Market- vs. bank-based financial systems: Do rights and regulations really matter?

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Abstract

In some countries, banks are firms' key source of financing. In others, firms look mainly to financial markets to meet their financial needs. Why should this be so? This paper provides an explanation tied to legal traditions. Civil-law courts are less effective than their common-law counterparts in resolving conflicts because they have less flexibility in interpreting the laws and creating new rules. Banks emerge in these economies as primary contract enforcers, leading to bank-oriented financial systems. Furthermore, because common-law courts enforce laws effectively, providing them with more detailed creditor and shareholder protection laws has a greater impact on the development of financial markets compared with civil-law systems.
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1. Introduction

Why are the financial systems of common-law countries market-oriented and civil-law countries bank-dominated? [1]

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[1] I measure market- vs. bank-orientation by the ratio of bank loans to the private sector to stock market capitalization. More on this later.

I propose an explanation tied to the way laws are made and applied in these two legal systems. Although there is no agreement among legal scholars on the most fundamental difference between common-law and civil-law systems, there are two widely accepted views (see Posner, 1998; Rubin, 1977; Priest, 1977; Katz, 1986; Glendon et al., 1999; Mattei, 2000; Djankov et al., 2002). First, common-law courts are more effective than civil-law courts in resolving conflicts because judges have the flexibility to create the law when the statutes do not address a particular problem. Second, even when the statutes in civil-law countries explicitly give the judges the right to interpret (read create) the law, civil-law judges use this power very infrequently. I will elaborate on these issues in Section 2.

Starting with these two premises, I argue that, in civil-law countries, literal interpretation of contract language by the courts increases the risk of an unfair verdict and makes the writing of one-time bilateral contracts problematic. This necessitates the involvement of a financial intermediary such a bank in the contracting process. In other words, banks emerge in civil-law countries as institutions that can resolve conflicts and enforce contracts without court intervention. The wider discretion enjoyed by common-law judges in interpreting contract language, reducing the risk of an unfair verdict and therefore contracting costs, favors market-oriented financial systems. [2]

The idea that relationship-based systems are superior to market-based systems in environments where laws are poorly drafted and enforced is not new (see, for example, Rajan and Zingales, 1998; Egli et al., 2001). Yet, this approach has usually been used in comparing developed countries that rank high in measures of contract enforcement and rule of law to developing countries, which have poorly drafted laws.

In this paper, I look at the more fundamental differences between civil-law and common-law countries in the area of judicial decision-making. Even in the European civil-law countries where judicial systems are considered to be efficient (à la LaPorta et al., 1997, 1998 (henceforth LLSV)), codes are much more powerful than those in common-law countries as a restraint on judicial decision-making. So, the problem is not that laws are weakly enforced, it is that laws are enforced too literally – i.e., civil-law courts put too much emphasis on the word of law (also see Djankov et al., 2002). I argue that the differences in the interpretive powers of the judges in common- and civil-law traditions may explain why German and French financial systems are bank-dominated, while English and American systems are market-oriented.

This argument has two implications that are supported by the evidence in the paper. First, the origin of the legal system is an important determinant of a country's financial system structure in addition to the sophistication of the investor protection laws and the country's rule-of-law tradition. Second, in every legal system, laws and regulations are the starting point of judicial decision-making. However, common-

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[2] Djankov et al. (2002) find that procedural formalism in dispute resolution and emphasis on the word of law rather than equity are systematically greater in civil than in common-law countries. They also find that this is associated with ''higher expected duration of judicial proceedings, more corruption, less consistency, less honesty, less fairness in judicial decisions, and inferior access to justice''.

law courts can use their interpretive powers to cast a wider net around the law to penalize opportunistic behavior more effectively. Therefore, providing common-law courts with more detailed creditor and shareholder protection laws has a greater impact on the development of banks and stock markets, respectively, compared with civil-law systems.

These results complement earlier research on the determinants of a country's financial system structure. Focusing on the evolution of European financial systems, Gerschenkron (1962) argues that universal banks were a more effective supplier of funds than markets to the nascent industries of 19th century continental Europe where capital was scarce and diffused and industrialization activities concentrated on areas of relatively high ratios of capital to output. Alternatively, Allen and Gale (1999) point to markets' ability to aggregate information from a wide range of disparate sources. Markets are needed in situations of rapidly advancing technologies and banks are needed when technologies are clearly understandable and investments just need monitoring. Hence, markets developed in England where most new technologies were invented in the 19th century while banks financed the industrialization of the continental Europe, which simply imported those technologies from England (see Rajan and Zingales, 2003, for additional historical reasons). Although these arguments hold in the 19th century Europe, they do not explain why markets are large relative to banks today in Zimbabwe, Singapore, Malaysia and South Africa (the ratio of loans by deposit-taking banks to market capitalization is 0.90, 0.61, 0.50 and 0.41 respectively; all developing common-law countries) but banks are the key players in Austria, Portugal, Egypt and Indonesia (the same ratio equals 11.22, 9.11, 3.44 and 3.42 respectively; all civil-law countries).

