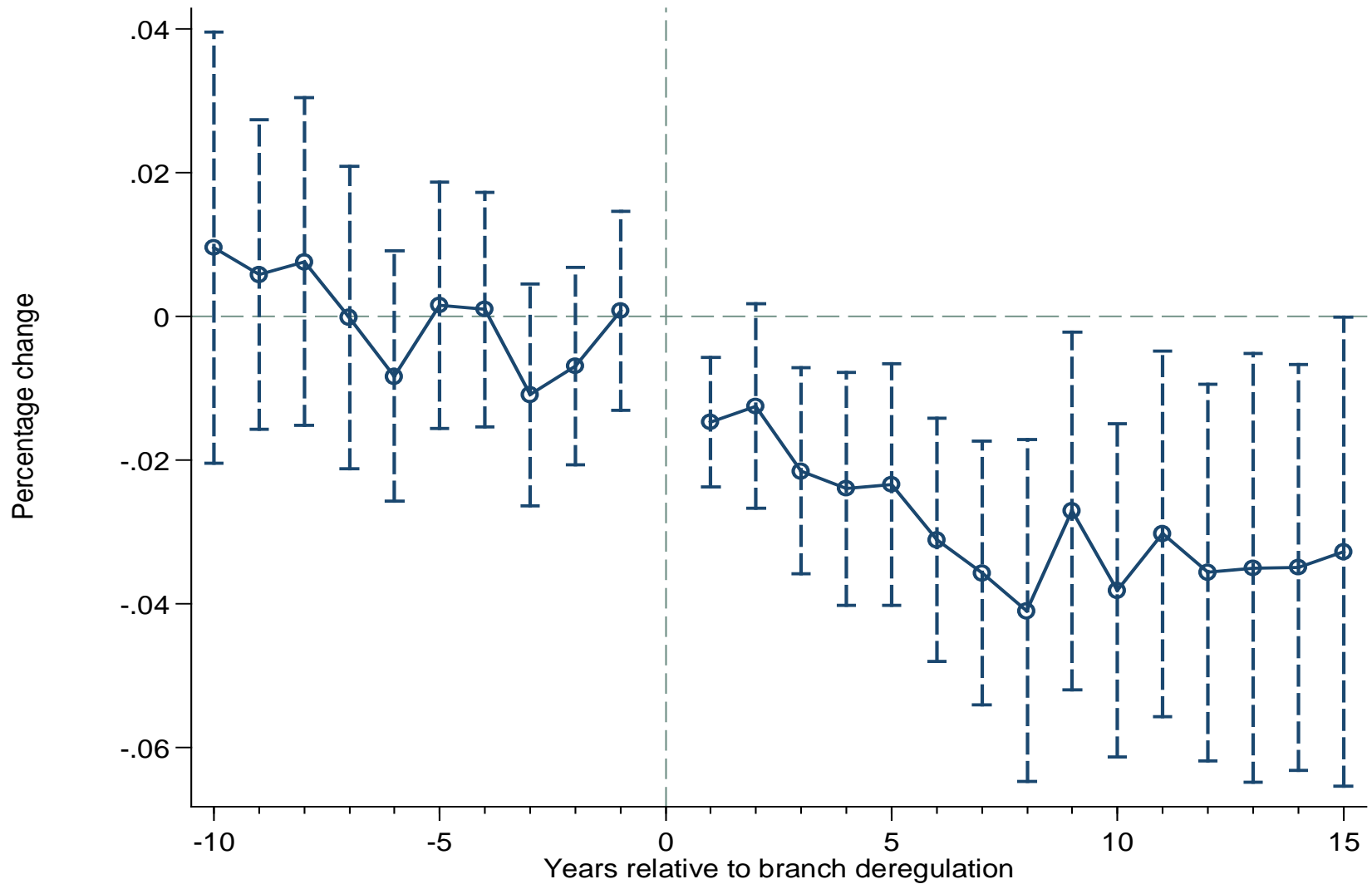


# Impact of deregulation across income groups



Significant at 5%      Not significant

# The effect of branch deregulation on income



# Possible channels suggested by theory

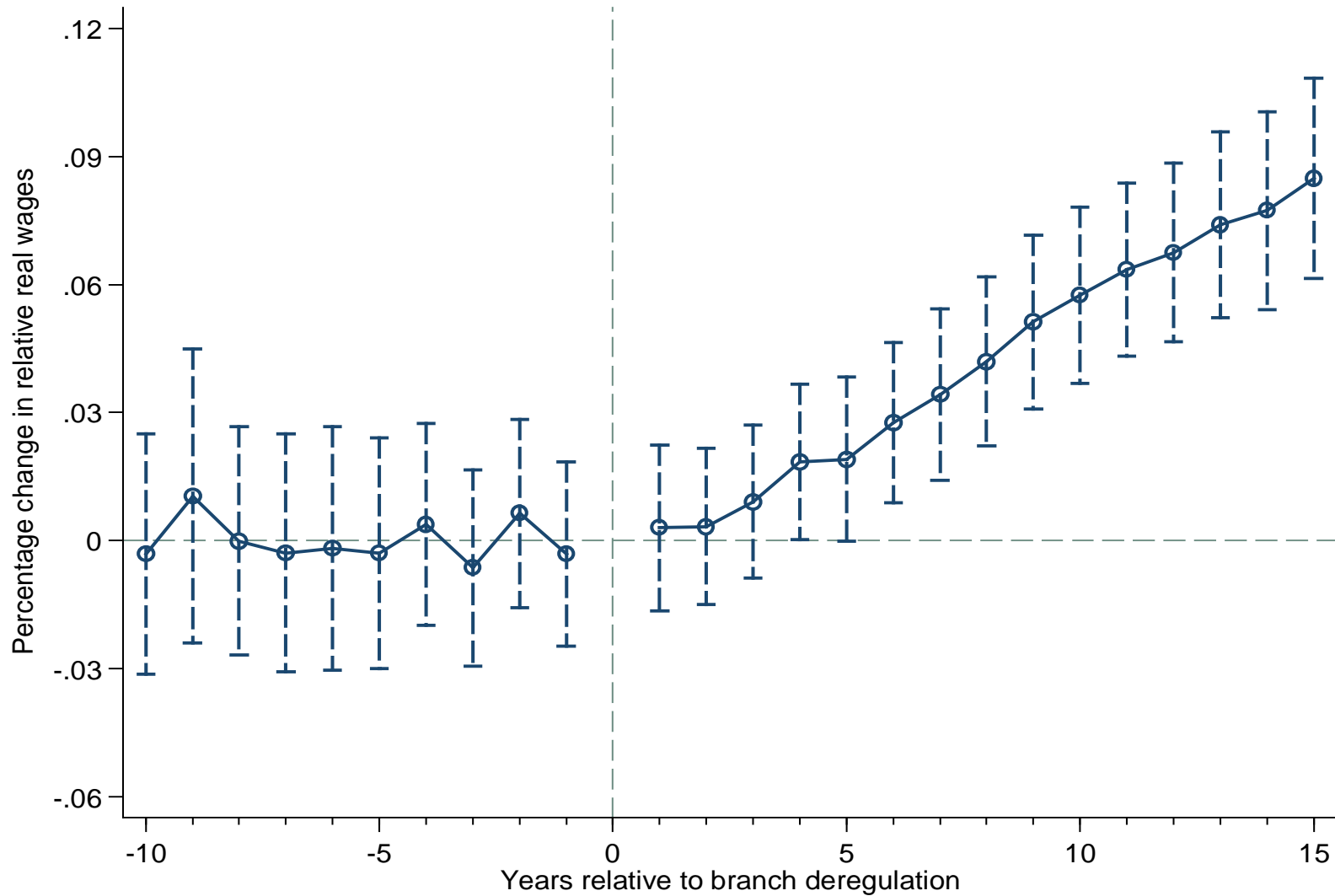
- Branch deregulation alleviates credit constraints on the poor allowing them accumulate human capital
  - Galor and Zeira (1993)
- Branch deregulation alleviates credit constraints on the poor allowing them to become entrepreneurs and realize profitable projects
  - Banerjee and Newman (1993)
  - Muhamed Yunus (Grameen Bank)
- Branch deregulation lowers cost of capital of non-financial sector, which raises marginal product of labor, wages and demand for labor...

