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Banking Market Integration in Europe and Insolvency Law

Economic Governance and EMU Scrutiny Unit (EGOV)
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Banking Market Integration in Europe and Insolvency Law

Abstract

Despite considerable progress towards a Banking Union in the euro area, banks in the EU continue to be subject to widely varying insolvency law as applied to their lending customers. This paper provides evidence that bank interest margins tend to be higher in countries with weaker loan enforcement. Higher bank interest margins are a sign of less efficient bank intermediation, and hence the evidence of this paper suggests that bank intermediation is less efficient in countries with weaker loan enforcement. This policy-induced national variability in bank efficiency is incompatible with banking union.

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LIST OF ABBREVIATIONS

AdjNIM	Adjusted Net Interest Margin
EBA	European Banking Authority
ECB	European Central Bank
EU	European Union
GDP	Gross Domestic Product
NIM	Net Interest Margin
NPL	Nonperforming Loan
OECD	Organization for Economic Cooperation and Development

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EXECUTIVE SUMMARY

In the last decade, considerable progress towards a Banking Union in the euro area has been made. European banks are subject to a common rule book, for instance, in the area of capital regulation. Since November 2014, euro area banks are subject to the Single Supervisory Mechanism, with significant institutions directly supervised by the European Central Bank. In 2014, in addition, the Single Resolution Mechanism was established, providing a common framework for bank resolution that applies to large and international banks. Harmonized bank regulation and supervision are necessary to bring about banking market integration, but they are not sufficient as long as there remain important national differences in other policy areas, such as taxation and legal systems.

Importantly, European banks continue to be subject to widely varying national insolvency regimes that give rise to varying loan enforcement efficiency across the European Union. As evidence of this, a survey of banks conducted by the European Banking Authority revealed that banks experience widely varying recovery proceeds and times to recovery following loan defaults by their lending customers. This hampers banking market integration, as it will result in higher interest rates for borrowers in countries with less efficient loan enforcement. Depositors could be affected as well if banks pass on part of loan enforcement costs to their depositors in the form of lower deposit interest rates.

Using data on European banks during 2020-2023, this paper examines how variation in average lending and borrowing interest rates of banks, and implicitly bank interest margins, reflect national variation in loan enforcement efficiency. We find that bank interest margins are larger in countries with weaker loan enforcement, measured by a lower loan recovery rate or a greater time to enforce contracts. The average net interest margin is a useful index of bank inefficiency, as a greater net interest margin suggests that banks perform their intermediation task between the suppliers and users of bank funds less efficiently. Thus, our evidence suggests that bank intermediation is less efficient in countries with weaker loan enforcement. Varying bank efficiency across the European Union – certainly if it is policy-induced – is incompatible with the banking market union.

In 2022, the European Commission published a proposal for a directive to harmonize certain aspects of insolvency law. Among its aims were a greater recovery of assets, improved efficiency of procedures, and fair distribution of recovered value among creditors. This legislative proposal is part of the Commission's drive to establish a Capital Markets Union, but it is obviously important for banking union as well. However, no agreement on this proposal has been reached so far. In anticipation of the next European legislative cycle, the European Council and the European Central Bank have reiterated this year the importance of a greater harmonization of corporate insolvency law. Progress towards harmonization of insolvency law towards a common efficient standard in the years to come could help to attenuate the barrier that loan enforcement variability in the EU presently constitutes to full banking market integration.

1. INTRODUCTION

In the last decade, considerable progress towards a Banking Union in the euro area has been made. European banks are subject to a common rule book, for instance, in the area of capital regulation. Since November 2014, euro area banks are subject to the Single Supervisory Mechanism, with significant institutions directly supervised by the European Central Bank (ECB). In 2014, in addition, the Single Resolution Mechanism was established, providing a common framework for bank resolution that applies to large and international banks. Harmonized bank regulation and supervision are necessary to bring about banking market integration, but they are not sufficient as long as there remain important national differences in other policy areas, such as taxation and legal systems. Importantly, European banks continue to be subject to widely varying national insolvency regimes that give rise to varying loan enforcement efficiency across the European Union (EU). This divergence implies that national banking markets continue to differ materially for banks and their customers.

A survey of banks conducted by the European Banking Authority (EBA, 2020) revealed that banks experience widely varying recovery proceeds and times to recovery following loan defaults by their lending customers. This hampers banking market integration, as it will result in higher interest rates for borrowers in countries with less efficient loan enforcement. Depositors could be affected as well if banks pass on part of loan enforcement costs to their depositors in the form of lower deposit interest rates. Alternatively, inefficient loan enforcement could lead to a higher cost of funds, including deposit interest rates, for banks, if banks that are subject to weaker loan enforcement are perceived to be riskier.[1]

Using data on European banks from 2020 to 2023, this paper examines how variation in average lending and borrowing interest rates of banks, and implicitly bank interest margins, reflects national variation in loan enforcement strength. We find that bank interest margins are larger in countries with weaker loan enforcement, measured by a lower loan recovery rate or a greater time to enforce contracts. The average net interest margin is a useful index of bank inefficiency, as a greater net interest margin suggests that banks perform their intermediation task between the suppliers and users of bank funds less efficiently. Thus, our evidence suggests that bank intermediation is less efficient in countries with weaker loan enforcement. Varying bank efficiency across the EU – certainly if it is policy-induced – is incompatible with the banking market union.