A second branch of the literature, which is based on the findings of LaPorta et al. (1997, 1998) and Levine (1998, 1999) provides a connection between financial system design, laws and regulations. LLSV find that markets develop better in countries where the rights of the minority shareholders are well protected. Because well-defined shareholder rights are found in common-law countries, they conclude that it is no wonder that markets are larger in common-law countries relative to civil-law countries. Likewise, Levine finds that banks develop better in countries where the rights of the secured creditors are well protected. However, none of these papers allow for the possibility that the two legal systems correspond to two separate economic environments where investor rights may play different roles.

The main contribution of this paper is to show that the legal tradition (the way the laws are made and applied; not just their content) determines the structure of the financial system. Legal rights and regulations arise from the necessities of this structure. In other words, laws and regulations are the end product rather than the determinant of a financial system. As a result, they may have an economic effect on financial system development in one legal tradition but little or no effect in the other.

The rest of the paper is organized as follows. Section 2 contains a brief description of the civil-law and common-law traditions and identifies the main issues that set them apart (see Glaeser and Shleifer (2001) for a nice review of the histories of these traditions). Section 3 reviews the theory behind my arguments. Section 4 tests the empirical implications. Section 5 concludes.

2. A comparison of legal traditions: How should the law be made and applied?

In the Anglo-American judicial system based on common law, the traditional idea was to formulate laws only when social conditions made them necessary while in the civil-law system, the idea was that there must be a codified framework of law in which any law needed by the community could be found (in this section, I borrow heavily from Greenberg (1986), Katz (1986) and Mattei (2000)). In the common-law tradition, the judge not only applies the law but also interprets and, to a degree, even creates the law. Judicial formulation of rules is based frequently on the principle that judges should build on the precedents established by past decisions (*stare decisis*). Following precedents allows judges to build on the knowledge and experience of past generations. This system minimizes arbitrariness and is less vulnerable to the weakness and inexperience of the judge (Priest, 1977; Vago, 2000).

In civil-law countries, however, judges apply the law strictly as laid down in the codes and enactments of the legislature. In France, for example, lawmakers barred judges from using judicial creativity in filling in the gaps of the Napoleonic Code (Mattei, 2000). Surely, this does not mean that statutory law does not need to be interpreted. The Austrian Civil Code of 1811, the Spanish Civil Code of 1888 and the Italian Civil Code of 1942 contained explicit directions on interpretation of legislative texts. Glendon et al. (1999) mention the Article 1 of the Swiss Civil Code of 1907 as the most famous of all such interpretive directions. That article dictates that if the judge faces a situation that cannot be addressed by the enacted or customary law, he is free to act as a legislator and create his own rule. However, in the years since the Swiss Civil Code has been in force, Swiss judges rarely invoked Article 1. They almost always preferred the more traditional methods of interpretation. These methods involve logical and grammatical torture of the code in search of a section that applies to the issue at hand.

Glendon et al. trace back the civil-law judges' reluctance to use their interpretive powers to the times of the French Revolution when the royal judges were accused of betraying the people by systematically ruling in favor of the aristocrats. After the Revolution, Article 5 of the French Civil Code of 1804 forbid judges to lay down general rules in deciding cases. As the judges were not eager to test the limits of their power, codes in civil-law countries became a powerful restraint on their decision-making ability (Glaeser and Shleifer (2001), observe the same fact; also see Djankov et al. (2002)).

Based on this discussion, I argue in this paper that because common-law courts are less constrained in interpreting the law when the statutes are incomplete and adapt to changing conditions more easily, they are more effective in resolving conflicts than their civil-law counterparts.

3. Theory background

Imagine a world where an opportunistic borrower finds a way to fraudulently transfer an asset to the detriment of the lender. Civil-law courts are unable to rectify

the situation because the borrower's technique is not defined in the statutes. Courts behave that way not because of neglect or incompetence but because, unlike their common-law counterparts, they put more emphasis on following the word of the law than on fairness. This allows insiders in civil-law countries to structure unfair (immoral but not necessarily illegal) transactions that conform to the letter of the law. (Johnson et al., 2000, empirically verify this sluggishness of the civil-law courts in a conflict between minority and controlling shareholders.)

The repercussion of the courts' behavior on the economy is that borrowers cannot credibly commit themselves to not exploit the lender and consequently, cannot borrow from the capital markets. What is the advantage of a bank in this setting? Banks can provide borrowers with valuable services that individual investors are unable to offer.

For example, banks can mitigate investment distortions by monitoring borrowers (see, for example, Diamond, 1984; Von Thadden, 1995), or they can establish close relationships with their customers, which reduces banks' cost of making loans, and increases credit availability (Petersen and Rajan, 1994; Berger and Udell, 1995, 1996). The literature on the announcement effect of bank loan agreements on stock prices finds a positive price reaction, which suggests that bank involvement has a distinct added value (see James, 1987; Lummer and McConnell, 1989).

When a conflict arises between a borrower and lender from a fraudulent asset transfer by the borrower, the bank can still extract its contractual rents without judicial assistance by credibly threatening the borrower with withholding these services. The bank's superior bargaining power relative to individual investors allows the borrower to obtain funds in environments where courts are unlikely to reach fair decisions.