# Decomposition

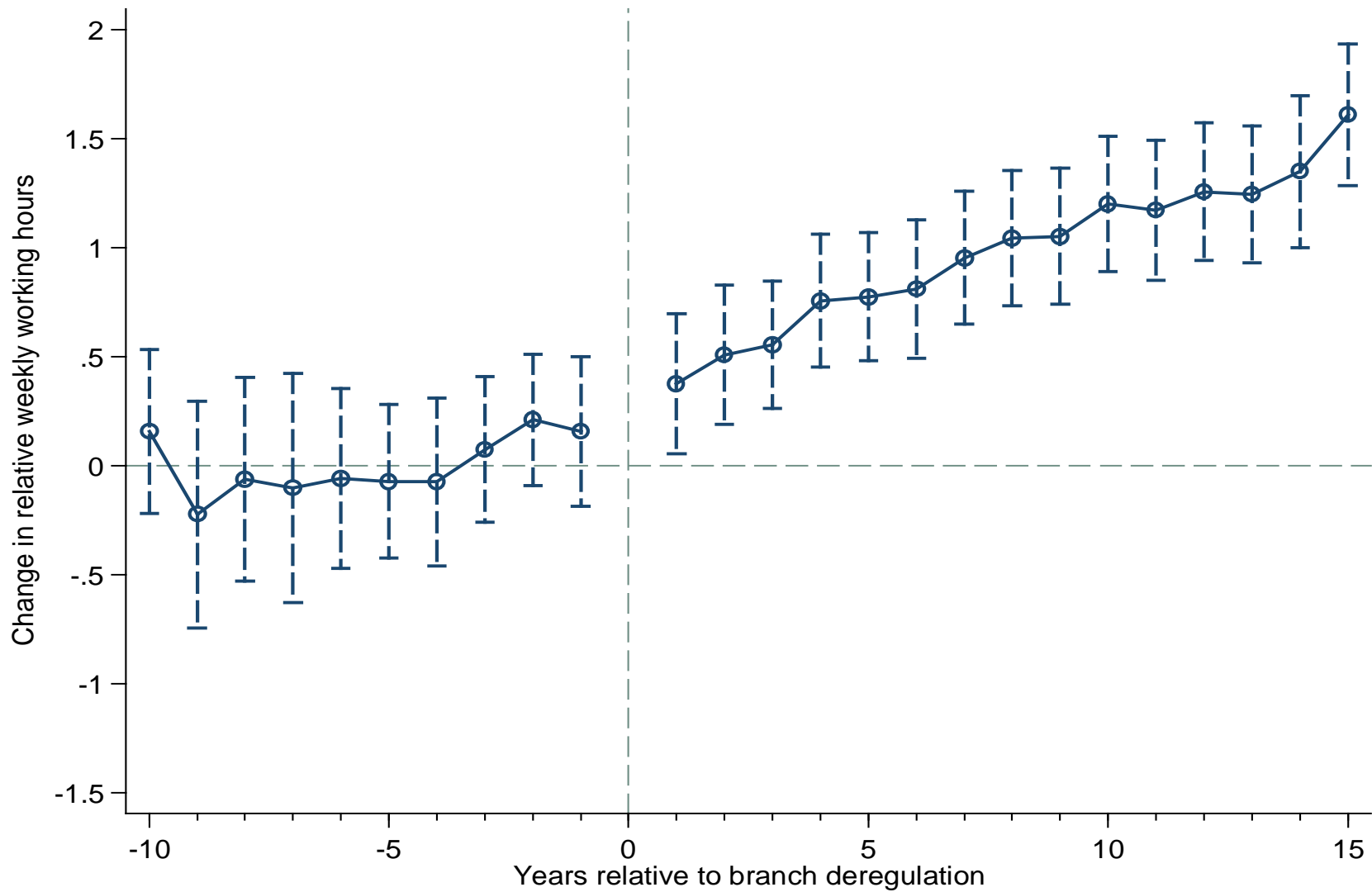
				Employment Groups:	
Panel A:		Between	Within	Self	
All Workers	Total	Groups	Groups	Employed	Salaried
Bank deregulation	-0.0103 (0.0043)**	0.0002 (0.0003)	-0.0105 (0.0042)**	-0.0077 (0.0074)	-0.0102 (0.0042)**
				Education Groups:	
Panel B:		Between	Within	High	Some
Salaried Workers	Total	Groups	Groups	School or Less	College or More
Bank deregulation	-0.0102 (0.0042)**	-0.0028 (0.0011)**	-0.0074 (0.0035)**	-0.0086 (0.0043)*	-0.0039 (0.0038)



