Finance-Growth Nexus: What Role for Bank Regulation?

Iftekhar Hasan

Rensselaer Polytechnic Institute

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Finance and growth literature

- The finance-growth nexus has been extensively studied in the recent years (e.g. Levine, 1999, 2005).

- Key mechanisms through which financial development contributes to economic growth include
  - Facilitate trade and transactions
  - Mobilize resources and allocate savings
  - Produce information to evaluate investment opportunities
  - Monitor managers and provide corporate governance
  - Hedge, trade, and diversify risk

- A general conclusion from this literature is that finance does exerts a strong positive effect on economic growth.

What role for bank regulation

- Some scholars stress the importance of bank regulation and supervisory practice on the operation of banks (e.g. Barth et al., 2004, 2008).

- Other work examines how political and institutional determinants of financial development play a role in economic growth (e.g. La Porta at al., 1998, 1999; Djankov et al., 2007).

- Yet, researchers have not thoroughly examined the impact of policy initiatives in bank regulation on the finance-growth nexus.

- In particular, which regulations are mostly likely to promote growth-enhancing financial systems and result in net gains in economic development?

Bank Regulations and Income Inequality: Empirical Evidence

Manthos D. Delis
Department of Economics
University of Ioannina

Iftekhar Hasan
Rensselaer Polytechnic Institute
and Bank of Finland

Pantelis Kazakis
Department of Economics
University of Ioannina

Rensselaer

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Purpose and main findings

- This paper examines empirically the impact of bank regulatory policies on the income distribution

- We show that:
  1. Market discipline (private monitoring) and activity restrictions have an unambiguously positive and significant effect on income inequality and poverty

  2. More stringent bank capital regulation and enhanced official supervisory power tend to reduce income inequality

  3. These effects are asymmetric based on the level of economic and institutional development

Motivation and literature

- Demirgüç-Kunt and Levine (2009) offer a thorough review of the literature on finance and inequality, and the main argument is that improvements in financial markets, contracts, and intermediaries tend to reduce income inequality

- Yet, they also emphasize that researchers have not thoroughly examined the impact of policy initiatives, such as bank regulations and securities law, on income inequality

- Beck et al. (2007) also suggest that financial imperfections, such as information and transaction costs, may be especially binding on the poor who lack collateral and credit history

- Galor and Moav (2004) suggest that failing to liberalize the banking sector probably leads to local monopolies, a situation that most likely hurts the poor

Motivation and literature

- Beck et al. (2010) is the study closer to our goals and assesses the impact of U.S. bank deregulation of the 1970s to the 1990s on the distribution of income

- They show that deregulation significantly reduces inequality by boosting incomes in the lower part of the income distribution, but has little impact on incomes above the median

- Barth et al. (2008) update their 2001 database on bank regulations and show that differences in bank regulations among countries and over time are notable

- Given all of this, a study that assesses the impact of cross-country and timely variations in bank regulations on income inequality is worthwhile and feasible.

Data

- Country-level data (5-year averages): 116 countries over the period 1998–2007

- The dependent variables are the Gini coefficient and the income share of people in the lower 10% or 20% of the income distribution (obtained from the World Income Inequality Database)

- Information on bank regulations is obtained from Barth et al. (2001, 2006, 2008).

- We use four regulatory indices pertaining to capital stringency, supervisory power, market discipline (private monitoring) and activity restrictions.

Identification strategy

- The empirical strategy rests on the assumption that the distribution of income does not affect cross-country regulatory conditions

- Theoretically, this assumption seems valid because regulators in the banking industry are generally concerned with promoting financial stability, making it unreasonable to assume that the distribution of income affects their decisions

- However, both bank regulations and income inequality may be endogenous to other country-specific characteristics, such as the macroeconomic and/or the institutional environment

- Therefore, we start with feasible generalized least squares and we explore the prospect of endogeneity using IV and GMM