However, bank financing also has a downside. The proprietary information that a bank obtains about a borrower during the relationship allows the bank to extract additional rents from the borrower's investments and consequently, may reduce the borrower's incentive to invest. Valuable investment opportunities may be lost (Rajan, 1992; Von Thadden, 2001). Therefore, in countries where courts are sufficiently effective and therefore borrowers' commitment to repay their loans is credible, one would expect borrowers to prefer markets over banks because markets are less costly (also see, Egli et al. (2001) for a similar argument). Thus, common-law countries are expected to be market-oriented while the civil-law countries will be dominated by banks.

In the next section, I test the empirical implications of these arguments.

4. Empirical implications, data and tests

The main implication of the paper is that the bank- and market-oriented financial structures exist because the civil- and common-law systems entail two fundamentally different contract and law enforcement environments. So, after controlling for various factors such as a country's respect for the rule of law, the contents of its investor

protection laws, its economic and political stability, etc., the legal origin should still be an important determinant of the financial system structure.

Hypothesis 1. A country's legal system is a fundamental determinant of its financial system structure.

Civil-law courts are less effective in settling disputes than common-law courts not because they lack the laws and regulations that common-law courts have but because they are incapable of enforcing the rules that are already in the books. Because common-law courts can interpret the law and extend its coverage to areas not originally included in the text of the law, the positive effect of having better-defined rights should be larger in common-law countries than in civil-law countries. This is the second testable hypothesis of the paper.

Hypothesis 2. Because common-law courts enforce contracts effectively, improvements in shareholder and creditor rights will boost stock market and bank development, respectively, more in common-law countries than in civil-law countries.

In the next section, I present the data that I use to test the validity of these hypotheses.

4.1. Data and method

My sample contains 46 countries; 28 from the civil-law and 18 from the common-law tradition. I use the World Bank Financial Structure and Economic Development Database developed by Beck et al. (1999) and the World Bank Bank Regulation and Supervision Database developed by Barth et al. (2001b). The Financial Structure database covers the 1960–1995 period for most industrialized nations. The time span may be shorter for some variables (such as bond markets) in developing nations. A detailed definition of all the variables used in the analysis can be found in Table 1.

I test Hypothesis 1 in two steps. The first step is a brief confirmation of what we already know. I show that when investor (shareholder) rights are not well defined, banks tend to dominate the financial system. I estimate the model below using ordinary least squares. I use the White-correction to obtain the heteroscedasticity-consistent standard errors (this is the estimation technique I use throughout the paper).

$$\ln(\text{BANK/MARKET})$$
$$= \text{Intercept} + \beta_{\text{AD}}\text{ANTIDIR} + \beta'[\text{Control Variables}] + \epsilon. \qquad (1)$$

Ln(BANK/MARKET) is the log-ratio of private credit by deposit-money banks (BANK) to stock market capitalization (MARKET). This ratio is a common measure of financial system orientation (e.g., Beck and Levine, 2002; Levine, 2002) and its components are used to assess the bank and stock market development (Levine, 1998; Levine and Zervos, 1998; Beck et al., 1999, 2000; Levine et al., 2000). ANTIDIR (antidirector rights) is a measure of how well the laws protect minority

Table 1
Data definitions

Variable	Definition	Sources
BANK	Credits to the private sector by deposit-money banks to GDP	World Bank Financial Structure and Economic Development Database (Levine et al., 2000; Beck et al., 2000)
MARKET	Value of listed shares divided by GDP	World Bank Financial Structure and Economic Development Database
CREDITOR	Conglomerate of three individual creditor rights indicators that account for (1) how easily lenders can gain possession of collateral or liquidate the firm if the firm fails to meet a loan obligation; (2) whether or not the incumbent management continues to run the business pending the resolution of the reorganization process; and (3) whether the secured creditors are paid first if the firm is liquidated. The variable takes on values between −2 (best) and 2 (worst)	World Bank Financial Structure and Economic Development Database (LaPorta et al., 1998; Levine, 1998; Levine et al., 2000; Beck et al., 2000)
ANTIDIR	Conglomerate of several individual shareholder rights indicators that measure (1) how strongly the legal system favors minority shareholders against managers or large shareholders; and (2) whether the system protects the voting mechanism against interference by the insiders. The variable takes on values between 0 (worst) and 5 (best)	World Bank Financial Structure and Economic Development Database (LaPorta et al., 1998)
ENFORCE	Average of the *Rule of Law* and *Risk of Contract Repudiation* variables developed by LaPorta et al. (1998). It assesses a country's law and order tradition and the risk that the government will repudiate, postpone or reduce its financial obligations	World Bank Financial Structure and Economic Development Database (Levine, 1998; Levine et al., 2000; Beck et al., 2000)
LGDPCAP	Natural log of Real per capita GDP ($000) (1980s average)	King and Levine (1994)
LGDPSQR	LGDPCAP-squared	
RESTRICTION	Measure of the regulatory restrictions on bank ownership of nonfinancial firms and banks' securities underwriting and real estate activities. A dummy variable for each activity takes a value of '1' if a full range of activities can be conducted directly in the bank, '2' if the activity *is* permitted but must be conducted in subsidiaries, '3' if less than a full range of activities can be conducted in the bank or subsidiaries and '4' if the activity is completely prohibited. 'Restriction' is an average of the three dummies	World Bank Bank Regulation and Supervision Database and Barth et al. (2001b)
SUPERVISE	Measure of whether bank supervisors have the authority to take specific actions to prevent and correct problems. Higher values indicate greater supervisory power	World Bank Bank Regulation and Supervision Database and Barth et al. (2001b)

