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Do State-Owned Banks Promote Growth? Cross-Country Evidence for Manufacturing Industries

by

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Abstract[1]

This paper tests the efficiency of different structures of bank ownership in terms of its ability to target manufacturing sectors in need of credit. We find that state-owned banks do not play a significant role in the development of industries that rely more on external finance and/or that have less tangible assets to pledge as collateral.

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1. Introduction

In economies where informational asymmetries prevail many profitable projects can be rationed out of credit markets.[2] A common way of dealing with imperfect information in credit markets has been through direct intervention by governments in banking. In this paper, we tackle the empirical relationship between the ownership structure of banks and growth in a way that deals with potential econometric issues, namely omitted variables and reverse causality.

We explicitly identify the role of private and government owned banking in explaining industry growth. We test whether government-owned banking promotes growth by directing credit towards the industries that rely more on external finance and/or towards those industrial segments where informational asymmetries may be higher. We find that government-owned banks do not contribute to increasing the performance of industries that demand more credit, nor do they help promote growth of industries that lack collateral. In contrast, we find that private banks are more efficient in both tasks and have a significant impact on the growth rates of industries that have less collateral and are more dependent on external sources of finding.

2. Empirical Methods

Our empirical strategy is based on the assumption that the financial sector plays a growth-promoting role if it is able to direct financial resources towards the sectors that demand them most, and if it is able to identify profitable economic opportunities without having to rely exclusively on the availability of collateral.[3] The first claim is based on Rajan and Zingales (1998), who show that more developed financial systems, as measured by the ratio of credit to the private sector to GDP, are able to provide cheaper funds to firms that require more external finance.[4] Our second claim is based on the presumption that more developed financial systems rely on more advanced screening technologies that allow them to direct credit towards sectors with relatively less assets to pledge as collateral. Economic sectors with less collateral are subject to deeper informational asymmetries relative to those that can pledge high volumes of collateral. An efficient financial system must be able to identify profitable opportunities beyond

[2] See Stiglitz and Weiss (1981).
[3] Collateral has been observed to serve as a mechanism to resolve informational asymmetries and reduce credit rationing (see Coco, 2001).
[4] Their main finding is that industries that are more dependent on external financing have relatively higher growth rates in countries where financial sectors are more developed.

collateral availability. We explore whether different providers of credit in the form of state-owned or private institutions make a difference.[5]

The test we propose involves whether ownership structure of banks matters in terms of efficiency of credit allocation. For this purpose we decompose aggregate credit to the private sector into credit provided by state-owned and private banks, respectively. If the provision of credit by each type of bank is efficient, greater amounts of credit supplied by it should have positive impacts on the relative growth rate of those industries that require external finance more and that have higher shares of intangible assets.

When analyzing the impact of state-owned banking on growth, certain empirical challenges emerge. In particular, the question of endogeneity of the share of private banking appears as an issue. Regressions between economic performance and the share of public banking can be biased by omitted variable problems. To illustrate, think of a country where market imperfections are so large due to extremely limited property rights that private banking cannot develop. In such a country only government-owned banking could emerge, but because of weak property rights the economy would not be able to grow.[6]

In order to identify the requirements of external finance we use Rajan and Zingales' (1998) estimation based on the difference between investment and operating income for U.S. firms, where capital markets are assumed to be frictionless. To identify the difficulty of pledging assets as collateral we use the share of intangible assets with respect to total assets developed by Claessens and Laeven (2002).