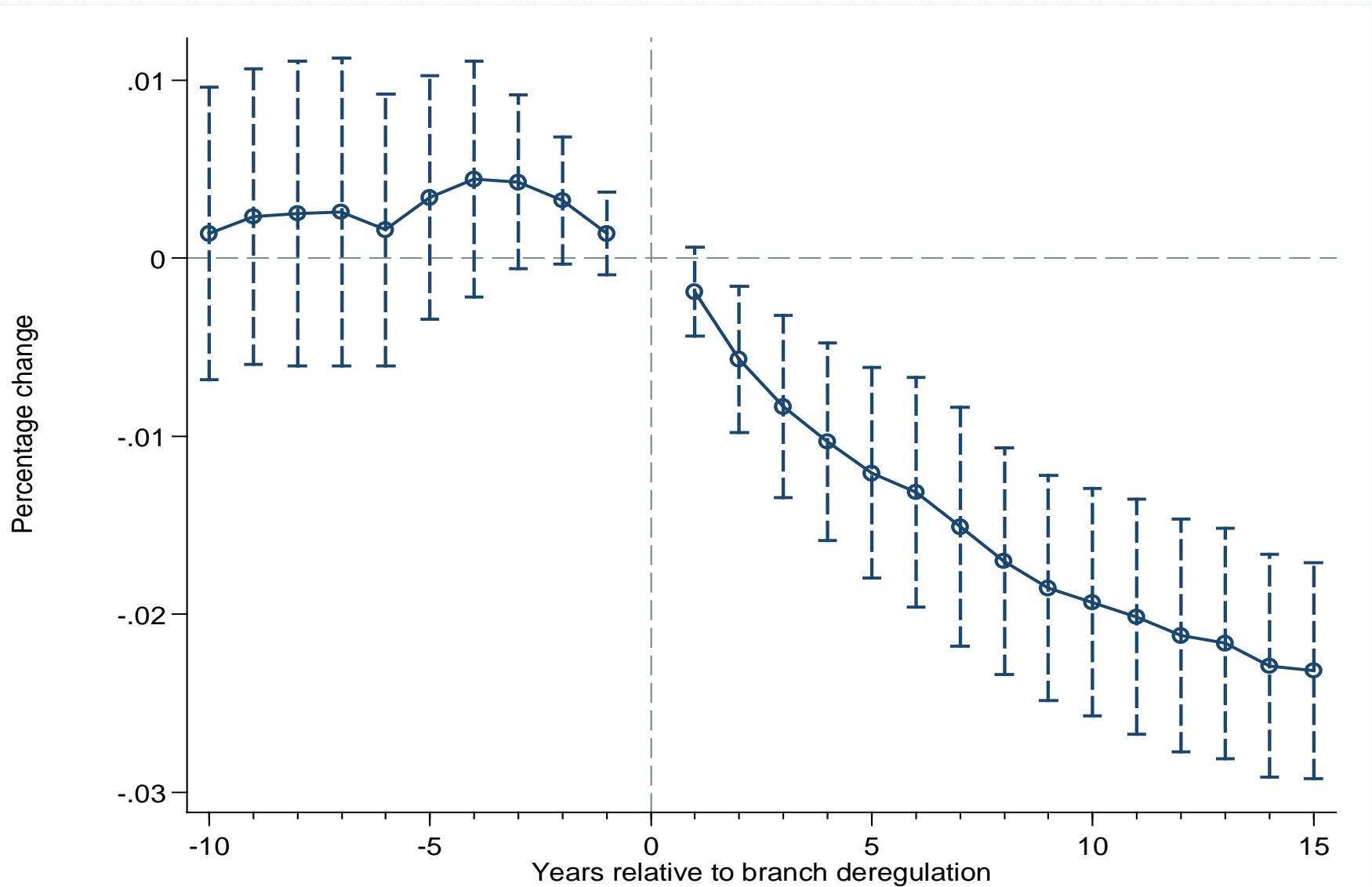
# Branch deregulation and the labor market (1)



# Branch deregulation and the labor market (2)



# Branch deregulation and the labor market (3)



# Branch deregulation and income distribution – labor market channel

- Labor market effect: Deregulation boosts labor demand primarily for the unskilled.
- This increases the employment of less skilled workers, explaining reduction in wage income gap
- Effect of branch deregulation goes through improved capital allocation and higher investment, not through expanding access to credit services
- Effect of liberalization on income distribution NOT through:
  - Higher entrepreneurship
  - Human capital allocation

# Finance, Income Inequality and Poverty Reduction

- Finance reduces income inequality
- Mechanism seems to work through better capital allocation and structural changes
  - U.S. evidence (see above)
  - General equilibrium models for Thailand suggests that financial development results in shifting labor from agriculture subsistence to formal sector, with repercussions for growth and income inequality (Gine and Townsend, 2004)
- Access to credit for all? Microcredit?
  - Rigorous microcredit studies find mixed results on the impact of access to credit by the poor (Pitt and Khandker, 1998; Morduch, 1998; Khandker, 2003; Karlan and Zinman, 2006; Coleman, 1999)
  - Large share of microcredit used for consumption purposes
- Credit for Growth; Basic financial services for all?

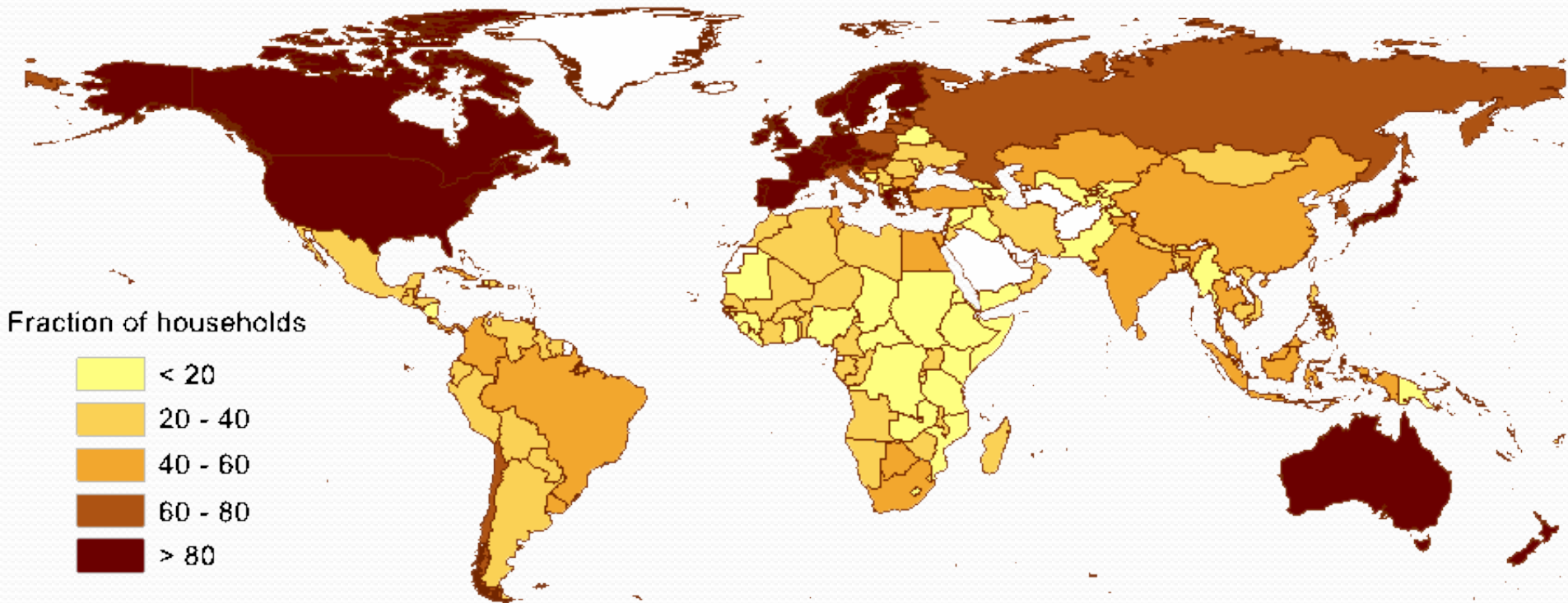
# Finance and Poverty – how to assess the channels

