

Legal Origin, Creditors' Rights and Bank Risk-Taking

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Cole-Turk:
Legal Origin, Creditors' Rights and Bank Risk-Taking

Summary

- In this study, we extend “the law-and-finance” literature by using firm-level data from banks in 113 developing and 35 developed countries to analyze how individual lenders respond to country-level differences in legal origin and creditor protection.
- Following LLSV (1998) and DMS (2007), we distinguish between creditors’ rights and efficiency of enforcement.
- Our analysis rests on a panel data set of 2,677 commercial banks from 148 countries over the period 2000-2006.

Summary

- Using a random-effects model that controls for bank heterogeneity, we find that lenders allocate a significantly higher portion of their assets to loans:
 - (i) when they enjoy English common-law legal origin rather than French civil-law legal origin;
 - (ii) when creditors' rights are weaker;
 - (iii) when their banks are larger; and
 - (iv) when the largest shareholder has a lower percentage ownership.

Summary

- Our primary contribution to the literature is new evidence from bank-level data of a bank-lending channel by which better legal protection, especially in developing countries, leads to more credit and, consequently, to better financial-sector development.
 - With better judicial enforcement, bankers increase the portion of their asset portfolios allocated to loans.
 - In aggregate, this should lead to higher levels of private sector credit, which the “finance and growth” literature has shown to be positively related to economic growth.

Summary

- We also contribute to the growing literature on the relation between investor protection and corporate risk-taking (John, Litov and Yeung (2008); Laeven and Levine (2008); Acharya, Amihud and Litov (2010); and Houston *et al.* (2010)).
- Here, we provide new firm-level evidence that banking firms take on more risk when their interests are better protected by the judiciary.

Background: Law, Finance and Growth

- Our study is based upon the “law and finance” literature as well as the “finance and growth literature.”
- We expect that a bank will allocate more of its asset portfolio to loans when it enjoys better legal protection and more efficient enforcement of contracts.
- Greater bank lending should lead to higher economic growth.

Background: “Law and Finance”

- “Law and Finance” literature: essentially begins with LLSV (1998 JPE) article “Law and Finance”
- Premise: English common law provides superior protection to investors and creditors as compared to civil law, especially French civil law.
- Finding: Countries with English legal origin enjoy better developed capital markets than do countries of other legal origins.
- Others have challenged LLSV: is it legal origin or is it simply English culture/heritage?

Background: “Law and Finance”

- LLSV make important distinctions between:
 - Investor protection and creditor protection
 - You can protect equity holders at the expense of debt holders, and visa versa.
 - Legal rights and legal enforcement.
 - You can have strong laws but they provide little protection without enforcement.

Background: “Law and Finance”

- Beck, Demirguc-Kunt and Levine (2003 JFE) “Law, Endowments and Finance.”
- Financial development as measured by the amount of private-sector credit (scaled by GDP) is greater in countries of English legal origin than in countries of French legal origin.

Background: “Law and Finance”

- Djankov *et al.* (2003 QJE) “Courts”:
- Develop measures of enforcement efficiency
 - How long does it take to collect on a bounced check?
 - 60 days in New Zealand, 645 days in Italy
 - How long does it take to evict a delinquent tenant?
 - 49 days in U.S., 660 days in Bulgaria
- Findings:
 - Efficiency is greater in countries of English legal origin.
 - Efficiency is associated with higher survey measures of the quality of justice in a country.

Background: “Law and Finance”

- Djankov, McLiesh and Shleifer (2007 JFE)
“Private Credit”:
 - Revise and expand the earlier measure of legal enforcement:
 - How long does it take to collect on a debt equal to half of a country’s GDP per capita?
 - Find that private sector credit (scaled by GDP) is higher in countries with stronger creditor’s rights and more efficient enforcement in developed, but not developing, countries.

Background: “Law and Finance”

- Qian and Strahan (2007 JF):
- Examine how creditors’ rights and enforcement efficiency (as measured by collecting on a bounced check) affect terms of loan contracts (amount granted, rate, maturity) in 43 countries.
- Findings:
 - better legal protection of creditor rights is associated with better terms of credit.
 - More efficient enforcement is associated with better terms of credit.

Background: “Law and Finance”

- John, Litov and Yeung (2008 JF)
“Corporate Governance and Risk-Taking”:
- Examine how differences in governance impact risk-taking and growth of industrial companies in 38 countries from 1992-2002.
- Find that companies that enjoy better legal protection take on more risk, and that firms taking on more risk grow faster.

