Banking Competition in Latin America

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Trend in the Banking Industry In Latin America

- The number of Banks has been falling in Latin America, increasing concentration.
- As in many Developing economies, Foreign Bank Participation has increased in Latin America.

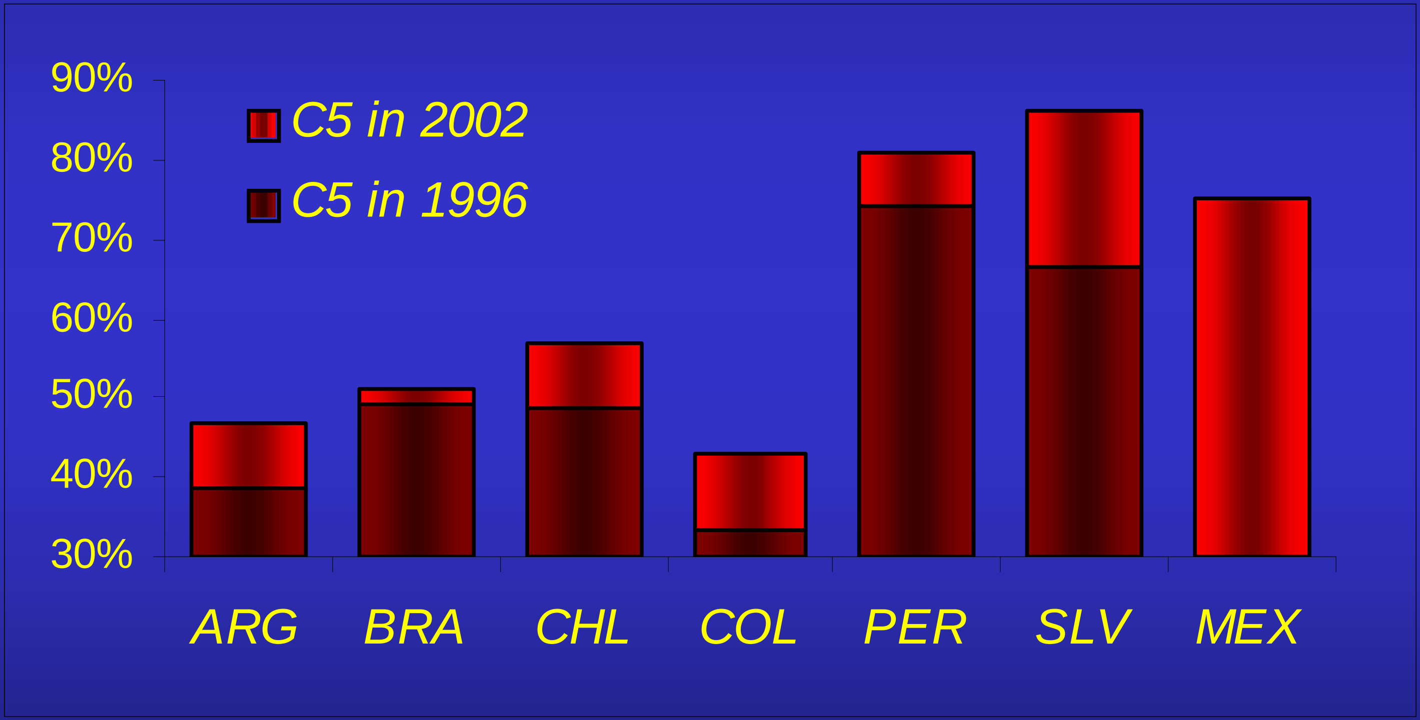
Decrease in number of Banks

year	**1996**	**2002**	**Change**	**% Change**
Argentina	118	80	-38	**-32%**
Brazil	253	180	-73	**-29%**
Chile	33	26	-7	**-21%**
Colombia	39	28	-11	**-28%**
Costa Rica	30	21	-9	**-30%**
Peru	23	15	-8	**-35%**
El Salvador	18	13	-5	**-28%**
Mexico*	41	32	-9	-22%