Table 1 (*continued*)

Variable	Definition	Sources
CONCENTRATION	Ratio of the three largest banks' assets to total banking sector assets	World Bank Financial Structure and Economic Development Database
BOND	Total amount of outstanding domestic debt securities issued by private and public domestic entities divided by GDP	World Bank Financial Structure and Economic Development Database
SCHOOL	Natural log of (1+ average years of schooling in total population in 1960)	Beck et al. (2000)
GOVERNMENT	Share of government expenditure in GDP	Beck et al. (2000)
BLACKMARKET	Ratio of black market exchange rate and official exchange rate minus one	Beck et al. (2000)
BUREAU	Average of three indices that measure the efficiency of the judiciary system, red tape and corruption. Higher values denote greater efficiency	Beck et al. (2000)
INFLATION	Natural log of the average inflation rate	Beck et al. (2000)
REVOLUTION	Number of revolutions and coups d'état	Beck et al. (2000)
CIVIL	A dummy that equals 1 if the country belongs to the civil-law tradition and 0 otherwise	
FRENCH	A dummy that equals 1 if the country belongs to the French civil-law tradition and 0 otherwise	
GERMAN	A dummy that equals 1 if the country belongs to the German civil-law tradition and 0 otherwise	

shareholders. My control set includes the natural log of the country's per capita GDP (LGDPCAP), a measure of the country's rule-of-law tradition (ENFORCE), and a measure of how well the laws protect the rights of secured lenders during bankruptcy (CREDITOR). Also, following Gerschenkron's view that large scale banking was crucial in the industrialization of the "moderately" backward economies of the 19th century (Germany) but not of "advanced" (England) or "extremely" backward areas (Russia), I include LGDPCAP-squared to capture the suspected non-monotonic relationship between wealth and financial system structure (see Good (1973) and Fohlin (2000) for tests of Gerschenkron's hypothesis). [3]

In the second step, I introduce a new regressor, CIVIL, which is a dummy variable that equals one if the country belongs to the civil-law tradition and 0 otherwise. I also add eight variables to the conditioning set to control for the economic, political and social configuration of each country. These include citizens' average years of schooling (SCHOOL), the inflation rate as a measure of economic stability (INFLATION), the black market exchange rate premium as an indicator of the economy's openness (BLACKMARKET), a measure of bureaucratic efficiency (BUREAU), the number of revolutions as an indicator of political stability (REVOLUTION) and a measure of the government's involvement in the economy (GOVERNMENT). I also include the size of the bond market (BOND) in one regression to control for the availability of an alternative source of market funding, which may affect the size of the stock market relative to banks. The reason I do not include it in every regression is that I am losing almost half of my dataset due to the small size of the bond market data. The model I estimate is otherwise identical to (1).

I test Hypothesis 2 by estimating the following models in the common-law and civil-law samples separately:

$$\text{MARKET} = \text{Intercept} + \beta_{\text{AD}}\text{ANTIDIR} + \beta'[\text{Control Variables}] + \epsilon, \qquad (2)$$

$$\text{BANK} = \text{Intercept} + \beta_{\text{CR}}\text{CREDITOR} + \beta'[\text{Control Variables}] + \epsilon. \qquad (3)$$

My control-variable set includes the same variables I used earlier as well as banking sector concentration, and regulatory restrictions on banking activities.

In order to show that there are fundamental differences between common-law and civil-law countries, I test the null hypothesis that common-law and civil-law subsamples correspond to similar economic environments where investor protection plays a comparable role in bank and market development (Chow test). More precisely, the null is defined as

$$\begin{aligned} \text{H}_0 : &\text{Intercept}_{\text{common}} - \text{Intercept}_{\text{civil}} = 0 \quad \text{and} \\ &\beta_{\text{AD (CR),common}} - \beta_{\text{AD (CR),civil}} = 0 \quad \text{and} \quad \beta_{i,\text{common}} - \beta_{i,\text{civil}} = 0, \end{aligned} \qquad (4)$$

where β_i is the estimated parameter for each variable in the conditioning set.

I also run a separate test that compares only the parameter estimates of CREDITOR and ANTIDIR in common-law and civil-law countries. That is,

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[3] I would like to thank an anonymous referee for suggesting this variable.

$$H_0 : \beta_{AD\ (CR),common} - \beta_{AD\ (CR),civil} = 0. \tag{5}$$

If my second hypothesis is valid, (5) must be rejected.

Table 2 presents the summary statistics and a test of means for a selected set of variables (a complete set may be obtained from the sources in Table 1 or from the author upon request). There is no significant difference between the banking systems of the two legal traditions with the exception of the German civil-law countries that have the largest banking sector in the dataset. However, common-law countries have significantly well-developed markets compared with civil-law countries. Therefore, the BANK/MARKET ratio indicates that common-law countries are market-oriented (1.27) and civil-law countries are bank-dominated (2.77). Despite the significant divergence in the financial system structure, the two systems do not differ in per capita GDP, which is consistent with the results in earlier papers (Demirguc-Kunt and Maksimovic, 1998; Levine and Zervos, 1998; Levine, 2002) that it is unimportant for economic growth whether financial development stems from bank or market development (see Table 2).