Background: “Law and Finance”

- Acharya, Amihud and Litov (2010 JFE)
“Creditor Rights and Corporate Risk-Taking”:
 - Propose a “dark side” to strong creditors rights: they induce firms to engage in risk-reducing investments
 - Shareholders want to avoid inefficient liquidation of assets.
 - Managers want to preserve their private benefits of control.
 - Finding: firms in countries with strong creditors rights engage in more diversifying mergers, reduce operating risk as measured by Std. Dev. of ROA

Background: “Finance and Growth”

- Levine (1999 JFI)
- Financial Institutions are better developed in countries with better legal protection
- Portion of Financial Institution development (private sector credit scaled by GDP) explained by legal protection is positively related to economic growth.

Research Question

- At the firm level, rather than at the country level, how do lenders respond to differences in governance regimes? (With exception of Qian and Strahan, all of these previous studies are at the country level rather than at the firm level)
- Specifically, how do banks respond to differences in legal origin, creditors rights, and efficiency of contract enforcement?

Primary Hypotheses

- Our primary hypotheses focus on how legal origin and creditor protection affect bank lending.
- Consistent with the “law-and-finance” literature and the “power” theory of credit, we hypothesize that the loan-to-asset ratio of a bank is a function of its country’s legal tradition and how well that country’s legal and judicial systems protect creditors.
- We expect credit from financial intermediaries as a share of assets to be higher in countries of English common law legal origin and lower in countries of French civil law legal origin.
- Also, better creditor protection in the form of stronger legal rights or more efficient judicial enforcement has the effect of reducing the expected loss rate on the bad-loan portfolio, which should lead to a higher loan-to-asset ratio.

Primary Hypotheses

- Acharya, Amihud and Litov (2010) offer an alternative hypothesis, which they refer to as the “dark side” of creditors’ rights. They focus on the incentives of the borrower rather than those of the lender.
- When creditors have stronger rights, the management and controlling shareholder of a debtor firm have incentives to reduce operating risk so that they reduce the probability that they will lose their private benefits of control.
- If this hypothesis is true, then stronger creditors’ rights should lead firms to borrow less, so that the lenders’ loan-to-asset ratios would be inversely related to creditors’ rights.

Other Hypotheses

- We have six secondary hypotheses.
- First, We expect that banks with less diversified controlling shareholders will take on less risk so that the ownership of the largest shareholder should be inversely related to bank risk.
- In contrast, dominant shareholders controlling a pyramid of firms may be able to instruct lower-layer units to take on more risk in a tunneling process (John, Litov and Yeung (2008)).

Other Hypotheses

- Second, in countries where the size of the government is large relative to the economy, the presence of government-related officials is likely to be widespread in different economic activities.
- We expect that banks in countries with larger government sectors will have higher ratios of loans to assets as bureaucrats direct policy loans to State-owned enterprises.
- Our (inverse) measure of government size is the ratio of private credit to total domestic credit and we expect this ratio to be negatively related to the loan-to-asset ratio.

Other Hypotheses

- Third, large banks that have access to large pools of deposits and money market funding are able to make more loans as compared to their smaller competitors.
- In addition, large banks are likely to be more diversified than small banks.
- For both reasons, we expect bank risk to increase with bank size so that the loan-to-asset ratio will be positively related to bank size, which we measure by the natural logarithm of bank assets.

Other Hypotheses

- Fourth, government-owned or controlled banks may play a key role in shaping the risk profile of domestic institutions.
- When the State is the controlling shareholder in a bank, credit is often directed toward select key industries without major regard to profitability (LLSV 2002).
- Consequently, we expect that State-controlled banks will have higher loan-to-asset ratios as the State has incentive to direct assets towards policy loans.

Other Hypotheses

- Fifth, foreign-controlled banks often operate to collect funds for the home office and to serve multinational customers who operate in a country.
- Consequently, we expect foreign-controlled banks to have lower loan-to-asset ratios.
- Finally, banks that operate in countries with higher income per capita face stronger loan demand from borrowers.
- Therefore, we expected a positive relation between our measure of economic development (the natural logarithm of GDP per capita) and the loan-to-asset ratio.