In 2022, the European Commission (2022b) published a proposal for a directive to harmonize certain aspects of insolvency law. Among its aims were a greater recovery of assets, improved efficiency of procedures, and fair distribution of recovered value among creditors. This legislative proposal is part of the Commission's drive to establish a Capital Markets Union, but it is obviously important for the banking union as well. No agreement on this proposal has been reached so far. In anticipation of the next European legislative cycle, the European Council (2024) and the European Central Bank (2024) have reiterated the importance of a greater harmonization of corporate insolvency law. Progress in the harmonization of insolvency law towards a common efficient standard in the years to come could help attenuate the barrier that loan enforcement variability in the EU presently constitutes to full banking market integration.

However, reaching an agreement on reforming insolvency law is politically difficult, as any change of bankruptcy law not only affects procedure but potentially also has significant redistributive implications for the parties in existing debtor-creditor relations. Specifically, any reform that improves

[1] Interest rates for large depositors could rise relatively more as they could more easily deposit abroad and are potentially not fully covered by deposit insurance.

loan enforcement could benefit creditors at the expense of debtors for the case of already existing loan contracts. Debtors in existing contracts could be harmed by increased insolvency law efficiency, as this may cause their creditors to attempt to recover value through insolvency procedures more frequently rather than to renegotiate the loan with the debtors. Conflicting interests between debtors and creditors in already concluded debt contracts make insolvency law reform difficult for individual countries. At the international level, there is the additional complication that some countries are net debtors while other countries are net creditors. Given such conflicting interests, a strong case for insolvency law reform must rest on significant efficiency gains from the reform in the case of new loans, which can be shared among creditors and debtors. For the debtor, the gain would come from a lower interest rate. This paper's evidence of varying bank efficiency due to uneven loan enforcement in the EU suggests that such gains can be realized.

Section 2 reviews some prior studies on the implications of insolvency law for the functioning of banking markets. In turn, it reviews studies that examine how insolvency law and creditor rights more generally affect the terms of new loans and how they influence banks' approach to nonperforming loans and weak borrowers. Section 3 provides empirical evidence on the relation between loan enforcement regimes and bank interest margins in the EU in the last few years. Section 4 relates this paper's evidence on how loan enforcement efficiency affects interest margins to the European Commission's proposal to harmonize certain aspects of insolvency law. Section 5 concludes.

2. LITERATURE REVIEW

Several studies have shown that variation in loan enforcement efficiency, and creditor rights more generally, affects loan terms at the time of loan origination, as reviewed in Section 2.1. In addition, several studies have examined how loan enforcement efficiency affects how banks account for loan impairment and deal with fragile lending customers after financial stress has materialized, as summarized in Section 2.2.

2.1. Effects at the time of loan origination

Qian and Strahan (2007) consider how an index of creditor rights affects credit terms of syndicated loans for borrowers located in 43 countries for the period 1994-2003. The index of credit rights, among other things, reflects whether secured creditors are ranked first in the distribution of proceeds, whether there are restrictions such as creditors' consent for going into reorganization, and whether the incumbent management does not stay in control during a reorganization. The authors find that stronger creditor rights give rise to lower loan spreads and a longer loan maturity, and they find that these effects are stronger for firms with a greater share of fixed assets.

Considering syndicated loan data for borrowers from 48 countries during the period 1994-2003, Bae and Goyal (2009) analyze how both creditor rights and enforceability of contracts affect credit terms in the syndicated loan market. Enforceability of contracts, among other things, reflects the existence of corruption. In this analysis, stronger creditor rights reduce interest spreads, but they do not seem to matter for loan maturity. Poor enforceability of contracts leads to higher interest spreads, shorter maturities, and smaller loan amounts.

Using data on EU member states from 2012 to 2020, the European Commission (2022a) considers the impact of insolvency regime measures from the World Bank's Doing Business survey on the interest rates on corporate loans (1 to 5 years maturity). They find that interest rates for corporates fall with the loan recovery rate and rise with the recovery time.

Examining bond interest yield spreads for a sample of firms in 10 EU countries and 2 Organization for Economic Cooperation and Development (OECD) countries during 2004-2015, a study by the Association for Financial Markets in Europe (2016) similarly finds a negative relation between the recovery rate based on the World Bank survey data and the corporate bond spread.

Overall, the cost of bank as well as bond finance has been shown to rise with measures of loan enforcement weakness.

2.2. Effects after financial stress has materialized

Using data from a set of OECD countries between 2003 and 2016, Consolo, Malfa, and Pierluigi (2018) examine how the loan insolvency regime affects nonperforming loan (NPL) resolution. They construct an insolvency framework index based on World Bank data on the strength of legal rights in getting credit, the cost of resolving insolvency, the cost of enforcing contracts, and the time of enforcing contracts. This study finds that countries with a better insolvency framework adjust their NPL levels more rapidly.[2] Specifically, better insolvency frameworks lead to faster NPL reductions and lower NPL increases during economic bad times.