4.2. Results

Table 3 shows the results from the tests of Hypothesis 1. Regressions [1] and [2] show that countries with well-defined shareholder protection laws have market-oriented financial systems, consistent with earlier literature. However, when the legal origin is introduced into the model, the significance of shareholder rights evaporates ([3]). The effect of the legal origin on financial system structure is both statistically and economically significant. Regressions [4] and [5] show that after controlling for social, economic and political factors, the BANK-to-MARKET ratio of a civil-law country is still 95% larger than that of an otherwise identical common-law country (using the smallest estimate in regression [4]). [4] and [5] also indicate that economic and political instability as well as red tape, corruption and lack of education lead to bank-oriented financial systems. These are all factors that increase individuals' contracting costs and necessitate the involvement of a financial intermediary in the contracting process. [4]

The tests of Hypothesis 2 are in Tables 4 and 5. [5] Table 4 shows the effect of shareholder rights on stock market development. In [6], a one standard deviation increase in ANTIDIR (0.97) in the common-law sample boosts the MARKET variable by 0.13. This increase corresponds to 25% of the sample mean of MARKET. A similar increase in ANTIDIR in the civil-law sample improves MARKET by 0.05. Note, however, that the difference between 0.13 and 0.05 is not statistically significant (see the Chow test results in Panel B).

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[4] In regression [5], ANTIDIR has no effect on financial system structure while ENFORCE and LGDPCAP become economically very significant. The missing BONDS data add some bias to the results and are mainly responsible for these findings.

[5] Note that, because of the small number of countries in each legal tradition – a factor beyond my control – I recommend caution when interpreting these results outside this sample.

Table 2
Summary statistics and tests of means (selected variables)

Legal system	BANK	MARKET	BANK/MARKET	CREDITOR	ANTIDIR	ENFORCE	LGDPCAP	BOND	RESTRICTION
Panel A – Summary statistics									
Common law									
N	18	18	18	18	18	18	18	9	15
Average	0.46	0.51	1.27	0.39	4.00	6.94	8.36	0.59	2.02
Standard deviation	0.31	0.44	0.63	0.85	0.97	2.22	1.06	0.39	0.61
Civil law									
N	28	28	28	28	28	28	28	20	25
Average	0.47	0.22	2.77	−0.68	2.54	7.55	8.68	0.68	2.17
Standard deviation	0.32	0.18	2.36	0.98	1.10	2.13	0.67	0.43	0.69
French civil-law									
N	18	18	18	18	18	18	18	11	16
Average	0.33	0.16	2.57	−0.89	2.50	6.57	8.40	0.58	2.31
Standard deviation	0.23	0.12	1.99	1.08	1.20	1.98	0.62	0.46	0.67
German civil-law									
N	6	6	6	6	6	6	6	5	6
Average	0.88	0.38	3.84	0.00	2.33	9.07	9.03	0.68	1.94
Standard deviation	0.31	0.26	3.78	0.63	1.03	1.10	0.55	0.20	0.83
Scandinavian civil-law									
N	4	4	4	4	4	4	4	4	3
Average	0.48	0.25	2.07	−0.75	3.00	9.72	9.38	0.93	1.89
Standard deviation	0.10	0.09	0.74	0.50	0.82	0.13	0.08	0.54	0.51
Panel B – Tests of means (p-values)									
Common–Civil	0.92	0.02	<0.01	<0.01	<0.01	0.36	0.27	0.59	0.48
Common–French	0.17	<0.01	0.02	<0.01	<0.01	0.60	0.88	0.96	0.22
Common–German	0.02	0.40	0.16	0.26	<0.01	<0.01	0.06	0.55	0.84
Common–Scandinavian	0.86	0.03	0.11	<0.01	0.08	<0.01	<0.01	0.31	0.71
French–German	<0.01	0.09	0.46	0.03	0.75	<0.01	0.04	0.53	0.36
French–Scandinavian	0.07	0.14	0.42	0.70	0.35	<0.01	<0.01	0.30	0.29
German–Scandinavian	0.02	0.29	0.31	0.07	0.29	0.21	0.18	0.43	0.91

Table 3
The effect of the legal system on financial system structure

	Dependent variable: Ln(BANK/MARKET)				
	[1]	[2]	[3]	[4]	[5]
INTERCEPT	3.36	7.81	15.37	16.64	28.83
	(0.01)	(0.37)	(0.08)	(0.04)	(0.08)
ANTIDIR	−0.22	−0.23	−0.09	−0.05	0.00
	(0.00)	(0.00)	(0.27)	(0.46)	(0.94)
CREDITOR	−0.06	−0.06	0.10	0.05	−0.04
	(0.52)	(0.49)	(0.29)	(0.70)	(0.81)
ENFORCE	0.17	0.15	0.08	0.20	0.65
	(0.07)	(0.17)	(0.51)	(0.12)	(0.00)
LGDPCAP	−0.40	−1.49	−3.57	−4.55	−7.50
	(0.08)	(0.49)	(0.10)	(0.02)	(0.06)
LGDPSQR		0.07	0.20	0.32	0.46
		(0.62)	(0.15)	(0.01)	(0.06)
CIVIL			0.76	0.67	0.77
			(0.00)	(0.01)	(0.01)
SCHOOL				−0.69	−0.49
				(0.11)	(0.41)
INFLATION				−1.26	−1.11
				(0.17)	(0.66)
BLACKMARKET				3.01	0.99
				(0.03)	(0.84)
BUREAU				−0.28	−0.46
				(0.00)	(0.00)
REVOLUTION				1.00	2.59
				(0.05)	(0.00)
GOVERNMENT				0.04	0.01
				(0.17)	(0.84)
BONDS					−0.25
					(0.29)
Adj. R^2 (%)	18	16	29	44	52
# of observations	46	46	46	37	25

Note: Heteroscedasticity-consistent *p*-values are in parenthesis.