- Within-country variation in large countries
- Natural or policy experiments
  - Allow to control for other factors
  - Endogeneity and omitted variables
- Randomized experiments
  - Controlled by researchers
  - External validity?
  - Cannot test several competing hypotheses
- Structural models (Townsend et al.)
  - Theory-based
  - Limit to which we can control for other possible theories

# The inclusion agenda

- Credit-led – microcredit movement
  - Limitation in resources, use mostly for consumer credit, aggregate effect doubtful
- Savings-led – Dupas and Robinson (2010)
  - Can also increase investment, entrepreneurship
  - Limited by individual and aggregate savings rate
- Transaction-led: example M-Pesa in Kenya
  - start from basic needs
  - Reliance on (domestic and international) remittances
  - Corresponds to level of financial development

# Who has access to financial services?





# How much do we know about access?

- Proxy data: branches, ATMs, accounts etc.
- Household surveys for some countries
  - EU
  - Finscope in Southern and East Africa
  - Country-specific surveys
- Enterprise surveys:
  - Almost 100 countries
  - But: limited sample

# Which Households use Banks? Evidence from the Transition Economies

Thorsten Beck & Martin Brown



# Motivation

- Financial services improve household well-being, especially in low-income / emerging economies
  - consumption smoothing Karlán & Zinman 2010
  - household investment Banerjee et al. 2009
- Substantial public funds are invested to improve access to finance
- But: We know little about the determinants of household access to finance
  - weak cross-country data Honohan, JBF 2008

# Contribution of this paper

- We examine the use of financial services by 29'000 households in 28 transition economies and Turkey
- We relate access to household characteristics, the structure of the banking sector and financial infrastructure
  - provide comparison of household-level access to finance for a wide range of countries
  - relate the composition of the banked population to the structure of the banking sector and financial infrastructure

# Related literature

- Household access to finance across countries
  - Africa Honohan & King 2009
- Determinants of aggregate access to finance
  - outreach of banks Beck et al. JFE 2007
  - bank-level barriers to entry Beck et al. WB 2008
- Banking sector structure and financial development
  - bank ownership Gianetti and Ongena, 2009; Beck and Martinez Peria, 2010
  - deposit insurance Cull et al. JMCB 2010
  - payment systems Beck et al. JFE 2007
  - creditor protection Djankov et al. JFE 2007

# Why transition economies?

- Similar starting point in early 90s, coming out of mono-banking; had to build up market-based, two-tiered banking system
- Countries chose different reform paths
  - Speed of reform
  - Ownership transformation

# Some caveats

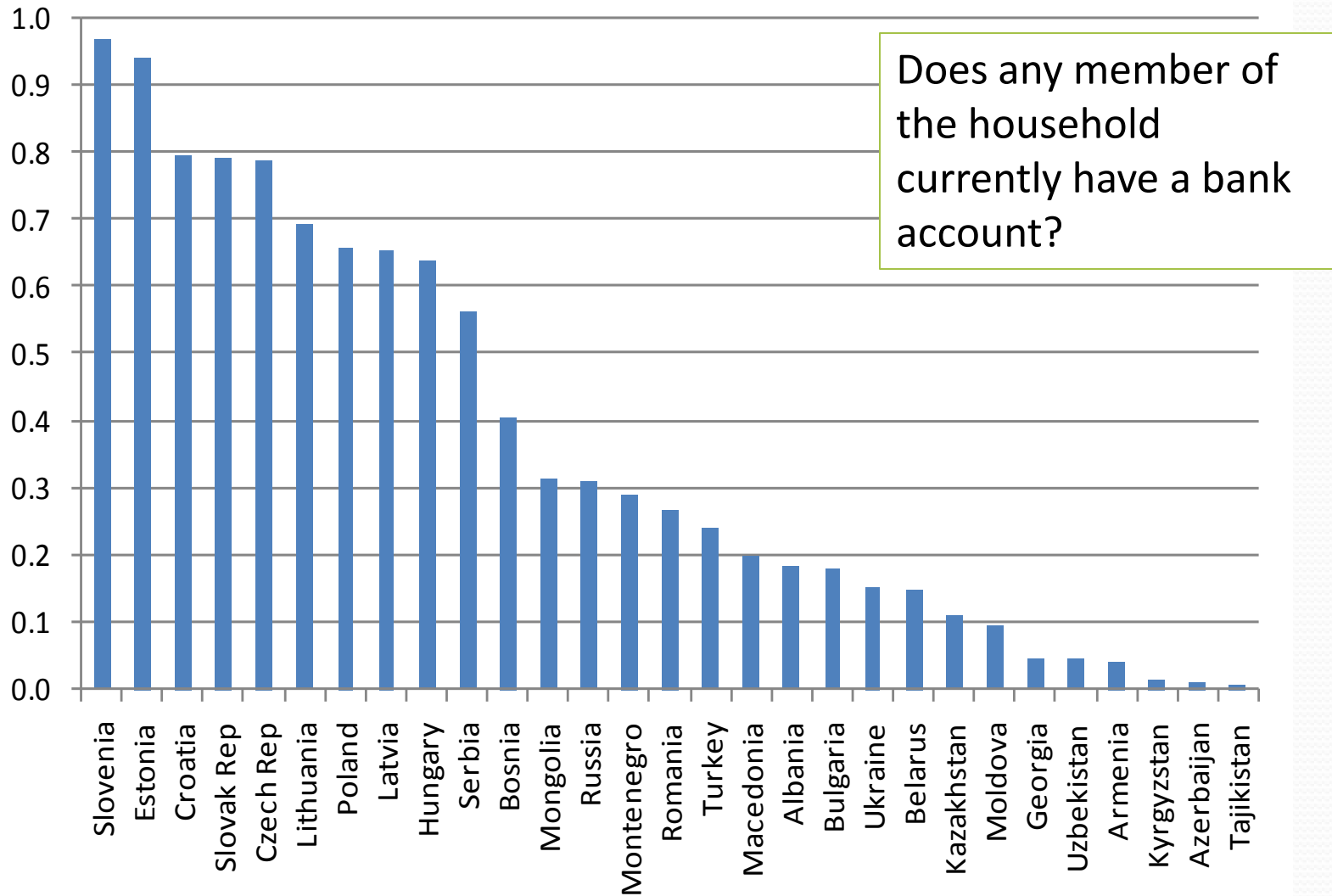
- Cross-sectional data
  - Cannot link country characteristics to level of access, but composition
- Limited information on use of financial services
  - But ample information on other individual and household characteristics