[2] Menezes et al. (2021) review several studies that address how insolvency and credit/debtor rights regimes affect NPLs. In its communication on completing the Banking Union, the European Commission (2017) identified reform of restructuring, insolvency and debt recovery frameworks as an important part of a comprehensive approach to addressing NPLs.

In an environment of low and tardy loan recoveries, especially weak banks have an incentive to continue to provide credit to weak borrowers to avoid loan default and the resulting negative implications for bank capitalization. Consistent with this, using loan enforcement data from the EBA (2020) survey of EU banks and data for European firms during 2009-2019, Demirgüç-Kunt, Horváth and Huizinga (2023) find that firms experience greater debt growth if they are tied to lowly capitalized banks and at the same time located in a country with weak loan enforcement. Moreover, weak firms experience relatively greater debt growth during economic recessions if located in a country with weak loan enforcement. This finding suggests that banks provide additional credit to weak firms under these circumstances to avoid bankruptcies of fragile firms.[3]

Banks' tendency to continue to provide credit to fragile firms in countries with weak loan enforcement may stabilize these firms and the affected economies in the short run. However, such stabilization implies a misallocation of credit from creditworthy firms to uncreditworthy and possibly unproductive firms. Using data from 18 advanced countries over the past 150 years, Jordà, Kornejew, Schularick, and Taylor (2022) show that credit misallocation in an environment of weak loan enforcement can have macroeconomic costs, as they find that after corporate debt booms recessions are deeper and longer in countries with lower debt resolution efficiency.

[3] Firms face greater incentives to avoid insolvency if creditor rights in insolvency are stronger. Consistent with this, Acharya, Amihud, and Litov (2011) find that greater creditors rights cause firms to reduce cash-flow risk and to deleverage based on a sample of firms in 35 countries during 1992-2005.

3. EMPIRICAL EVIDENCE ON LOAN ENFORCEMENT EFFICIENCY AND BANK INTEREST MARGINS

In this section, we provide some evidence on how variation in loan enforcement efficiency across EU countries affects bank interest margins. Bank interest margins are constructed using accounting information on a bank's interest income and interest expense. We interpret a bank's interest margin as an index of bank inefficiency, as a greater interest margin, i.e., a greater wedge between a bank's average lending and borrowing interest rates, suggests that a bank performs its intermediation task between savers and investors less efficiently.[4]

3.1. Data on loan enforcement

We consider two indices of loan enforcement strength available from the World Bank's Doing Business survey: the net recovery rate that a bank receives and the time it takes to enforce contracts. The recovery rate is the amount recorded as cents on the dollar recovered by secured creditors through judicial reorganization, liquidation or debt enforcement in case of the default of a hypothetical company on a 10-year loan agreement with a domestic bank secured by a mortgage over the company's real estate property.[5] Time to enforce contracts is the time in years between the filing of a lawsuit in court and payment in case of a commercial dispute. Table 1 provides information on these two loan enforcement variables for individual EU countries for the year 2020, which is the last year for which the World Bank collected this information.[6] Loan enforcement efficiency is shown to vary widely in the EU. As seen in column 1 of Table 1, the recovery rate ranges from 32% in Greece to 90.1% in the Netherlands, with a mean of 62.4% for the EU27. In column 2, we see that Time to enforce contracts varies from 0.4 years in Ireland to 3.5 years in Greece, with a mean of 2 years.

[4] Demirgüç-Kunt and Huizinga (1999) provide empirical evidence on a range of determinants of bank interest margins for banks in 80 countries during 1988-1995, including measures of non-interest costs and of market concentration.

[5] To collect survey information on these variables, the World Bank presents survey respondents with the hypothetical loan default case of a hotel that is kept common across countries (Djankov, Hart, McLiesh, and Shleifer, 2008, pp. 1108-1112). The hypothetical company does not only owe money to a bank, but also to 50 suppliers, employees, and tax authorities. Further details about the case are available on the World Bank Doing Business Archive website at https://archive.doingbusiness.org/en/methodology/resolving-insolvency

[6] This database was discontinued in 2020 following data irregularities that are not related to the countries studied here. See the announcement of the World Bank at https://www.worldbank.org/en/news/statement/2021/09/16/world-bank-group-to-discontinue-doing-business-report.

Table 1: Loan enforcement efficiency in the EU in 2020

Country	Recovery rate (%) (1)	Time to enforce contracts (years) (2)
Austria	79.9	1.1
Belgium	89.4	0.9
Bulgaria	37.7	3.3
Croatia	35.2	3.1
Cyprus	73.8	1.5
Czech Republic	67.5	2.1
Denmark	88.5	1
Estonia	36.1	3
Finland	88	0.9
France	74.8	1.9
Germany	79.8	1.2
Greece	32	3.5
Hungary	44.2	2
Ireland	86.1	0.4
Italy	65.6	1.8
Latvia	41.4	1.5
Lithuania	40.3	2.3
Luxembourg	43.9	2
Malta	39.2	3
Netherlands	90.1	1.1
Poland	60.9	3
Portugal	64.8	3
Romania	34.4	3.3
Slovakia	46.1	4
Slovenia	90	0.8
Spain	77.5	1.5
Sweden	78.1	2
EU27	62.4	2

These data are from the World Bank Doing Business database for the year 2020.