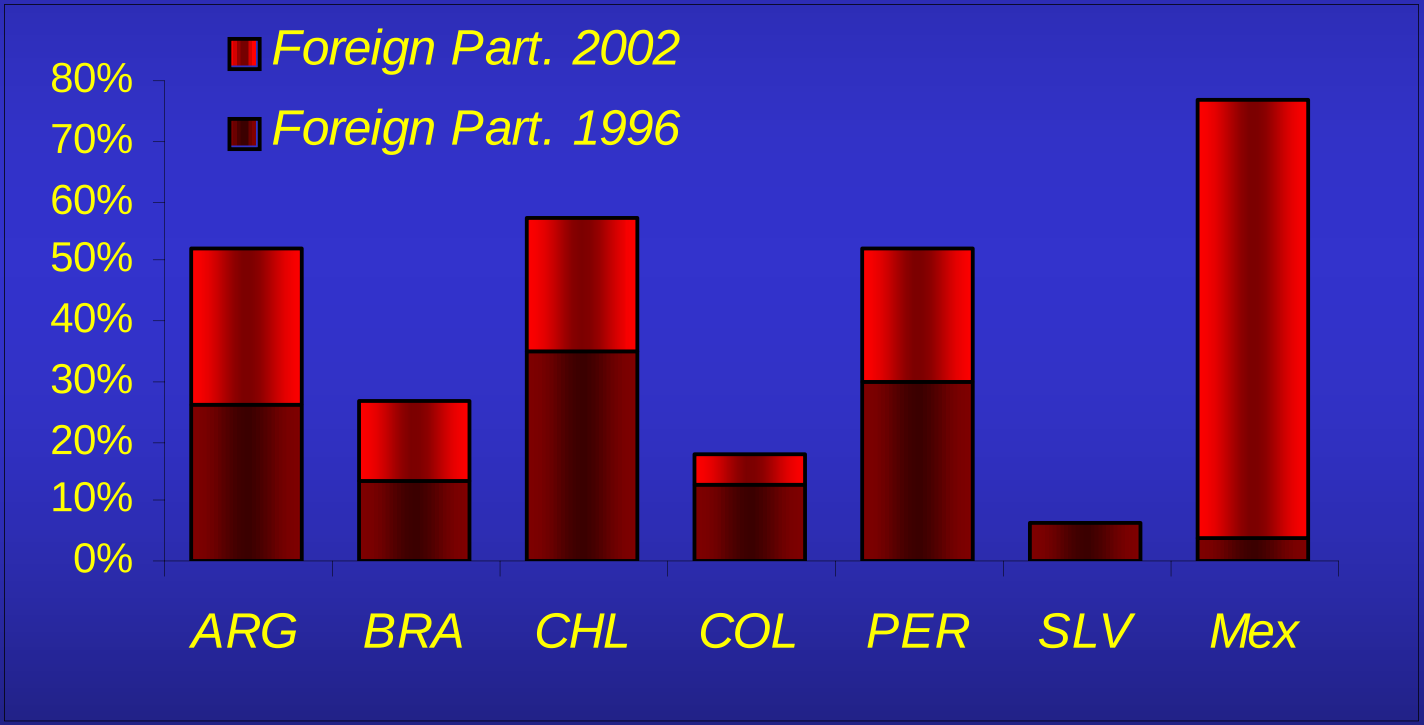
Source: Superintendencia de Bancos

* in 1994 there were 23 banks.