# Data

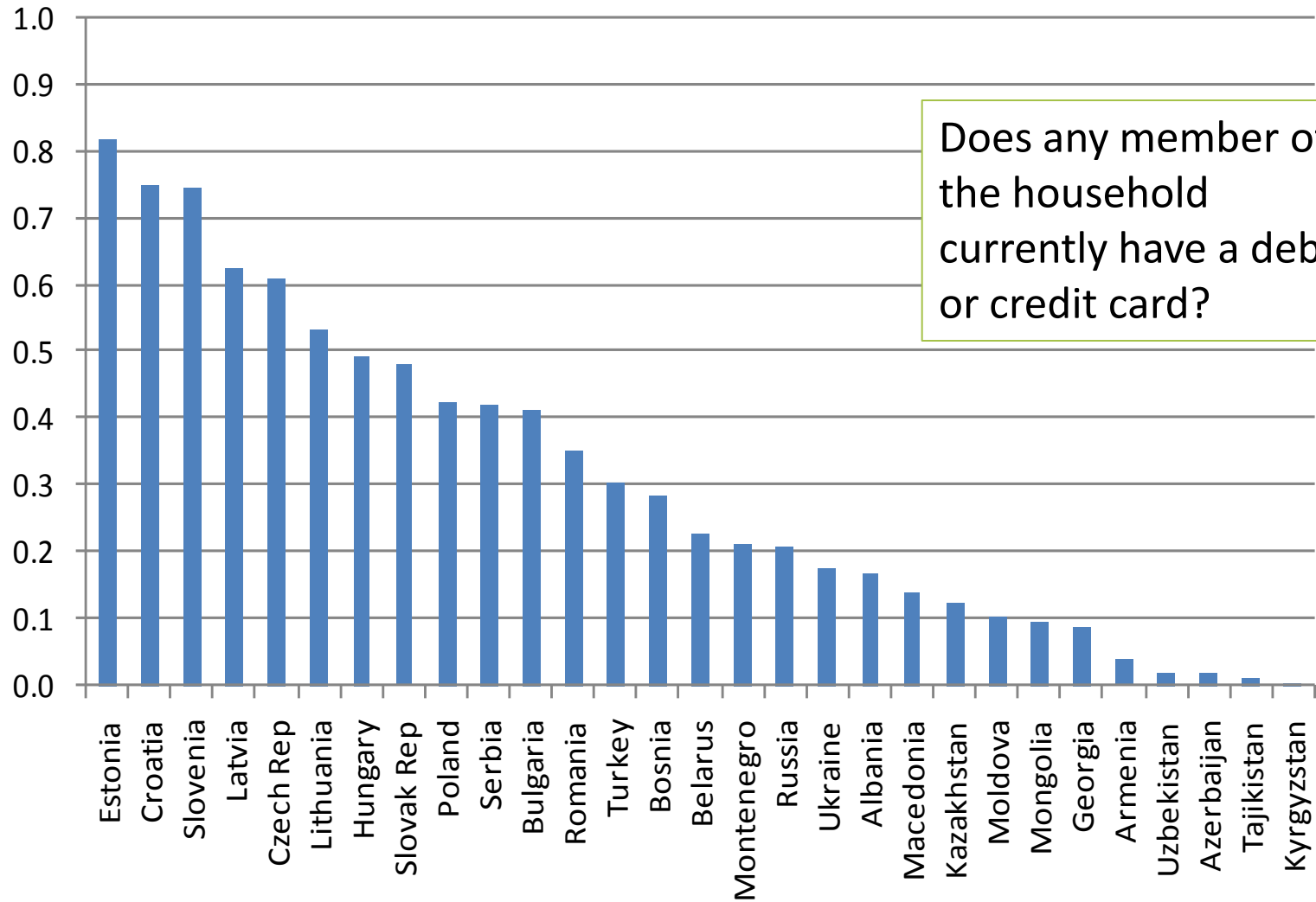
- Life in Transition Survey (LITS)
  - implemented in 2006 by the EBRD
  - 1'000 households in 28 transition economies & Turkey
- Part 1: Interview of household head
  - household composition
  - housing, expenses, use of banking services
- Part 2: Interview of with one adult member
  - education, current economic activity
  - life and work history
  - attitudes and values



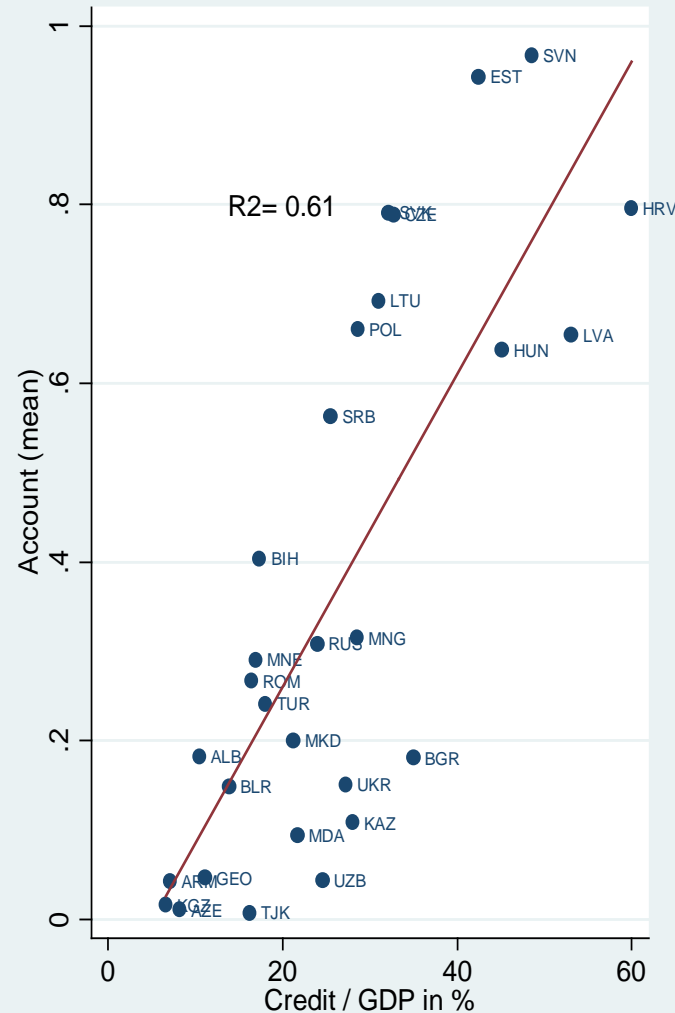
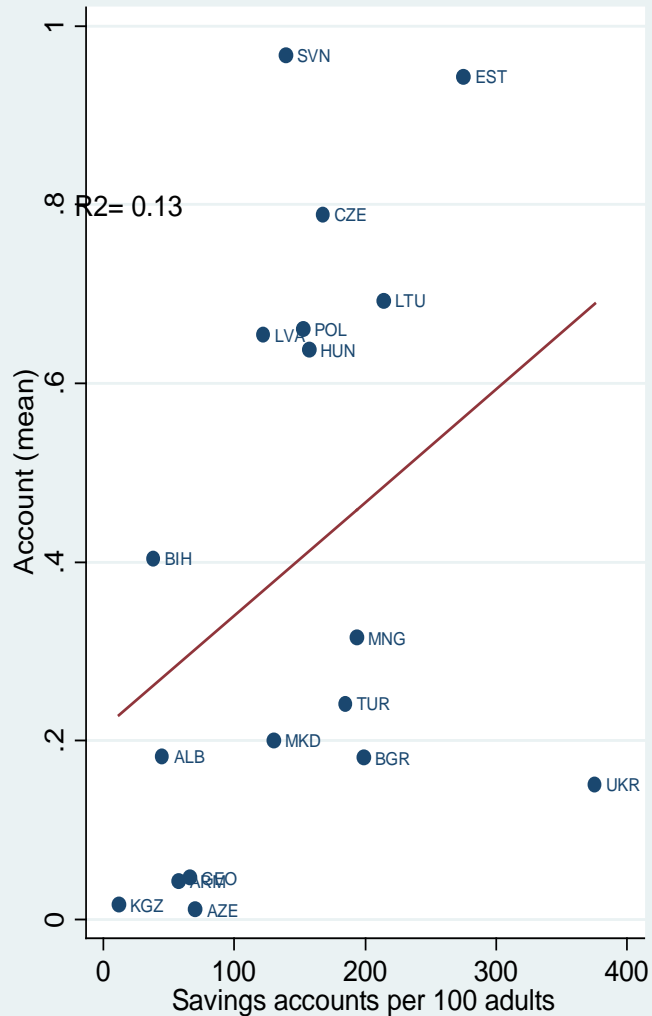
# Dependent variable 1: *Account*