After controlling for the non-monotonicity of the wealth effect and various economic, social and legal factors ([7]–[14]), the statistical significance of the Chow test results improves considerably although it fails to reach the 10% level in one instance ([8]). In summary, the positive effect of shareholder rights on market development that was documented by LaPorta et al. (1997) seems to originate mostly from the common-law sample.

Table 5 presents the effects of creditor rights on bank development. Regression [15] in Panel A recaptures the results of Levine (1998) that creditor rights promote banking development. As Levine also points out, this positive effect is economically significant. In the joint sample of common- and civil-law countries, the increase in BANK as a result of one standard deviation increase in CREDITOR is about 18% of the sample mean of BANK. However, when the sample is restricted to

Table 4
The effect of shareholder rights on market development

Legal tradition	[6]			[7]		[8]		[9]		[10]		[11]		[12]	[13]	[14]
	Common & civil	Common	Civil	Common	Civil	Common	Civil	Common	Civil	Common	Civil	Common	Civil		Civil	
Panel A – Parameter estimates																
INTERCEPT	−1.48	−1.82	−0.09	−18.67	5.50	−14.46	1.98	−17.98	16.28	−8.98	14.60	−19.56	11.24	7.28	14.46	11.15
	(0.01)	(0.01)	(0.88)	(0.02)	(0.34)	(0.03)	(0.62)	(0.05)	(0.00)	(0.16)	(0.05)	(0.03)	(0.17)	(0.10)	(0.00)	(0.07)
ANTIDIR	0.13	0.13	0.05	0.21	0.05	0.15	0.03	0.20	0.05	0.17	0.04	0.21	0.04	0.07	0.05	0.06
	(0.00)	(0.12)	(0.06)	(0.02)	(0.05)	(0.09)	(0.15)	(0.04)	(0.05)	(0.03)	(0.16)	(0.05)	(0.11)	(0.01)	(0.03)	(0.02)
ENFORCE	0.00	−0.02	0.05	0.04	0.04	0.02	0.00	0.04	0.09	−0.14	0.07	0.02	0.07	0.03	0.07	0.05
	(0.99)	(0.72)	(0.06)	(0.46)	(0.16)	(0.60)	(1.00)	(0.54)	(0.04)	(0.12)	(0.05)	(0.65)	(0.04)	(0.31)	(0.09)	(0.08)
LGDPCAP	0.16	0.23	−0.02	4.39	−1.35	3.46	−0.48	4.26	−3.77	2.32	−3.40	4.59	−2.60	−1.82	−3.37	−2.68
	(0.05)	(0.04)	(0.79)	(0.02)	(0.34)	(0.03)	(0.62)	(0.05)	(0.01)	(0.13)	(0.06)	(0.04)	(0.18)	(0.09)	(0.00)	(0.07)
LGDPSQR				−0.26	0.08	−0.21	0.03	−0.26	0.21	−0.13	0.19	−0.27	0.14	0.11	0.19	0.15
				(0.03)	(0.36)	(0.03)	(0.63)	(0.06)	(0.01)	(0.18)	(0.07)	(0.05)	(0.22)	(0.10)	(0.00)	(0.08)
BANK						0.87	0.37								−0.02	
						(0.00)	(0.01)								(0.15)	
GOVERNMENT								0.01	−0.02							
								(0.61)	(0.06)							
BLACKMARKET										−1.92	0.15					
										(0.02)	(0.60)					
SCHOOL												−0.13	0.14			0.22
												(0.74)	(0.30)			(0.12)
FRENCH														0.10	0.00	0.17
														(0.23)	(0.99)	(0.05)
GERMAN														0.23	0.12	0.27
														(0.03)	(0.34)	(0.01)
Adj. R^2 (%)	35	28	27	42	27	66	43	31	37	53	23	33	26	38	39	58
# of observations	46	18	28	18	28	18	28	15	26	15	26	14	26	28	26	25

Panel B – Chow test results (p-values): Common-law vs. civil-law

	[6]	[7]	[8]	[9]	[10]	[11]
All variables	0.06	<0.01	<0.01	<0.01	<0.01	0.01
Creditor	0.32	0.06	0.17	0.07	0.07	0.08

Note: Heteroscedasticity-consistent *p*-values are in parenthesis.