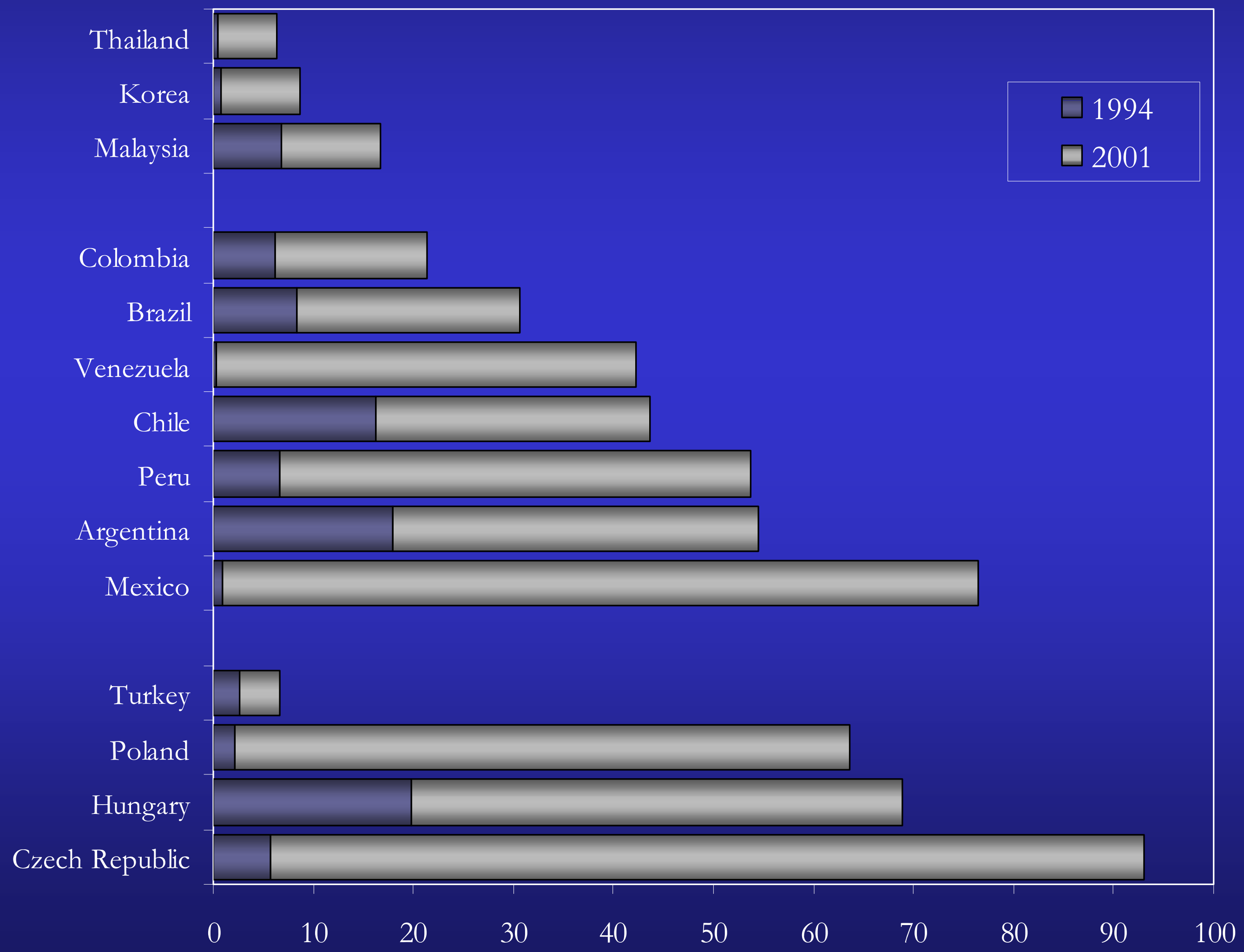
Increase in Bank Concentration



Foreign Bank Participation



Foreign Participation In LDC



How did this Process take Place?

- Financial Liberalization (Mexico).
- Tequila (94-95), Russian (98) and Brazilian (98-99) crises have forced authorities to merge and close banks with problems (recapitalization).
  - Argentina 1995: 32 banks closed & 37 merges.
  - Colombia 98-99: 4 banks closed & 3 merges.
- Global trend on Banking Consolidation and Cross Banking Activities.
  - Chile 4 merges.
  - Foreign banks typically buy locals. (Argentina 16, Chile 5, Colombia 3 and Mexico 3).

Issues Behind M&A and Bank Consolidation (1)

- Efficiency.
  - Increasing Return to Scale.
    - Overlapped Markets: Overhead Costs, IT
      - No evidence of large Economies of Scale
        - » EU, USA
        - » Chile. Budnevich et al. (2001)
  - Heterogeneity.

Issues Behind M&A and Bank Consolidation (2)

- Competition Level
  - X inefficiency.
  - Definition of the relevant Market.
    - Overlapped Region or not.
    - Type of Loans:
      - Sectors: Agriculture, Manufacturing, etc.
      - SME v/s Large Firms (access to external resources).
    - Other Financial actors insurance companies and the Stock Market?
    - The role of new products tele-banking and ATM.
  - **Asymmetric Information and Competition**
    - Informality and Opaque Firms.

Issues Behind M&A and Bank Consolidation (3)

- **Competition and Financial Stability**
  - **Bank Charter Value**
    - Reduce agency problem of limited liability banks.
  - **To Big to Fail.**
    - Increase moral hazard problems. Large Banks Take more risk because they know they will be rescue by the government.
  - Large Capitalization and “perceived” liquidity of foreign Banks.

Implications for Regulation

- Bank Superintendence or Central Bank:
  - Focus on banking stability.
- Competition Authorities:
  - Focus on competition issues (Efficiency and Monopoly practices).

- During Financial Turmoil (frequents events in Latin America) The former predominates.