Data

- Bank-level data over the period 2000-2006,
 - 12,889 bank-year observations on 2,677 banks located in 145 countries from 9 world regions.
(*Source: BankScope*).
 - Financials:
 - *Total Assets, Total Loans*
 - Ownership:
 - Percentage controlling ownership
 - Type of controlling owner
(*Domestic Private, Foreign Private, State*)

Data

- *Legal Origin*: Identifies the legal origin of the company law or commercial code of each country (*English, French, Germanic, Scandinavian, Socialist*).
(*Source: Djankov et al. 2007*).
- *GDP per capita*: commonly used as a control of the level of economic development in a country.
(*Source: IFS*).
- *Private credit to total credit*: inverse proxy for government size in the economy.
(*Source: IFS*)

Data

- *Creditors' Rights* : Index is based upon four separate rights (Source: *Djankov et al. 2007*, but first used on a smaller set of countries by *LLSV 1998*):
 1. Existence of restrictions, such as creditor consent, when a debtor files for reorganization.
 2. Ability to secured creditors to seize collateral after a reorganization petition is approved (no automatic stay on ability to seize collateral).
 3. Secured creditors are paid first out of the proceeds of liquidating a bankrupt firm.
 4. Responsibility for running the business during the reorganization falls upon an administrator, and not management, i.e., management is *replaced*.

Data

- *Legal Formalism*: An estimate of the number of days necessary to collect an unpaid debt equal to 50% of the country's GDP per capita.
Source: *Djankov et al. 2007*.
 - Higher values indicate greater “procedural formalism” and greater inefficiency in judicial enforcement.
 - Conversely, lower values indicate greater judicial efficiency.

Methodology

- We merge all data sets together and:
 - calculate univariate statistics
 - conduct random-effects regressions.
 - As pointed out by LLSV, we cannot conduct fixed-effects regressions because legal origin and creditors' rights are constant across our time series.

Multivariate Regressions

$$Y_{i,t} = \beta X_j + \delta C_j + \eta Z_{j,t} + \varepsilon_{i,t}$$

- $Y_{i,t}$ measures bank risk-taking (total loans to total assets), financial risk (total equity to total assets), or profitability (net income to total assets or to total equity) for bank i during year t ;
- X_j are dummy variables describing the legal origin of country j ;
- C_j are structural/governance variables for country j ;
- $Z_{j,t}$ are controls for the level of economic development for country j ;
- $\varepsilon_{i,t}$ is a random error term for bank i during year t .

Multivariate Regressions

- We run three sets of regressions:
 - All Countries
 - Developed Countries only
 - Developing Countries only
- For each set of regressions, we run five models:
 - Legal Origin, Legal Formalism and GDP
 - Add Creditors' Rights
 - Replace Creditors' Rights with four Components
 - Add Ownership
 - Add Private Credit to Total Credit

Random-Effects Regression: All Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|------------------------------------|---------|----------------------|----------------------|-----------------------|----------------------|
| French Legal Origin | -0.0494 | -0.0728 | -0.0645 (0.0361)* | -0.0587 (0.0309)* | -0.0603 (0.0343)* |
| Socialist Legal Origin | 0.0457 | 0.0392 | 0.0235 | 0.0663 (0.0232)*** | 0.0629 |
| German Legal Origin | -0.0523 | -0.0528 | -0.0603 | -0.0365 (0.0295) | -0.038 |
| Scandinavian Legal Origin | -0.012 | -0.0068 | -0.0067 | 0.0217 (0.0416) | 0.0216 |
| Legal Formalism | 0.0102 | 0.0158 | 0.0169 | 0.0202 (0.0130) | 0.0167 |
| CR- Creditors Rights | | -0.0232 (0.0141)* | | | |
| CR1- Restrictions on filing reorg. | | | -0.0326 | -0.0408 (0.0205)** | -0.0388 (0.0228)* |
| CR2- Right to seize collateral | | | -0.0638 | -0.0446 (0.0252)* | -0.0416 |
| CR3- Right to be paid first | | | -0.0067 | -0.0179 (0.0238) | -0.0181 |
| CR4- Right to run during reorg. | | | 0.0183 | 0.0126 (0.0202) | 0.0114 |
| Number of Observations | 12,874 | 12,874 | 12,874 | 12,874 | 12,067 |
| Number of Banks | 2,499 | 2,499 | 2,499 | 2,499 | 2,351 |