3.2. Data on bank interest margins

We construct bank interest margins using information from bank income statements for a sample of commercial banks in the EU during 2020-2023. Bank-level information is taken from the Bank Focus database.[7] We examine two alternative measures of the bank interest margin. First, we construct the Net Interest Margin (NIM) as the difference between bank interest income and expense, divided by the average total earning assets at the beginning and end of the year as follows:

$$NIM = \frac{Interest\ income - Interest\ expense}{average\ Total\ earning\ assets}$$

This interest margin is relevant from the perspective of a bank's customers, in particular its loan and deposit customers (and other suppliers of interest-bearing funds).

[7] All bank-level variables are winsorized at 1% and 99%.

In addition to interest expenses, banks incur financial costs associated with their lending in the form of loan loss provisions. These provisions reflect anticipated future loan losses, and they are expected to be higher in environments of lower loan recoveries. We can construct a second net interest margin adjusted for loan loss provisioning, called adjNIM, as follows:

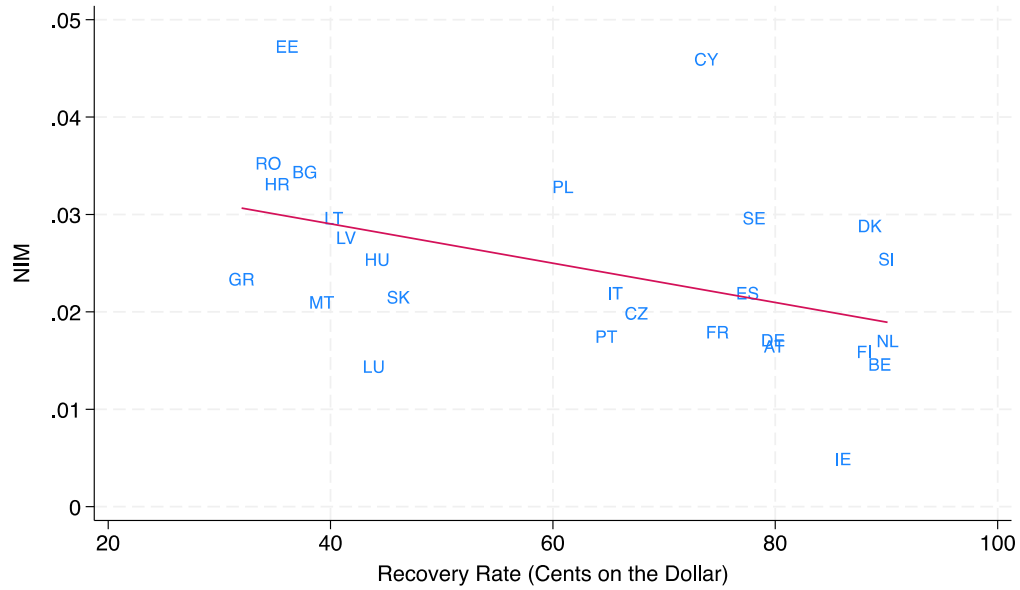
$$adjNIM = \frac{Interest\ income - Interest\ expense - LLP}{average\ Total\ earning\ assets}$$

where LLP is loan loss provisioning. This second interest margin is more relevant for banks, as it more accurately reflects the full financial costs of providing loans.

Figure 1 provides a scatter diagram of the average net interest margin, i.e., NIM, for commercial banks in the 2020-2023 period in each country and the national recovery rate in 2020. The figure displays a negative relation. Consistent with this, the country with the highest average NIM, Estonia, has a relatively low recovery rate, and the country with the lowest average NIM, Ireland, has a relatively high recovery rate. The negative relation in the figure potentially arises, as banks in countries with higher recovery rates can charge lower loan interest rates in anticipation of lower future loan losses. Figure 2 plots the adjusted NIM against the recovery rate, similarly displaying a negative relation. The negative relation in Figure 2 shows that banks achieve lower interest margins in countries with higher loan recovery rates even when the potentially lower loan interest rates and lower loan loss provisions are both accounted for. The negative relation in both figures could reflect an impact of the loan recovery rate on bank risk: banks subject to higher recovery rates could be perceived to be less risky, which results in a lower cost of equity capital and lower required interest margins.[8]