Competition Measure

- Panzar and Rosse's (1987) methodology:

$$H \equiv \sum_j \frac{\partial R_i}{\partial FIP_{j,i}} \frac{\partial FIP_{j,i}}{\partial R_i}$$

- Monopoly: $H \leq 0$.
- Monopolistic competition: $0 < H \leq 1$.
- Perfect competition: $H = 1$.
- Constant elasticity $e > 1$ and a Cobb-Douglas CRS technology ➔ $H = e - 1$ ➔ H as a measure of the degree of competition.

Competition Measure

- We want *H* to change over time
  - *H* depends on industry-specific characteristics ➔ Cross-country comparisons may be misleading
  - Correlation between consolidation and foreign penetration *trends* and the evolution of competition ➔ Emphasis on the dynamic dimension

Competition Measure

$$H_y = \beta_y + \gamma_y + \delta_y$$

$$\ln FINR_{it} = \alpha_i + \sum_y \left(\beta_y \ln AFR_{it} + \gamma_y \ln PPE_{it} + \delta_y \ln PCE_{it} \right)$$

$$+ \eta \ln OI_{it} + \sum_j \xi_j \ln BSF_{jit} + \sum_j \lambda_j X_{jt} + \nu_{it}$$

- β_y , γ_y, δ_y, are set to 0 if quarter t does not belongs to year *y*
- FINR = total financial revenue over total assets
- AFR = annual interest expenses over total funds
- PPE = personnel expenses over total balance sheet
- PCE = physical capex and other expenses over fixed assets
- BSF = Bank fundamentals: Risk (equity, loans and liquidity over total assets); funding mix (demand deposits to total); size (total assets).
- OI = ratio of Other Income to the Total Balance Sheet

X = macroeconomic factors (reference interest rate, inflation rate)

Estimates of time-invariant H

Table 2
Estimates of timeinvariant H

		Methodology	Coefficient	Chile	Argentina	Brazil	Colombia	Costa Rica	Peru	El Salvador
All banks	(1)	OLS[1]	H	0.959*	0.546*a	0.911*a	0.753*a	0.806*a	0.76*a	0.390*a
		FE	H	0,829*a	0,459*a	0,862*a	0,684*a	0,676*a	0,60*a	0,416*a
Private banks	(2)	FE	H	0,832*a	0,488*a	0,886*a	0,695*a	0,734*a	0,60*a	0,390*a
	(3)	FE	H	0,807*a	0,478*a	0,846*a	0,705*a	0,765*a	0,58*a	0,283*a
			H_L	0,010	0,033*	0,065*	0,016	-0,108*	-0,010	0,109*
			H_F	0,067*	0,010	0,064*	-0,019	-0,096	-0,009	0,643*
		P-value	$H_L = H_F$	0,114	0,090	0,977	0,491	0,863	0,903	0,001
Period				1994-2002	1995-2000	1994-2002	1994-2002	1995-2002	1993-2002	1997-2002

Notes:
[1] Excludes inflation rate and reference interest rate.
* significantly different from zero at 5%; a: significantly d ifferent from 1 at 5%.
H_L and H_L are large and foreign bank dummies, and measure the deviation from small private domestic banks in the system.
All tests based on robust standard errors.

Estimates of time-varying H – Private banks

(baseline specification)

	Argentina	Brazil	Chile	Colombia	Costa Rica	El Salvador
1993						
1994		0,775	0,805	0,621		
1995	0,395	0,788	0,870	0,547	0,750	
1996	0,442	0,803	0,848	0,518	0,757	
1997	0,458	0,834	0,851	0,507	0,730	0,326
1998	0,456	0,851	0,758	0,562	0,723	0,326
1999	0,448	0,860	0,834	0,509	0,743	0,304
2000	0,451	0,849	0,800	0,522	0,727	0,319
2001		0,844	0,803	0,494	0,729	0,404
2002		0,869	0,837	0,490	0,723	0,390
Average	0.442	0.830	0.823	0.530	0.735	0.345
Period	1994-2002	1995-2000	1994-2002	1994-2002	1995-2002	1997-2002