Random-Effects Regression: All Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| In (Total Assets) | | | | 0.0223 (0.0043) ^{***} | 0.0221 (0.0045) ^{***} |
| Largest Shareholder | | | | -0.0425 (0.0177) ^{**} | -0.0436 (0.0193) ^{**} |
| Largest Shareholder is State/ Public | | | | -0.0217 (0.0205) | -0.0319 (0.0212) |
| Largest Shareholder is Foreign | | | | -0.0132 (0.0111) | -0.0178 (0.0110) |
| Private Credit to Total Credit | | | | | -0.0001 (0.0003) |
| In (GDP per capita) | 0.0444 (0.0085) ^{***} | 0.0451 (0.0085) ^{***} | 0.045 (0.0086) ^{***} | 0.0273 (0.0090) ^{***} | 0.0237 (0.0095) ^{**} |
| Constant | 0.0748 (0.1366) | 0.0907 (0.1346) | 0.0699 (0.1364) | -0.0702 (0.1187) | -0.014 (0.1233) |
| Number of Observations | 12,874 | 12,874 | 12,874 | 12,874 | 12,067 |
| Number of Banks | 2,499 | 2,499 | 2,499 | 2,499 | 2,351 |

Random-Effects Regression: Developed Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|------------------------------------|---------|---------|---------------------|----------------------|------------------------|
| French Legal Origin | -0.0139 | -0.0283 | -0.1473 | -0.1169 (0.0627)* | -0.1195 (0.0630)* |
| Socialist Legal Origin | | | | | |
| German Legal Origin | -0.0031 | -0.0048 | -0.0176 | -0.0013 | 0.0023 (0.0483) |
| Scandinavian Legal Origin | 0.0633 | 0.0644 | 0.0521 | 0.0794 | 0.071 (0.0589) |
| Legal Formalism | 0.0000 | 0.0037 | -0.0027 | 0.0168 | 0.0143 (0.0154) |
| CR- Creditors Rights | | -0.0116 | | | |
| CR1- Restrictions on filing reorg. | | | -0.0368 | -0.0498 | -0.0495 (0.0412) |
| CR2- Right to seize collateral | | | -0.0498 | -0.0063 | -0.0181 (0.0245) |
| CR3- Right to be paid first | | | -0.1424 | -0.1211 | -0.1212 (0.0462)*** |
| CR4- Right to run during reorg. | | | 0.0640 (0.0340)* | 0.0025 | 0.0094 (0.0272) |
| Number of Observations | 5,488 | 5,488 | 5,488 | 5,488 | 5,477 |
| Number of Banks | 1,027 | 1,027 | 1,027 | 1,027 | 1,026 |

Random-Effects Regression: Developed Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|--------------------------------|---------|---------|---------|------------------------|------------------------|
| Ln (Total Assets) | | | | 0.0283 (0.0073)*** | 0.0282 (0.0074)*** |
| Largest Shareholder | | | | -0.0065 (0.0274) | -0.0082 (0.0280) |
| Largest Shareholder is State/ | | | | 0.0064 (0.0701) | 0.0007 (0.0716) |
| Largest Shareholder is Foreign | | | | -0.0445 (0.0159)*** | -0.0465 (0.0157)*** |
| Private Credit to Total Credit | | | | | 0.0658 (0.0304)** |
| Ln (GDP per capita) | 0.0134 | 0.013 | 0.0132 | -0.0133 (0.0180) | -0.0151 (0.0178) |
| Constant | 0.3753 | 0.3886 | 0.5369 | 0.3088 (0.2132) | 0.2892 (0.2108) |
| Number of Observations | 5,488 | 5,488 | 5,488 | 5,488 | 5,477 |
| Number of Banks | 1,027 | 1,027 | 1,027 | 1,027 | 1,026 |