# Dependent variable 2: *Card*



# Micro vs. Macro level indicators of access



# Household-level explanatory variables

- Location
  - Urban (+)
- Income & wealth
  - Expenditures (+), Homeowner (+)
  - Self-employed income (-), Transfer income (-), Capital income (+)
- Economic activity & education
  - Formal employed (+), State employed (+), Worked (+)
  - Professional (+)
- Social integration
  - Minority (-), Muslim (-), Language (+)

# Household-level variables: univariate comparison

	All Households	Household has bank account		
		yes	no	Sample test
Urban	0.60	0.69	0.55	***
Homeowner	0.87	0.83	0.89	***
Expenses (log USD)	7.53	8.15	7.18	***
Self employed income	0.16	0.12	0.18	***
Transfer income	0.34	0.25	0.39	***
Professional	0.51	0.63	0.44	***
Formal employed	0.35	0.50	0.26	***
Minority	0.11	0.09	0.12	***
Muslim	0.22	0.08	0.30	***

# Household-level variables: multivariate analysis

Dependant variable	Account	{# countries where significant}	Card
Urban	0.0542*** [0.0157]	{13}	0.0787*** [0.0144]
Homeowner	0.0251** [0.0124]	{6}	-0.001 [0.0151]
Expenses	0.182*** [0.0113]	{27}	0.154*** [0.00763]
Self employed income	0.035 [0.0219]		-0.0338* [0.0184]
Transfer income	-0.113*** [0.0296]	{17}	-0.148*** [0.0135]
Professional	0.0864*** [0.0126]	{17}	0.0517*** [0.0102]
Formal employed	0.0853*** [0.0181]	{9}	0.0849*** [0.0181]
Minority	-0.021 [0.0161]		-0.0229* [0.0120]
Muslim	-0.0765*** [0.0207]	{5}	-0.0500*** [0.0189]
Method	Probit		Probit
Pseudo R2	0.44		0.38
Country fixed effects	yes		yes
# Households	28,825		28,822
# countries	29		29

Other control variables:  
*Capital income, State  
employed, Worked, Language*

# Muslim and access – demand or supply side story?

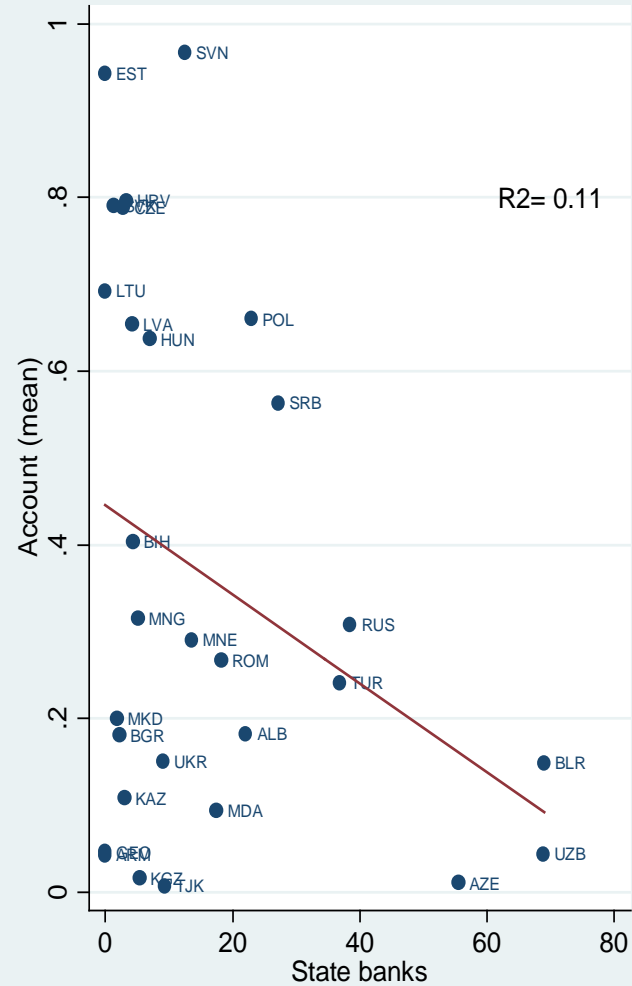
- Demand side explanation: lack of demand due to Qur'an's prohibition of interest
- Supply-side explanation: discrimination
- Consider Bosnia, divided into Serbian (orthodox) and Bosnian-Croatian (partly Muslim) parts
- Univariate comparison: no difference between Muslim and non-Muslim in Federation, but 17%-50% in Serbian part
- Multivariate analysis: Muslim 11% less likely to have a bank account in Federation, 27% less likely in Serbian part
- Both explanations have validity