Table 5
The effect of creditor rights on bank development

Legal tradition	[15] Common & civil	[15] Common	[15] Civil	[16] Common	[16] Civil	[17][a] Common	[17] Civil	[18] Common	[18] Civil	[19] Common	[19] Civil	[20] Common	[20] Civil	[21] Common	[21] Civil	[22] Common	[22] Civil
Panel A – Parameter estimates																	
INTERCEPT	−1.06	−1.68	0.13	−0.61	8.65	6.15	11.18	0.35	20.15	−0.65	16.59	−1.20	11.20	2.77	5.13	1.91	14.88
	(0.03)	(0.01)	(0.88)	(0.77)	(0.27)	(0.20)	(0.72)	(0.80)	(0.03)	(0.76)	(0.15)	(0.62)	(0.15)	(0.36)	(0.28)	(0.31)	(0.21)
CREDITOR	0.08	0.21	−0.01	0.21	−0.02	0.13	0.09	0.15	0.01	0.09	0.00	0.21	−0.02	0.13	0.01	0.09	0.00
	(0.04)	(0.01)	(0.81)	(0.02)	(0.65)	(0.07)	(0.09)	(0.00)	(0.77)	(0.03)	(0.96)	(0.02)	(0.53)	(0.01)	(0.76)	(0.02)	(0.99)
ENFORCE	0.06	0.03	0.14	0.03	0.13	−0.58	0.11	0.00	0.19	0.02	0.13	0.02	0.11	0.01	0.08	−0.06	0.13
	(0.02)	(0.36)	(0.00)	(0.49)	(0.00)	(0.05)	(0.06)	(0.84)	(0.00)	(0.38)	(0.00)	(0.63)	(0.00)	(0.70)	(0.07)	(0.08)	(0.00)
LGDPCAP	0.13	0.22	−0.08	−0.05	−2.09	−1.53	−2.83	−0.21	−4.69	0.04	−3.86	0.13	−2.69	−0.81	−1.27	−0.45	−3.47
	(0.08)	(0.02)	(0.49)	(0.93)	(0.27)	(0.21)	(0.69)	(0.56)	(0.03)	(0.94)	(0.15)	(0.85)	(0.15)	(0.30)	(0.28)	(0.32)	(0.22)
LGDPSQR				0.02	0.12	0.16	0.17	0.03	0.27	0.01	0.22	0.01	0.16	0.06	0.07	0.04	0.19
				(0.64)	(0.31)	(0.10)	(0.67)	(0.23)	(0.03)	(0.82)	(0.17)	(0.88)	(0.17)	(0.25)	(0.30)	(0.21)	(0.24)
BOND						−0.48	−0.32										
						(0.09)	(0.05)										
GOVERNMENT								−0.01	−0.04								
								(0.01)	(0.00)								
REVOLUTION										0.34	−0.06						
										(0.18)	(0.49)						
CONCENTRA- TION												−0.16	−0.46				
												(0.52)	(0.01)				
MARKET														0.35	0.72		
														(0.02)	(0.01)		
BLACKMAR- KET																−0.84	−0.14
																(0.00)	(0.58)
R^2 (%)	51	59	54	56	54	63	46	72	65	62	49	52	60	68	66	80	49
# of observations	46	18	28	18	28	9	20	15	25	14	25	18	28	18	28	15	25

Panel B – Chow test results (p-values): Common-law vs. civil-law

	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
All variables	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Creditor	<0.01	<0.01	0.49	<0.01	0.11	<0.01	0.03	<0.01

Panel A – Parameter estimates

Legal tradition	[23] Common	[23] Civil	[24] Common	[24] Civil	[25] Common	[25] Civil	[26] Common	[26] Civil	[27] Common	[27] Civil	[28]	[29]	[30]	[31]	[32]	[33]	[34]
														Civil			
INTERCEPT	−0.56	12.68	−1.17	22.43	−0.04	21.90	−1.57	10.12	−2.53	10.68	15.26	13.82	14.98	15.46	8.32	16.27	13.78
	(0.76)	(0.34)	(0.55)	(0.11)	(0.98)	(0.06)	(0.40)	(0.16)	(0.11)	(0.17)	(0.00)	(0.08)	(0.01)	(0.01)	(0.66)	(0.01)	(0.02)
CREDITOR	0.14	−0.01	0.10	0.02	0.08	0.04	0.11	−0.02	0.12	−0.01	−0.08	−0.07	−0.09	−0.08	−0.05	−0.07	−0.09
	(0.00)	(0.88)	(0.01)	(0.69)	(0.03)	(0.44)	(0.00)	(0.65)	(0.00)	(0.83)	(0.02)	(0.07)	(0.03)	(0.07)	(0.56)	(0.08)	(0.05)
ENFORCE	−0.01	0.12	0.02	0.12	0.01	0.14	0.02	0.14	0.05	0.15	0.14	0.12	0.14	0.14	0.14	0.16	0.15
	(0.73)	(0.00)	(0.29)	(0.01)	(0.51)	(0.00)	(0.38)	(0.00)	(0.07)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LGDPCAP	0.02	−2.96	0.19	−5.25	−0.07	−5.06	0.29	−2.54	0.48	−2.45	−3.69	−3.36	−3.62	−3.67	−2.20	−3.87	−3.37
	(0.96)	(0.35)	(0.71)	(0.11)	(0.90)	(0.06)	(0.55)	(0.15)	(0.21)	(0.19)	(0.00)	(0.07)	(0.01)	(0.01)	(0.61)	(0.01)	(0.02)
LGDPSQR	0.01	0.17	0.00	0.31	0.02	0.29	−0.01	0.15	−0.02	0.13	0.21	0.19	0.20	0.21	0.13	0.22	0.19
	(0.67)	(0.37)	(0.97)	(0.12)	(0.62)	(0.07)	(0.78)	(0.17)	(0.35)	(0.24)	(0.00)	(0.07)	(0.01)	(0.01)	(0.60)	(0.01)	(0.02)
INFLATION	−0.80	−0.18												−0.02			
	(0.01)	(0.34)												(0.90)			
SCHOOL			−0.06	−0.25										0.04			
			(0.44)	(0.17)										(0.72)			
BUREAU					−0.04	−0.01											
					(0.01)	(0.45)											
SUPERVISE							0.01	0.38									
							(0.97)	(0.30)									
RESTRICTION									0.07	−0.10				−0.05			
									(0.07)	(0.18)				(0.32)			
BOND														−0.13			
														(0.34)			
GOVERNMENT																−0.02	
																(0.03)	
REVOLUTION																	0.11
																	(0.20)
French											0.24	0.24	0.25	0.21	0.25	0.13	0.24
											(0.01)	(0.02)	(0.03)	(0.02)	(0.03)	(0.19)	(0.02)
GERMAN											0.56	0.55	0.57	0.53	0.53	0.45	0.57
											(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Adj. R^2 (%)	66	49	58	51	75	47	62	56	74	56	83	79	80	82	74	83	79
# of observations	14	25	14	25	13	24	14	25	15	25	28	25	25	25	20	25	25