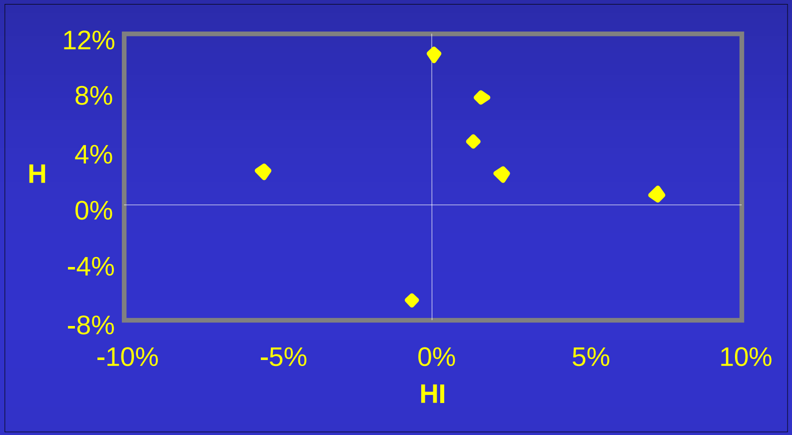
In all cases, H = 0 (monopoly), and H = 1 (perfect competition) are rejected at the 5% significance level, based on robust standard errors.

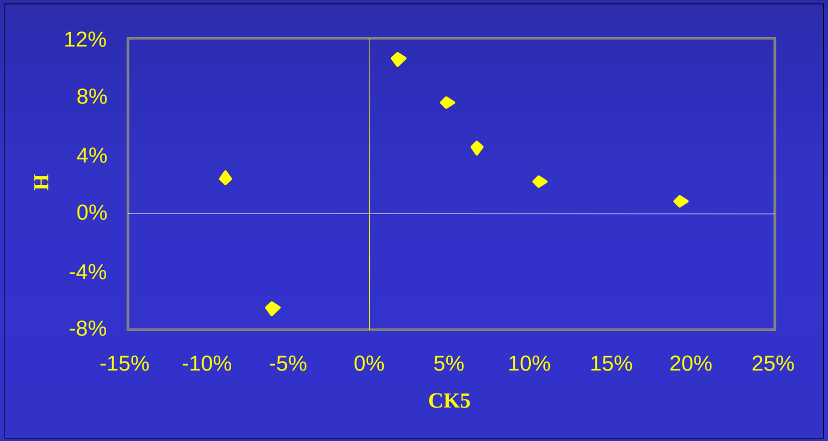
Concentration, Foreign Penetration and Competition

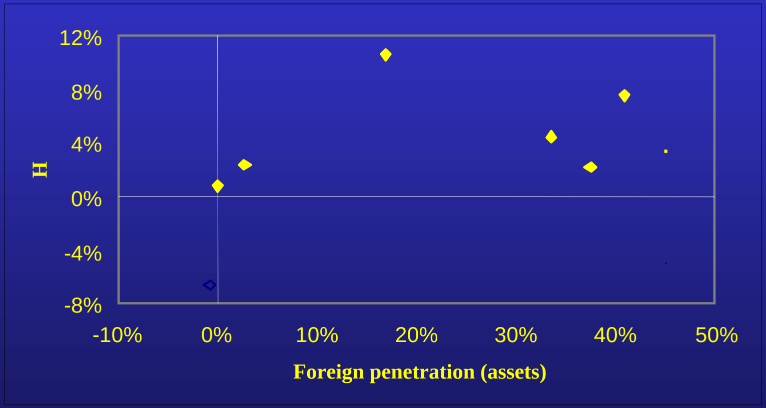
	H	H (private)	H	H (private)	H	H (private)	H	H (private)
Ln num. of banks	-0.156	-0.163						
	(2.24)**	(2.26)**						
Foreign Penetration	0.075	0.160	0.060	0.137	0.047	0.126	0.070	0.154
	(0.98)	(1.95)*	(0.77)	(1.66)	(0.69)	(1.73)*	(0.99)	(2.02)*
HHI (Assets)			0.531	0.706				
			(2.05)**	(2.85)***				
CK5 (Assets)					0.230	0.275		
					(2.04)**	(2.36)**		
CK3 (Assets)							0.236	0.280
							(2.30)**	(2.64)**
Observations	57	57	57	57	57	57	57	57
R-squared	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98

~ significant at 15%;* significant at 10%; ** significant at 5%.
Robust t-statistics in parentheses.