Baseline results

Table 3
Bank Regulations and Income Inequality: Gini Coefficient Regressions

	(1)	(2)	(3)	(4)	(5)
Initial Gini	0.813***	0.811***	0.786***	0.800***	0.756***
	(54.97)	(55.39)	(65.59)	(47.71)	(39.95)
Capital requirements	-0.133***	-0.142***	-0.126*	-0.167***	-0.139
	(-2.73)	(-2.81)	(-1.69)	(-3.38)	(-1.23)
Supervisory power	-0.127***	-0.177***	-0.189***	-0.190***	-0.133***
	(-2.70)	(-3.30)	(-3.31)	(-3.41)	(-5.47)
Market discipline	0.268***	0.234**	0.548***	0.231**	0.215**
	(2.78)	(2.35)	(5.58)	(2.57)	(2.28)
Activity restrictions	0.901***	0.977***	0.839***	0.969***	0.838***
	(5.49)	(5.35)	(3.79)	(5.38)	(8.25)
Log of population	0.267***	0.215***	0.156*	0.256***	0.390***
	(3.77)	(3.08)	(1.75)	(3.67)	(3.41)
GDP per capita	-0.000***	-0.000***	0.000	-0.000***	-0.000***
	(-5.12)	(-4.78)	(0.17)	(-4.91)	(-2.99)
Inflation	0.033**	0.028*	0.009	0.020	0.031*
	(2.04)	(1.81)	(0.38)	(1.29)	(1.82)
Time effect	-0.241	-0.088	-0.222	-0.025	-0.129
	(-1.24)	(-0.40)	(-1.15)	(-0.12)	(-1.60)
Trade openness		-0.005**	-0.002	-0.005**	-0.003**
		(-2.32)	(-0.74)	(-2.22)	(-2.25)
Government expenditure		-0.021	-0.024	-0.020	-0.012
		(-1.44)	(-1.45)	(-1.33)	(-0.52)
Bureaucratic quality			-0.966***		
			(-4.44)		
Law & order			-0.471***		
			(-3.87)		
Bank liquidity				0.186	-0.317
				(0.63)	(-0.64)
Mobility of funds				1.041***	1.628***
				(2.61)	(11.29)
Constant term	2.186	4.435**	8.507***	4.371**	3.747***
	(1.32)	(2.26)	(3.24)	(2.53)	(4.97)

Baseline results

- Results show that capital stringency and supervisory power lower inequality

- These findings can be explained by the fact that these types of regulation aim at enhancing stability of the banking system and efficient supervision and are negatively correlated with the probability of banking crises, which primarily hurt the poor and widen the distribution of income

- In contrast, market discipline and activity restrictions seem to exacerbate inequality

- Intense private monitoring, especially policies involving disclosure of risk-management procedures to the public and income statement accruals for nonperforming loans, increases the pressure on banks to show good short-term results and probably leads them to avoid lending to individuals with less collateral (who are more risky)

- Also, higher restrictions tend to produce bounded and less competitive markets, which tend to reduce the quality of screening and monitoring of projects

Distributional effects due to economic development

- A series of important contributions (see Estache and Wren-Lewis, 2009, and references therein) view economic and institutional development as a prerequisite for regulations to have a real effect on the economy

- To account for this complementarity in the effect of regulations and level of development, we include among the regressors the product of our regulatory variables with our proxy for economic development (i.e., the *GDP per Capita* variable)

- We use mean-centering of the variables to avoid multicollinearity between the levels and the product terms

Distributional effects due to economic development

Table 6
Bank Regulations and Income Inequality: Distributional Effects Due to Economic Development

	(1)	(2)	(3)	(4)	(5)	(6)
Initial Gini	0.804***	0.770***	0.797***	0.802***	0.774***	0.748***
	(48.47)	(57.15)	(45.69)	(44.29)	(53.45)	(40.60)
Capital requirements	-0.243***	-0.0949**	-0.179***	-0.163***	-0.122**	-0.176
	(-3.76)	(-2.22)	(-3.59)	(-3.26)	(-2.08)	(-1.35)
Supervisory power	-0.151***	-0.302***	-0.202***	-0.187***	-0.289***	-0.214***
	(-2.73)	(-5.83)	(-3.57)	(-3.28)	(-5.45)	(-16.89)
Market discipline	0.296***	0.219***	0.341***	0.231**	0.214**	0.176**
	(2.64)	(2.74)	(2.83)	(2.52)	(2.52)	(2.07)
Activity restrictions	0.933***	1.025***	1.106***	0.937***	0.991***	0.776***
	(4.45)	(7.19)	(5.80)	(4.70)	(5.65)	(13.46)
Log of population	0.265***	0.479***	0.284***	0.253***	0.491***	0.469***
	(3.30)	(7.89)	(3.41)	(3.54)	(6.26)	(3.58)
GDP per capita	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(-4.17)	(-8.18)	(-4.43)	(-4.32)	(-6.55)	(-3.32)
Inflation	0.030*	0.011	0.020	0.020	0.012	0.028
	(1.87)	(0.90)	(1.23)	(1.34)	(0.87)	(1.48)
Trade openness	-0.007**	-0.007***	-0.004	-0.006**	-0.007**	-0.004***
	(-2.42)	(-3.42)	(-1.14)	(-2.23)	(-2.48)	(-15.45)
Government expenditure	-0.002	-0.029***	-0.015	-0.019	-0.028**	-0.019
	(-0.16)	(-2.59)	(-1.06)	(-1.26)	(-2.27)	(-0.72)
Bank liquidity	0.024	0.920***	0.135	0.220	0.882***	0.413
	(0.09)	(3.22)	(0.42)	(0.70)	(2.66)	(0.69)
Mobility of funds	1.093***	1.400***	0.961**	1.053***	1.488***	1.645***
	(2.62)	(4.05)	(2.34)	(2.61)	(4.08)	(16.12)
Time effect	-0.027	0.065	-0.139	-0.029	0.258	0.120***
	(-0.12)	(0.36)	(-0.62)	(-0.13)	(1.32)	(3.75)
GDP per capita * Capital requirements	0.000*				0.000**	0.000*
	(1.80)				(2.32)	(1.84)
GDP per capita * Supervisory power		0.000***			0.000***	0.000***
		(7.67)			(7.02)	(13.28)
GDP per capita * Market discipline			0.000		0.000	0.000
			(0.51)		(1.37)	(1.41)
GDP per capita * Activity restrictions				0.000	-0.000	-0.000
				(0.37)	(-0.38)	(-0.28)
Constant term	4.087***	1.675	3.987***	4.407***	1.231	2.505*
	(2.87)	(1.47)	(2.58)	(3.55)	(0.82)	(1.81)