We interact these variables with the share of credit coming from each type of provider in order to estimate the efficiency with which credit is provided.[7] Additionally, and in order to control for specific factors that can affect industry performance, we control for country and industry fixed effects. This way we address the omitted variable problem discussed above and

[5] Note that we do not explore the impact of state-owned banking on private banking. Previous research (see La Porta, López-de-Silanes, and Shleifer, 2000) has done so and finds that countries with greater shares of government property in the financial sector have less developed financial systems.
[6] See La Porta, López-de-Silanes, Shleifer and Vishy (1997 and 1998).
[7] By controlling for these specific factors the omitted variable problem is significantly reduced. Moreover, by estimating the interactive term we can fully identify the impact of credit market size as opposed to other correlated variables.

the possibility of reverse causality.[8] Specifically, We estimate the following empirical model using cross-industry-country data:

$$growth_{ij} = \alpha_0 + \alpha_1 share_{ij-1} + \alpha_2 credit\_private_i * x_j + \alpha_3 credit\_gov\_owned_i * x_j + \mu_i + \lambda_j + \varepsilon_{ij} \quad (1)$$

where the dependent variable is the growth rate of real value added of sector *j* in country *i*, $share_{ij-1}$ is the share of industry *j* in country *i* of total value added in manufacturing at the beginning of the period, $credit\_private_i$ is the ratio of credit to the private sector to GDP provided by privately owned institutions in country *i*, $credit\_gov\_owned_i$ is the ratio of credit to the private sector to GDP provided by publicly owned financial institutions, and x_j is either the requirement of industry *j* for external funds or the share of intangible assets of industry *j* that is used to proxy difficulties in pledging collateral. Additionally we include μ_i a country fixed effect, and λ_j, an industry fixed effect. Finally, εij is the error term. Our test is on the α_2 and α_3 coefficients. That is on how credit from private banks and credit from government-owned banks affect the performance of firms separately. If there are no differences between government-owned and private banks' efficiency in the provision of financial services these should be equal. If the provision of state-owned financial services improves the performance of firms that require external funding the most or that have less collateral (relatively more intangible assets), α_3 should be larger than α_2 and significant.

Our sector value-added data comes from United Nations Statistical Division and covers 20 industries in 33 countries. The measure of financial sector development used in this paper is the standard ratio of credit to the private sector to GDP from the World Development Indicators of the World Bank. The measure of credit provided by government-owned institutions is based on La Porta, López-de-Silanes, and Shleifer (2000), who show the percentage of government-owned assets in the 10 largest banks in each country in 1970. We multiply this share by the measure of total credit described above. Credit provided by privately owned institutions is the difference between the measure of total credit to GDP and the former. The following section shows our empirical results using this methodology and data.

[8] See Rajan and Zingales (1998) for a discussion.

3. Private Banking, Government-Owned Banking, and Sector Performance

Table 1 reports our baseline results. Column 1 shows that more developed financial systems tend to favor economic sectors that for technological reasons demand more credit (this is the basic Rajan and Zingales result). Column 2 additionally shows that more developed financial systems also are beneficial for those industries that have less collateral available. This validates the hypothesis that financial development is accompanied by the development of screening technologies that allow lenders to identify profit opportunities even when physical assets are not available as collateral.[9] Column 3 shows that both results hold even when included simultaneously in our benchmark regression. In summary, columns 1-3 suggest that financial development is crucial for the performance of industries that require more credit for technological reasons and have less collateral available.

Columns 4-6 analyze whether the provider of credit matters or, in other words, whether private or state-owned financial institutions are equally efficient in identifying profit opportunities in the manufacturing industry. Column 4 suggests that what really matters for the performance of firms demanding external sources of funds is that those funds are provided by private institutions. Higher levels of state-owned banking does not increase the performance of these sectors. The same can be said for sectors that have less tangible assets to pledge as collateral, as shown by column 5. What matters for these sectors is the development of private credit markets, which apparently are better at identifying profit opportunities while looking beyond collateral availability. Finally, column 6 shows that both results remain when analyzed simultaneously. In summary, private banks appear to be much more efficient than their state-owned counterparts in the provision of financial services to manufacturing sectors that require external finance and to those that have less collateral.

[9] The development of credit bureaus or other forms of information sharing mechanisms as described in Jappelli and Pagano (2001) is an example.