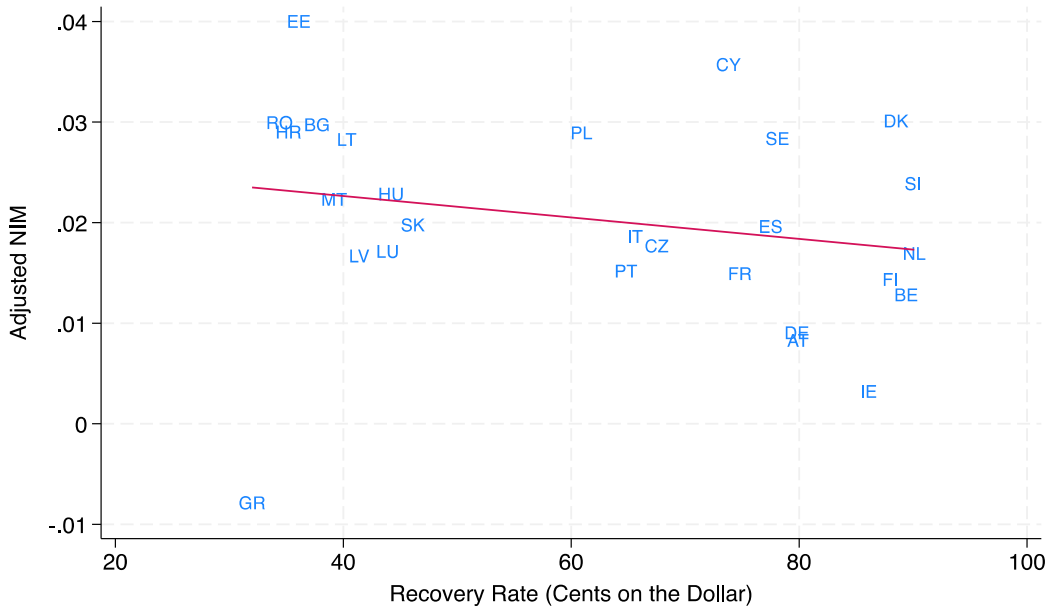
[8] Inefficient loan enforcement could lead to high bank losses especially during recessions. This could push up the average corporate tax rate over time in case of insufficient loss carry forward and backward, additionally requiring banks to increase net interest margins.

Figure 1: NIM and the recovery rate



Note: NIM is the average net interest margin per country during 2020-2023. The recovery rate is for 2020.

Figure 2: Adjusted NIM and the recovery rate

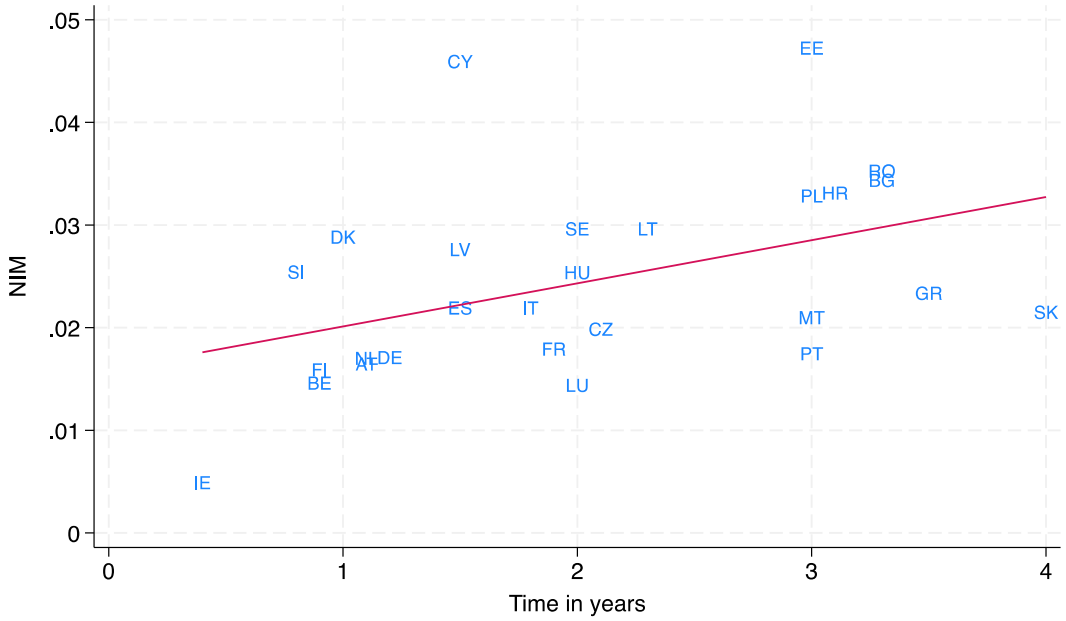


Note: Adjusted NIM is the average adjusted net interest margin per country during 2020-2023. The recovery rate is for 2020.

Figures 3 and 4 alternatively show the relations between NIM and adjNIM and time to enforce contracts. In both graphs, the plotted relations are positive. Thus, the average non-adjusted and adjusted net