# Country-level explanatory variables

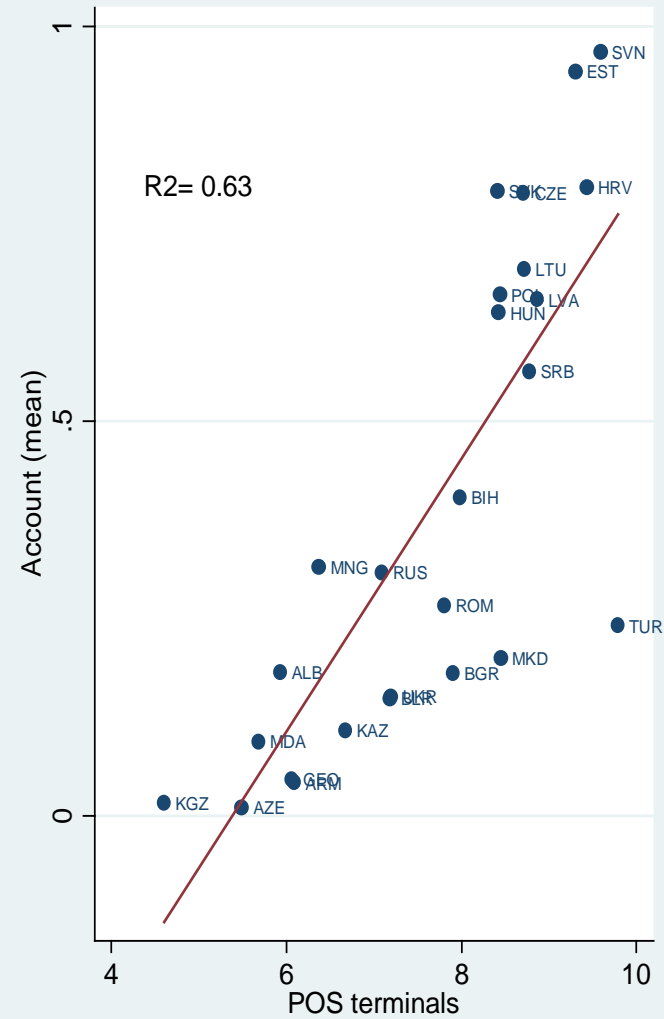
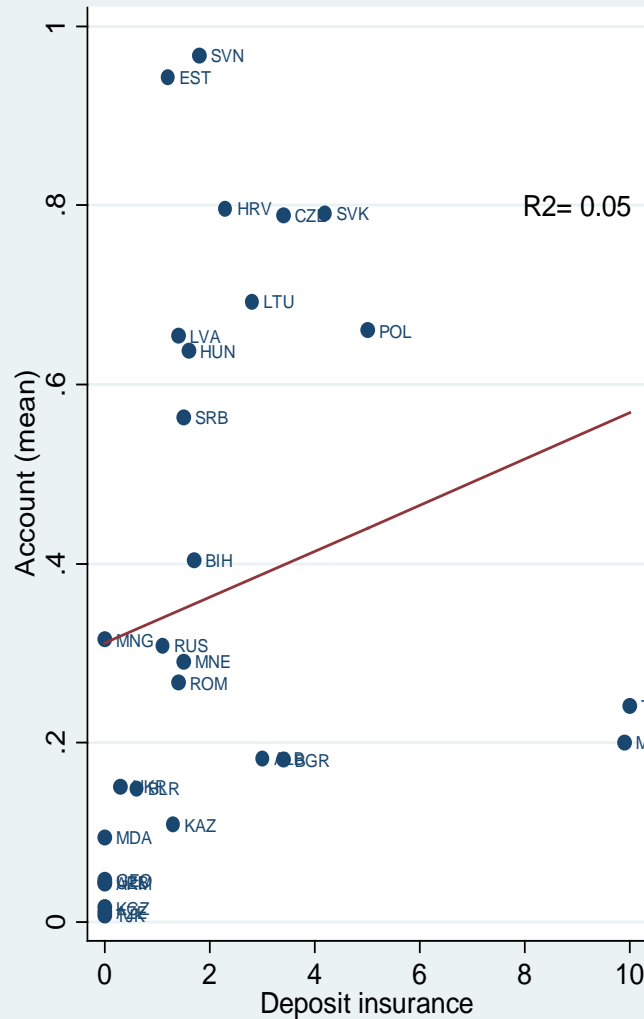
- Bank ownership
  - Foreign banks EBRD
    - Greenfield vs. Take-over
  - State banks EBRD
- Depositor „infrastructure“
  - Deposit insurance coverage al. 2005 Demirgüç-Kunt et
  - Point of sales terminals World Bank
- Creditor protection
  - Credit information sharing Doing Business
  - Creditor rights Doing Business



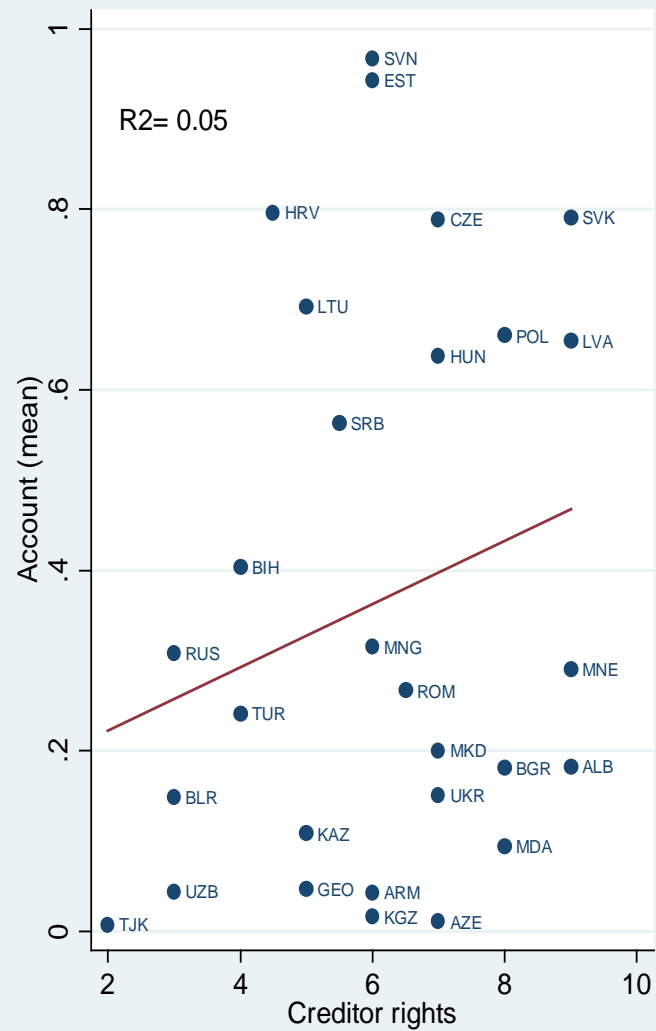
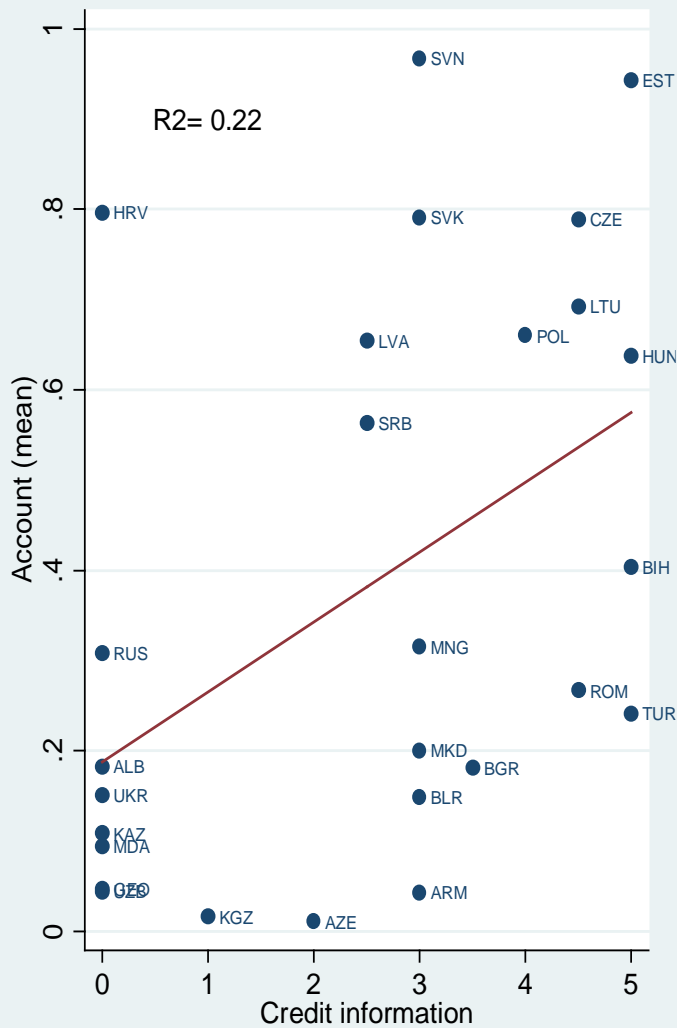
# Bank ownership and use of accounts