Table 1. Baseline Results

Dependent variable: Annual value added growth[a] (Average 1970-1980)	(1)	(2)	(3)	(4)	(5)	(6)
Industry's share in (t-1)[b]	-0.195	-0.180	-0.196	-0.198	-0.181	-0.200
	(0.042)***	(0.040)***	(0.042)***	(0.042)***	(0.040)***	(0.043)***
Total Credit to Private Sector[c] * External dependence	0.072		0.070			
	(0.027)***		(0.027)***			
Total Credit to Private Sector * Intangible Index		0.010	0.008			
		(0.004)**	(0.004)*			
Credit from Private Banks * External Dependence				0.081		0.078
				(0.028)***		(0.028)***
Credit from State Owned Banks * External Dependence				0.045		0.046
				(0.037)		(0.037)
Credit from Private Banks * Intangible Index					0.013	0.011
					(0.005)***	(0.004)**
Credit from State Owned Banks * Intangible Index					-0.003	-0.004
					(0.007)	(0.007)
Observations	652	652	652	652	652	652
Number of countries	34	34	34	34	34	34
Country Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Robust t-statistics in parenthesis
* Significant at 10%, ** Significant at 5%, *** Significant at 1%
a. The dependent variable is the average of annual real value added growth for each ISIC industry in each country.
b. The industry's share of total value added in manufacturing in 1970.
c. Total credit to the private sector, credit from private banks, and credit from state owned banks are as a percentage of GDP

As a test of robustness we repeat the exercises above for a different sample period (in Table 2). The dependent variable in this case is computed for the 1970-1990 sample. Results are virtually the same, though slightly weaker for the intangibility measure.

Table 2. Robustness Checks

Dependent variable: Annual value added growth[a] (Average 1970-1990)	(1)	(2)	(3)	(4)	(5)	(6)
Industry's share in (t-1)[b]	-0.172	-0.159	-0.173	-0.175	-0.160	-0.176
	(0.027)***	(0.025)***	(0.027)***	(0.028)***	(0.026)***	(0.028)***
Total Credit to Private Sector[c] * External dependence	0.042		0.041			
	(0.018)**		(0.018)**			
Total Credit to Private Sector * Intangible Index		0.005	0.004			
		(0.003)*	(0.003)			
Credit from Private Banks * External Dependence				0.052		0.051
				(0.019)***		(0.019)***
Credit from State Owned Banks * External Dependence				-0.016		-0.015
				(0.026)		(0.026)
Credit from Private Banks * Intangible Index					0.006	0.005
					(0.003)**	(0.003)*
Credit from State Owned Banks * Intangible Index					-0.004	-0.003
					(0.005)	(0.005)
Observations	613	613	613	613	613	613
Number of countries	33	33	33	33	33	33
Country Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Robust t-statistics in parenthesis
* Significant at 10%, ** Significant at 5%, *** Significant at 1%
a. The dependent variable is the average of annual real value added growth for each ISIC industry in each country.
b. The industry's share of total value added in manufacturing in 1970.
c. Total credit to the private sector, credit from private banks, and credit from state owned banks are as a percentage of GDP

Our results support the view that government ownership of banks is noxious because it politicizes lending decisions, softens budget constraints and diverts funds towards politically attractive projects, instead of economically viable ones.[10] From this perspective, state-owned banks are assumed to respond to political incentives rather than to economic ones. Private banks, on the other hand, seem to improve financing opportunities for firms that require them the most and have lower collateral, and in the process promote economic growth. Clearly we find no evidence in favor of the claim of supporters of state owned banking who suggest that it can be growth promoting since it allows the mobilization of savings towards strategic sectors that cannot access external funds.[11]

4. Conclusions

Even if market distortions are in place, government intervention through public banking is not necessarily the best way to deal with them. Our empirical evidence suggests that state-owned banks do not promote the growth rates of manufacturing industries that rely on external sources of funding for their operation, nor do they promote the growth rates of manufacturing industries that, due to reduced access to collateral, face tighter financial constraints. On the contrary, the development of a private banking industry appears to have a significant effect on such types of industries.

[10] For a discussion see Shleifer and Vishny (1994).
[11] Examples of this literature can be found in Lewis (1950) and Myrdal (1968).

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