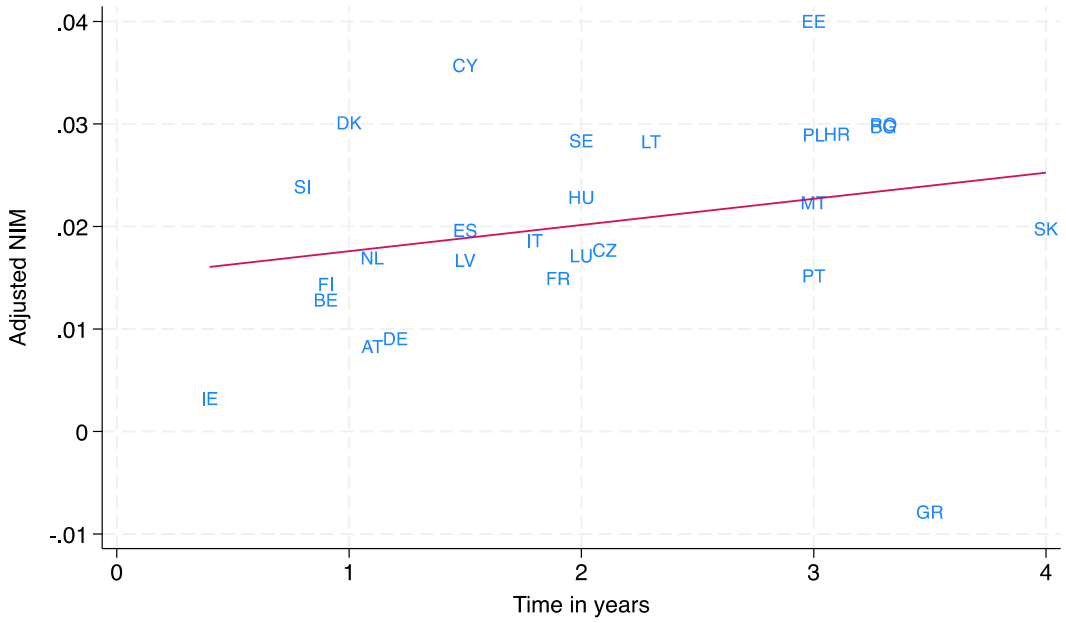
interest margins are shown to be higher for banks located in countries with slower contract enforcement, which suggests that banks perform their intermediation function less efficiently in countries with slower contract enforcement. A rationale could be that banks subject to slower contract enforcement are seen as riskier and, hence, face a higher cost of equity consistent with higher net interest margins.

Figure 3: NIM and the time to enforce contracts



Note: NIM is the average net interest margin per country during 2020-2023. Time to enforce contracts is for 2020.

Figure 4: Adjusted NIM and the time to enforce contracts



Note: Adjusted NIM is the average adjusted net interest margin per country during 2020-2023. Time to enforce contracts is for 2020.

3.3. Regression analysis

We next discuss the results of regressions, where we relate the interest margin variables and their constituent parts to the loan enforcement variables and a range of control variables. In case of the net interest margin, the regression specification is as follows:

$$NIM_i = \alpha + \beta Recovery\ rate/Time_c + \gamma Bank\ controls_i + \delta Macro\ controls_c + \varepsilon_i$$

where NIM_i is the net interest margin for bank i, and Recovery rate/$Time_c$ is either the recovery rate or the time to enforcement for country c. The dependent variables are bank-level averages for 2020-2023, while the independent variables are for 2020.[9] The regression includes several bank-level, market-level and macroeconomic control variables.

Among the bank-level control variables, the ratio of non-interest expense to total assets reflects bank cost efficiency, but also the type of services that a bank offers. Higher non-interest expenses are expected to lead to higher interest margins. Log of total assets is an index of bank size. Larger banks could achieve lower interest margins, if they focus on larger loan and deposit customers. The ratio of equity to total assets may vary positively with interest margins, as equity finance is not interest-bearing. Furthermore, the ratios of loans to total assets and liquid assets to total assets could explain higher and lower interest margins, respectively, if loans and liquid assets bear relatively higher or lower interest rates. As a loan market index, Top 3 bank concentration is the ratio of the loans provided by the top 3 lenders in a country to the loans made by all banks. A higher bank concentration could explain higher interest margins. As macroeconomic controls, we use the growth rate of Gross Domestic Product (GDP) per capita and the inflation rate. Higher GDP per capita growth and inflation could lead to higher interest margins, if loan interest rates respond more positively to these macroeconomic variables than deposit interest rates. Moreover, higher GDP per capita growth increases the adjusted net interest margin, if it leads to lower loan loss provisions. The sample consists of 643 commercial banks in 2020. Table A1 in the Annex provides summary statistics for this sample. In addition, Table A2 in the Annex gives information on the number of individual banks included in the sample per EU country. This number ranges from 3 for Ireland to 79 for France. Generally, countries with larger economies contribute more banks.

Table 2 shows the results. In regressions 1 and 2, NIM is significantly negatively related to the recovery rate and positively to the time to enforce contracts, consistent with Figures 1 and 3. In regression 1, among the controls NIM is positively and significantly related to the ratio of non-interest expense to total assets and the top 3 bank concentration variable, while it is negatively and significantly related to the log of total assets. Regressions 3 and 4 similarly show that adjNIM is significantly negatively and positively related to the recovery rate and time to enforce contracts as in Figures 2 and 4. Turning to the individual elements in the net interest margin expressions, we see that the ratio of interest income to average total earning assets is significantly negatively and positively related to the recovery rate and the time to enforcement in regressions 5 and 6, respectively. Thus, on average, banks charge higher lending interest rates in environments of lower loan enforcement efficiency. In regressions 7 and 8, the ratio of interest expense to total earning assets does not vary significantly with the recovery rate and the time to enforce contracts. This suggests that banks are not able to pass on any costs associated with inefficient loan enforcement to their depositors and other providers of funds. Finally, regressions 9 and 10 show that loan loss provisions relative to total earning assets are significantly negatively and positively related to the recovery rate and the time to enforce contracts. Weaker loan enforcement naturally gives rise to greater expected loan losses, and hence loan loss provisions. Estimated effects in

[9] By averaging the dependent variables over time, we mitigate the role of the disparate timing of loan loss provisions.