Distributional effects due to economic development

- The results show that the negative impact of capital requirements and supervisory power on inequality weakens substantially for those countries with low *GDP per Capita*

- In contrast, the interaction effects of *GDP per Capita* with *Market discipline* and *Activity restrictions* are statistically insignificant, suggesting that higher market discipline and activity restrictions increase inequality, irrespective of the level of development

- Overall, this analysis highlights that a clear trade-off exists between stricter banking regulation and long-term income equality

- Although a consensus seems to exist that stricter regulatory policies can promote more stable banking systems, these policies still can disproportionately hurt the poor

Concluding remarks

- Bank regulations and associated reforms aim at enhancing the creditworthiness of banks and at improving the stability of the financial sector

- Yet, what if bank regulations have other real effects on the economy besides those associated with banking stability? And, more important, what if these real effects counteract the intended stabilizing effects?

- Three clear suggestions emerge from this paper:
  - The liberalization of banking markets, primarily through abolition of activity restrictions, helps the poor get easier access to credit

  - Appropriate regulation should provide less costly incentives to banks and firms to increase market discipline without hurting the relatively poor

  - Economies first need strong and independent institutions to see any positive effect of capital regulation and supervisory power on equality

Motivation

- Financial liberalization and international banking activities have made the global banking market far more interconnected and networked. Market participants have also become more heterogeneous.

- The finance-growth literature has mainly focused on the depth of the banking sector as the indicator of financial development, e.g. the supply of bank credit to GDP.

- Largely absent in the recent literature is an examination of the real economic effects of the interconnectedness and heterogeneity of the banking market.