Random-Effects Regression: Developing Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---------------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| French Legal Origin | -0.068 (0.0339)** | -0.098 (0.0360)*** | -0.0875 (0.0336)*** | -0.0738 (0.0315)** | -0.068 (0.0337)** |
| Socialist Legal Origin | -0.0212 (0.0342) | -0.0291 (0.0347) | -0.0396 (0.0320) | -0.0072 (0.0303) | -0.0144 (0.0341) |
| German Legal Origin | -0.0638 (0.0404) | -0.0645 (0.0380)* | -0.0863 (0.0404)** | -0.0691 (0.0336)** | -0.0433 (0.0295) |
| Legal Formalism | -0.0537 (0.0272)** | -0.0506 (0.0232)** | -0.0536 (0.0214)** | -0.0486 (0.0203)** | -0.0643 (0.0201)*** |
| CR- Creditors Rights | | -0.0338 (0.0149)** | | | |
| CR1- Restrictions on filing for | | | -0.0466 (0.0272)* | -0.0522 (0.0260)** | -0.0407 (0.0270) |
| CR2- Right to seize collateral | | | -0.0933 (0.0306)*** | -0.0808 (0.0295)*** | -0.0783 (0.0294)*** |
| CR3- Right to be paid first | | | 0.0171 (0.0275) | 0.0115 (0.0257) | 0.0155 (0.0283) |
| CR4- Right to run a firm during | | | -0.0032 (0.0268) | 0.0113 (0.0252) | 0.0151 (0.0267) |
| Number of Observations | 7,386 | 7,386 | 7,386 | 7,386 | 6,590 |
| Number of Banks | 1,472 | 1,472 | 1,472 | 1,472 | 1,325 |

Random-Effects Regression: Developing Countries

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|
| In (Total Assets) | | | | 0.0139 (0.0052) ^{***} | 0.0127 (0.0055) ^{**} |
| Largest Shareholder | | | | -0.0481 (0.0162) ^{***} | -0.0461 (0.0176) ^{***} |
| Largest Shareholder is State/ Public | | | | -0.0298 (0.0190) | -0.043 (0.0185) ^{**} |
| Largest Shareholder is Foreign | | | | 0.0045 (0.0133) | 0.0024 (0.0143) |
| Private Credit to Total Credit | | | | | -0.0001 (0.0003) |
| In (GDP per capita) | 0.0608 (0.0090) ^{***} | 0.0622 (0.0088) ^{***} | 0.0652 (0.0082) ^{***} | 0.0524 (0.0086) ^{***} | 0.0488 (0.0096) ^{***} |
| Constant | 0.3805 (0.1791) ^{**} | 0.4279 (0.1585) ^{***} | 0.4033 (0.1457) ^{***} | 0.2992 (0.1504) ^{**} | 0.4247 (0.1481) ^{***} |
| Number of Observations | 7,386 | 7,386 | 7,386 | 7,386 | 6,590 |
| Number of Banks | 1,472 | 1,472 | 1,472 | 1,472 | 1,325 |

Robustness Tests

- We run a number of additional regressions with additional control variables to test the robustness of our results.
 - Country-level governance and regulatory variables.
 - Credit registry indicators
 - GDP.
- None qualitatively affect our findings.

Conclusions

- In this article, we extend the law-and-finance literature by using bank-level data from 35 developed and 113 developing countries to analyze how bank lending behavior responds to differences in legal origin and creditor protection.
- Using a random-effects model that controls for bank heterogeneity, we find that bankers allocate a significantly higher portion of their assets to loans:
 - (i) when they enjoy English common law legal origin rather than French civil law legal origin;
 - (ii) when creditors' rights are weaker;
 - (iii) when their banks are larger; and
 - (iv) when the largest shareholder has a lower percentage ownership.

Conclusions

- We also find that bankers in developing countries, but not in developed countries, allocate a significantly larger portion of their assets to risky loans when legal enforcement of creditor rights is more efficient.
- These results strongly support the theory of legal origin but provide only mixed support for the “power” theories of credit.

Conclusions

- Our finding that banks make fewer loans when creditors' rights are stronger is supportive of a "dark side" to creditors' rights, as proposed by Acharya, Amihud and Litov (2010), but it contradicts the results reported by Houston *et al.* (2010), who find that stronger creditor rights are associated with greater bank risk-taking.
- Our opposing findings regarding the effects of creditors' rights and the effects of judicial enforcement also highlight the importance of distinguishing between strong legal rights and efficient judicial enforcement of those rights, as pointed out by LLSV (1998).
- We do not address how the financial crisis that began in 2007 affected bank lending; we leave that most interesting topic to future research.

Conclusions

- In summary, our results provide new evidence on the importance of legal origin and creditor protection to the provision of bank credit, which has implications for financial sector development and economic growth.
- Researchers in the “finance and growth” literature have established that better financial sector development as measured by aggregate domestic private credit leads to higher levels of economic growth.
- We extend the literature by documenting one channel through which creditor protection leads to financial sector development. With better creditor protection, bankers increase the portion of their assets allocated to loans.
- In aggregate, this should lead to higher levels of private-sector credit, which the “finance and growth” literature has shown to be positively related to economic growth.