Table 1 generally are economically meaningful. In the case of regression 3, for instance, an increase in the recovery rate from the 25th percentile (Lithuania) to the 75th percentile (Austria), i.e., a 40% increase in recovery rate from Table 1, is estimated to cause a 0.5% reduction in adjusted NIM.[10]

Overall, the empirical evidence shows that bank interest margins are larger in countries with weaker loan enforcement, measured by a lower loan recovery rate and a greater time to enforce contracts. Higher net interest margins adjusted for loan loss provisions in countries with weaker loan enforcement imply that banks tend to realize higher earnings from traditional lending and borrowing activities in such circumstances, possibly as a compensation for greater perceived bank risk. Variation in bank interest margins (and their constituent parts) due to varying loan enforcement efficiency in the EU can be interpreted as evidence of incomplete banking market integration which is policy-induced and hence amenable to changes in policy.

[10] Note that ((0.799-0.403)*-0.013)=0.00515, amounting to 26% of the mean adjusted NIM. Analogously, regression 4 implies that an increase in time to enforce contracts from the 25th percentile (Austria) to the 75th percentile (Poland), i.e., a 1.9-year increase in time to enforce contracts, increases the adjusted NIM by (1.9*0.003)/0.020 equivalent to 29% of its mean.

Table 2: Regressions of net interest margins and related variables for commercial banks in 2020

Regression number	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	NIM		Adjusted NIM		Interest income over earning assets		Interest expense over earning assets		LLP over earning assets	
Recovery rate (ratio)	-0.015***		-0.013***		-0.020***		-0.003		-0.006***	
	(0.004)		(0.003)		(0.004)		(0.002)		(0.002)	
Time in years		0.004***		0.003***		0.004***		-0.001		0.001***
		(0.001)		(0.001)		(0.001)		(0.000)		(0.000)
Non-interest expense over total assets	0.074***	0.076***	0.041**	0.043**	0.114***	0.116***	0.030**	0.030**	0.023***	0.023***
	(0.025)	(0.025)	(0.019)	(0.019)	(0.030)	(0.030)	(0.014)	(0.014)	(0.009)	(0.009)
ln(Total assets)	-0.002***	-0.002***	-0.002***	-0.002***	-0.001**	-0.001*	0.001**	0.001**	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Equity over total assets	0.004	0.004	0.005	0.006	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.004)	(0.004)	(0.003)	(0.003)
Loans over total assets	-0.006	-0.005	-0.001	-0.001	-0.008	-0.007	-0.008	-0.009	-0.001	-0.001
	(0.012)	(0.012)	(0.009)	(0.009)	(0.015)	(0.015)	(0.007)	(0.007)	(0.004)	(0.004)
Liquid assets over total assets	-0.022*	-0.021*	-0.014	-0.013	-0.022	-0.021	-0.005	-0.006	-0.006	-0.005
	(0.012)	(0.012)	(0.009)	(0.009)	(0.015)	(0.015)	(0.008)	(0.008)	(0.004)	(0.004)
Top 3 bank concentration	0.012*	0.008	0.011**	0.007	0.013*	0.007	0.001	-0.001	0.003	0.002
	(0.006)	(0.006)	(0.005)	(0.005)	(0.007)	(0.007)	(0.003)	(0.003)	(0.003)	(0.003)
GDP per capita growth	0.015	0.038	0.025	0.043*	0.034	0.059	0.008	0.007	-0.002	0.005
	(0.032)	(0.033)	(0.025)	(0.026)	(0.038)	(0.039)	(0.018)	(0.018)	(0.011)	(0.011)
Inflation (CPI)	0.055	-0.054	0.101	0.018	0.078	-0.024	0.008	0.024	-0.047*	-0.082***
	(0.073)	(0.072)	(0.063)	(0.064)	(0.107)	(0.112)	(0.063)	(0.066)	(0.026)	(0.027)
Constant	0.060***	0.044***	0.049***	0.036***	0.062***	0.045**	0.009	0.009	0.011**	0.005
	(0.013)	(0.014)	(0.010)	(0.011)	(0.017)	(0.018)	(0.009)	(0.009)	(0.005)	(0.005)
Observations	643	643	631	631	647	647	646	646	637	637
R-squared	0.194	0.201	0.194	0.199	0.147	0.142	0.048	0.047	0.094	0.096
Sample	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27	EU27

Note: The sample consists of commercial banks in the EU27. The dependent variables are 2020-2023 averages, and the independent variables are for 2020. Robust standard errors are reported in parentheses. *, **, and *** denote significance at 10, 5, and 1 percent, respectively.