An example: Ownership networks of banks in Eastern Europe

- This graph shows the interconnectedness of the bank markets in EE.
- Red nodes represent banks; black lines represent their ownership connections; and blue circle shows the dominant banks in the market.
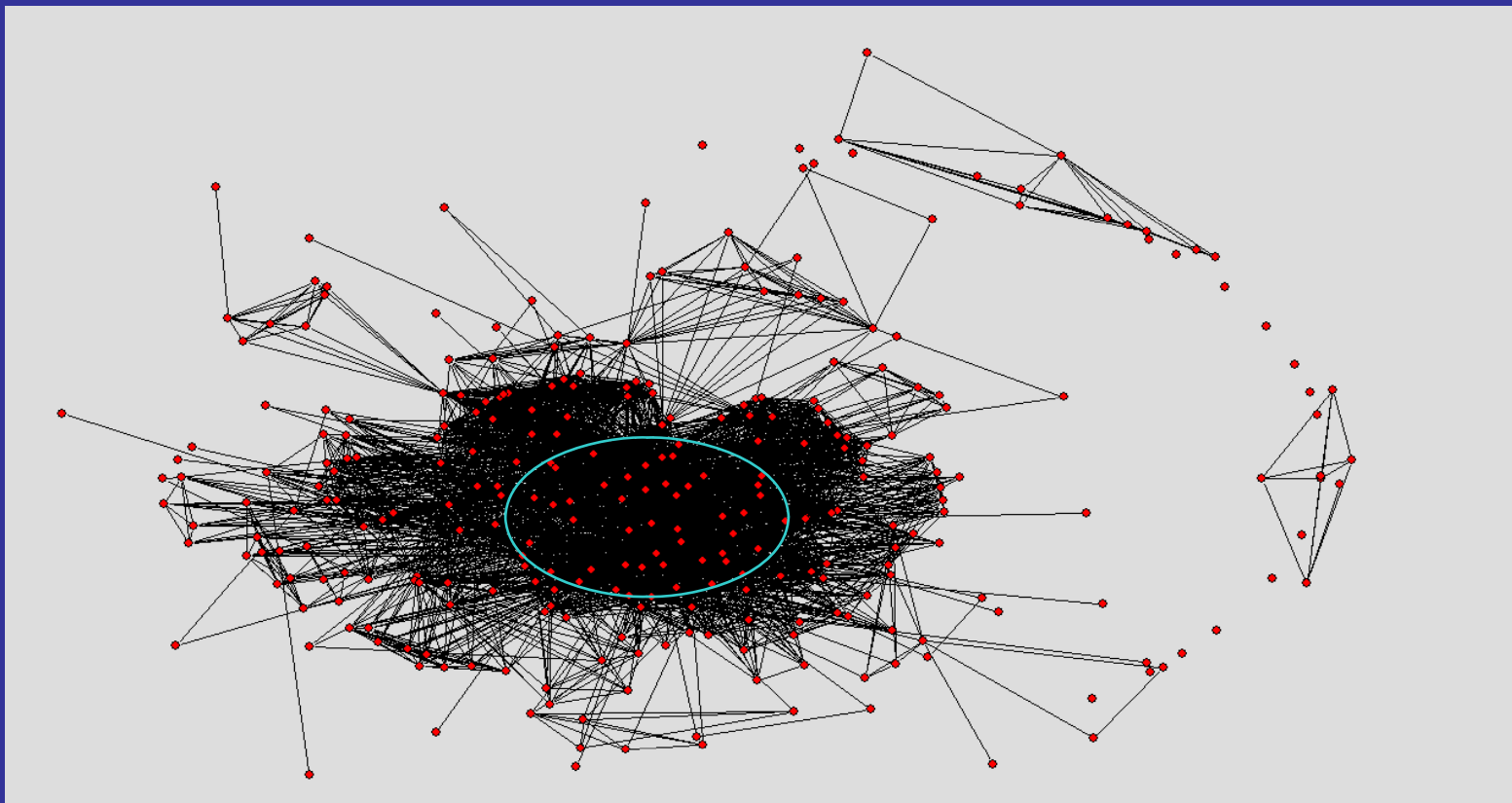
Foreign banks are dominant players

- 10 biggest owners are all foreign firms

OWNER NAME	HOME COUNTRY	# of BANKS in HOLDING
RAIFFEISEN	AUSTRIA	39
UNICREDIT	ITALY	33
DANSKE BANK A/S	DENMARK	24
JULIUS BAER HOLDING LTD	SWITZERLAND	23
ALLIANZ SE	GERMANY	20
INTESA	ITALY	20
EAST CAPITAL ASSET MANAGEMENT AB	RUSSIA	19
BNP PARIBAS	FRANCE	17
KBC	BELGIUM	17
ING GROEP NV	NETHERLAND	16

Source: BankScope, 2007

Benefits of global banks

- Foreign banks introduce better supervision and regulation, bringing special expertise and advanced technology, and therefore boost domestic banking efficiency and promote economic growth (e.g. Demirgut-Kunt, et al., 1998)

- In the long run, financial liberalization improves institutions and stabilizes financial markets (Kaminsky and Schmukler, 2008)

- In the long run, globalization of trade and capital inflows that may reduce countries' armed conflicts (Elbadawi and Hegre, 2008).

Costs of global banks

- Some critics of foreign bank entry claim that foreign banks tend to pick narrow market niches, e.g. lending only to large domestic firms and foreign corporations, which may hurt the creation and growth of local enterprise (e.g. Berger et al., 2005; Bonin and Wachtel, 2003; Detragiache et al. , 2008)

- Policymakers are also concerned that foreign banks may only facilitate capital outflows and few developing countries are able to access capital inflows.

Risk implications of financial networks

- Financial networks provide good risk-sharing mechanisms (Allen and Gale, 2000; Leitner, 2005). However, high connectedness may also facilitate risk spread by contagion (Gai and Kapadia, 2008).

- The financial crisis of 2007 has also made evident that financial networks could be a double-edged sword.

- On one hand, the high reliance on international capital flows in transition economies help supply domestic credit (Brezigar-Masten, et al., 2010)

- On the other hand, global banks also plays a significant role in the transmission of the current crisis to emerging-market economies (Cetorelli and Goldberg, 2009).