Concentration, Foreign Penetration and Competition Indicators
(changes over the period of analysis; in percent)

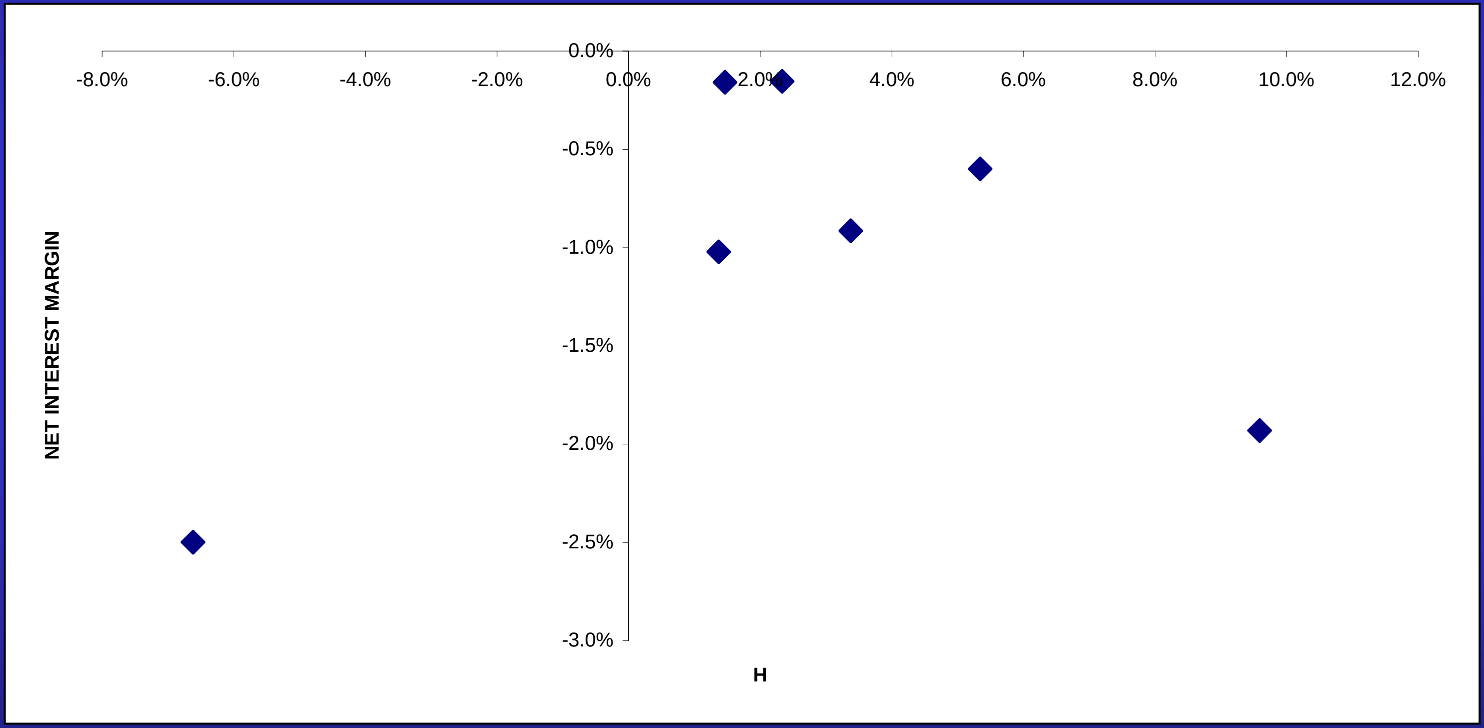






Competition and Bank Margins

(changes over the period of analysis)



Main results

- Consolidation and foreign penetration, if anything, led to *more* competition.

What is behind these results?

- Overpopulation of banks before consolidation → concentration levels suboptimally low
- Product homogeneization (ATMs, PC banking, universal banks) eliminates non-competitive rents.

Both effects may still be at play → More consolidation to come

Policy Discussion

Financial bias

- M&A and foreign entry triggered by financial concerns: What role did competition concerns play in the analysis of M&A?
- Is there a regulatory body and institutions that may cope with the problem should these concerns arise in the future?
- What weight, if any, is the competition authority given in the final decision?

Policy Discussion

Open questions

- How do consolidation & internationalization affect the distribution of credit
  - Disaggregation of loans and interest rate data according to variables such as sector, size, borrower's location and risk class.
- Are some markets more collusion-prone than others?
  - Credit cards
  - Access to ATM networks
  - Location as a natural barrier: small towns and public banks

Policy Discussion

Open questions

- What is the relevant market?
  - Cross-elasticities → Lack of reliable data → Focus on regional (local) markets
  - Legal standards → Trade-off between flexibility and legal contestability
  - Do we need a common benchmark?

- Coordination of policy actions
  - Balance between financial stability and pro-competition considerations
  - The Bank Law should spell out the precise form of coordination between the supervisory and competition agencies.