Panel B – Chow test results (p-values): Common-law vs. civil-law

	[23]	[24]	[25]	[26]	[27]
All variables	<0.01	0.02	<0.01	0.02	<0.01
Creditor	<0.01	0.15	0.45	0.02	<0.01

Note: Heteroscedasticity-consistent *p*-values are in parenthesis.
[a] Also see [32].

common-law countries, the economic importance of creditor rights is much more significant than predicted earlier. A one standard deviation increase in CREDITOR (0.85) in common-law countries creates an increase of 0.18 in the BANK variable, which is about 39% of the mean value of BANK in common-law economies.

As predicted, creditor rights do not seem to play a significant role among the civil-law countries ([15]). A one standard deviation increase in CREDITOR (0.98) creates a statistically insignificant *decline* of 0.01 in the BANK variable.

Although we expected to see an economically less significant effect in the civil-law sample, the insignificant effect of CREDITOR is quite surprising. Therefore, I subject this result to more rigorous robustness checks than the stock market results. In regressions [16]–[34], I include various social, political and economic factors; yet, the big picture remains the same. When I control for the variations in the judicial decision-making traditions within the civil-law system (regressions [28] through [34]), CREDITOR has a much more pronounced *negative* impact on bank development than what earlier results suggest.

These findings suggest the overall effect of creditor rights on the development of civil-law banking systems is negative. However, because the German civil-law countries have larger banking systems and better-protected creditor rights than the other civil-law countries, the negative effect is masked in the earlier analysis ([15]–[27]). Once this factor is incorporated into the model, the positive effect of creditor protection entirely disappears from the civil-law sample.

Finally, in [27], regulatory restrictions on universal banking activities (RESTRICTION; see Table 1 for its description) have a significant positive impact on bank development in the common-law system. Their effect is negative on civil-law banks and the difference between the two systems is significant. [6] In other words, civil-law banking systems are negatively affected from restrictions on banking activities while the common-law banks surprisingly benefit from restrictive regulation. [7] The intuition is straightforward. When the constraints imposed on courts by the legal tradition are so severe that banks have to use their services as a carrot-and-stick to keep their borrowers honest, putting restrictions on universal banking activities reduces banks' ability to penalize fraudulent borrowers and, therefore, hinders bank development. Because common-law banks' contract enforcement responsibilities are not as crucial as those of civil-law banks, we do not observe the same negative effect in common-law countries.

5. Concluding remarks

This paper makes one important point: Legal tradition has a significant effect on whether a country's financial system is bank- or market-oriented. This argument

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[6] Additional robustness checks are available upon request.
[7] Barth et al. (2001a) find that regulatory restrictions do not have any significant effect on bank development. The reason they obtain this result is that the negative effect in the civil-law sample cancels out the positive effect in the common-law sample.

goes beyond the traditional view in the literature that countries with poorly drafted laws will have bank-oriented systems. For historical reasons, civil-law courts are less willing to interpret the laws and create new rules relative to their common-law counterparts. Therefore, they are less likely to reach a fair decision when contracts are breached in a manner that is not described in the laws of the country. In an environment where individual investors do not wish to lend in the absence of court protection due to the risk of fraudulent action by the firm, banks are still willing to lend because they can influence firms' behavior by threatening to withhold the services that only banks can provide. This leads to bank-oriented financial systems in civil-law countries.

This argument leads to two testable hypotheses. First, civil-law financial systems are more bank-oriented than common-law systems. Second, because common-law courts enforce laws and regulations effectively, improvements in shareholder and creditor rights boost stock market and bank development more in common-law countries than in civil-law countries. The evidence provided in the paper supports both hypotheses.

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