# Depositor „infrastructure“ and use of accounts



# Creditor protection and use of accounts



# Compositional effects of banking sector structure ?

- Bank ownership
  - foreign banks cherry pick
  - state banks offer broader access
- Deposit insurance / payment system
  - broader use of banking services
  - may encourage professional / wealthy households
- Creditor protection/credit information sharing
  - reduces transaction costs of supplying financial services
  - attracts households with potential credit demand

# Bank ownership

Model	(1)	(2)
	<i>Foreign banks *</i>	<i>State banks *</i>
Urban	0.000	0.000
	[0.000286]	[0.000444]
Homeowner	0.000476*	0.000
	[0.000247]	[0.000299]
Expenses	0.000710*	-0.001
	[0.000372]	[0.000522]
Self employed income	0.000	0.001
	[0.000356]	[0.000516]
Capital income	0.000	0.003
	[0.00212]	[0.00230]
Transfer income	-0.00203***	0.001
	[0.000570]	[0.000849]
Professional	0.000468*	0.000
	[0.000263]	[0.000325]
Formal employed	0.000	-0.001
	[0.000352]	[0.000560]
Minority	0.000	0.000
	[0.000312]	[0.000593]
Muslim	-0.001	0.000
	[0.000476]	[0.000861]
Method	OLS	OLS
R2	0.48	0.47
Household-level variables	yes	yes
Country fixed effects	yes	yes
# Households	28,825	28,825
# countries	29	29

Only interaction terms displayed.

Regressions include full set of household-level variables and country fixed effects

# Greenfield vs. takeover foreign banks

Model	(3)	(4)
	<i>Foreign greenfield *</i>	<i>Foreign takeover*</i>
Urban	0.001	0.000
	[0.000517]	[0.000317]
Homeowner	0.00157***	0.000
	[0.000414]	[0.000285]
Expenses	0.000	0.001
	[0.000711]	[0.000449]
Self employed income	-0.001	-0.001
	[0.00100]	[0.000503]
Transfer income	-0.00350**	-0.00144*
	[0.00165]	[0.000800]
Professional	0.001	0.000
	[0.000847]	[0.000234]
Formal employed	-0.001	0.000
	[0.000786]	[0.000412]
Minority	-0.001	0.000
	[0.000997]	[0.000451]
Muslim	0.000	0.000
	[0.00123]	[0.000582]
Method	OLS	OLS
R2	0.44	0.44
Household-level variables	yes	yes
Country fixed effects	yes	yes
# Households	19,851	19,851
# countries	20	20

Only interaction terms displayed.

Regressions include full set of household-level variables and country fixed effects

# Depositor „infrastructure“

Model	(1)	(2)
	<i>Deposit insurance *</i>	<i>POS terminals*</i>
Urban	0.0104***	0.007
	[0.00242]	[0.00675]
Homeowner	0.00539*	0.0153***
	[0.00289]	[0.00475]
Expenses	0.0117**	0.0267***
	[0.00435]	[0.00751]
Self employed income	-0.003	-0.008
	[0.00256]	[0.00657]
Transfer income	-0.009	-0.0279**
	[0.00856]	[0.0133]
Professional	0.001	0.006
	[0.00604]	[0.00623]
Formal employed	0.009	0.014
	[0.00610]	[0.0127]
Minority	-0.00460*	-0.0115*
	[0.00248]	[0.00665]
Muslim	-0.002	-0.009
	[0.00553]	[0.0112]
Method	OLS	OLS
R2	0.48	0.47
Household-level variables	yes	yes
Country fixed effects	yes	yes
# Households	28,825	25,848
# countries	29	26

Only interaction terms displayed.

Regressions include full set of household-level variables and country fixed effects

# Creditor protection

Model	(3)	(4)
	<i>Credit info*</i>	<i>Creditor rights*</i>
Urban	0.005	-0.001
	[0.00596]	[0.00482]
Homeowner	0.004	0.00740*
	[0.00559]	[0.00362]
Expenses	0.0169***	0.008
	[0.00510]	[0.00601]
Self employed income	-0.008	0.000
	[0.00667]	[0.00769]
Transfer income	-0.0188*	-0.019
	[0.0110]	[0.0110]
Professional	0.005	0.004
	[0.00610]	[0.00408]
Formal employed	0.007	0.006
	[0.00690]	[0.00738]
Minority	-0.008	0.0106**
	[0.00501]	[0.00491]
Muslim	-0.011	-0.003
	[0.00890]	[0.00562]
Method	OLS	OLS
R2	0.48	0.47
Household-level variabl	yes	yes
Country fixed effects	yes	yes
# Households	26,848	28,825
# countries	27	29

Only interaction terms displayed.

Regressions include full set of household-level variables and country fixed effects



# Summary and conclusions

- The use of bank-accounts is strongly related to income, economic activity, education  
.... but also to social integration
  - Foreign banks cherry pick among high-income, well-educated and formally employed households
  - State banks, deposit insurance, payment system and creditor protection do not foster broader use of banking services
- structural policy does not seem to lead to more inclusive banking systems

# Access to finance – what next?

- Data, data, data
  - Household data on use of different services and products
  - Enterprise data – panel dimensions
  - Bank-level data – barriers and product strategies
- Assess the importance of different services
- Assess the importance of different policies and innovations