4. POLICY TO HARMONIZE INSOLVENCY LAW AND BANK INTEREST MARGINS

In 2022, the European Commission (2022b) published a proposal for a directive to harmonize certain aspects of insolvency law. The proposal aims to increase the efficiency of bankruptcy proceedings in terms of the recovered value and the time it takes to liquidate a company, and it targets a fair distribution of the recovered value among the creditors.

The evidence of this paper suggests that policies that increase loan enforcement efficiency, i.e., increase loan recovery and reduce the time to enforce contracts, reduce bank interest margins, thereby improving the functioning of national banking systems. At the same time, policies that decrease variation in interest margins (and loan interest rates) in the EU could lead to a better international allocation of loan capital, enhancing banking market integration.[11]

Table 1 in Frizberg (2023) provides an overview of the various policy measures that are proposed in the directive, and it indicates which measures target value recovery and procedural efficiency. Four measures mainly target value recovery: (i) rules concerning pre-bankruptcy transactions that would reduce value recovered in bankruptcy, (ii) standards concerning asset tracing and recovery to get an accurate overview of the distressed firm's assets, (iii) clarification of a director's duty to file for bankruptcy within a certain time frame, and (iv) going concern sales in insolvency implying negotiating the sale of the firm without debt before insolvency filing. In turn, two measures specifically target procedural efficiency: (i) requirements for Member States to enhance the transparency of their bankruptcy rules, and (ii) the introduction of a special harmonized liquidation procedure for micro and small enterprises.

The law is a main driver of loan enforcement efficiency, and steps to harmonize parts of insolvency law in the EU potentially reduce the size and variation of bank interest margins. However, as discussed in the European Commission's (2022a, p. 34) impact assessment report accompanying the proposed directive, certain factors beyond the law can equally be important in bankruptcy proceedings, including the quality and capacity of judicial systems, and the qualifications and incentives of insolvency practitioners. Hence, harmonizing insolvency law can only partially eliminate variation in loan enforcement efficiency and its implications for the banking system.

[11] In addition, policies to harmonize insolvency law would reduce uncertainties about the outcomes of foreign bankruptcy proceedings, and hence encourage cross-border lending.

5. CONCLUSION

Despite considerable progress towards a Banking Union in the euro area, banks in the EU continue to be subject to widely varying insolvency law as applied to their lending customers. Adding to previous literature on the effects of insolvency regimes for banking markets, this paper provides evidence that bank interest margins tend to be higher in countries with weaker loan enforcement. Higher bank interest margins generally are a sign of less efficient bank intermediation, and hence the evidence of this paper suggests that bank intermediation is less efficient in countries with weaker loan enforcement. Varying bank efficiency across the EU – certainly if it is policy-induced – is incompatible with the Banking Union. A movement of harmonization of insolvency law towards a common, efficient standard in the years to come could help to attenuate this remaining obstacle to full Banking Union [12].

[12] Beyond laws, improvements in other areas such as administrative and court procedures and capacity at that level could also potentially improve loan enforcement efficiency.

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ANNEX

Table A1: Summary statistics for the regression sample

Variable	Obs	Mean	Std. dev.	Min	Max
NIM	643	0.024	0.019	-0.004	0.139
Adjusted NIM	637	0.020	0.016	-0.031	0.112
Interest income over earning assets	643	0.035	0.023	0.001	0.171
Interest expense over earning assets	643	0.011	0.011	0.000	0.087
LLP over earning assets	637	0.004	0.007	-0.010	0.058
Non-interest expense over total assets	643	0.032	0.051	0.001	0.492
ln(Total assets)	643	14.588	2.274	8.951	20.163
Equity over total assets	643	0.114	0.109	0.006	0.948
Loans over total assets	643	0.517	0.233	0.002	0.971
Liquid assets over total assets	643	0.342	0.215	0.006	0.994
Top 3 bank concentration	643	0.679	0.134	0.422	0.986
GDP per capita growth	643	-0.053	0.029	-0.116	0.055
Inflation (CPI)	643	0.009	0.012	-0.012	0.034
Recovery rate (ratio)	643	0.672	0.167	0.32	0.901
Time in years	643	1.944	0.793	0.4	4

Note: This table provides summary statistics for the regression sample of Table 2.

Table A2: Bank sample of the regression analysis

Country	Freq.	Percent
Austria	38	5.91
Belgium	19	2.95
Bulgaria	17	2.64
Croatia	19	2.95
Cyprus	25	3.89
Czech Republic	16	2.49
Denmark	20	3.11
Estonia	6	0.93
Finland	15	2.33
France	79	12.29
Germany	58	9.02
Greece	6	0.93
Hungary	11	1.71
Ireland	3	0.47
Italy	60	9.33
Latvia	11	1.71
Lithuania	4	0.62
Luxembourg	38	5.91
Malta	8	1.24
Netherlands	17	2.64
Poland	64	9.95
Portugal	18	2.8
Romania	14	2.18
Slovakia	9	1.4
Slovenia	10	1.56
Spain	30	4.67
Sweden	28	4.35
Total	643	100

Note: This table provides information on the number of banks per country in the regression sample of Table 2.

Despite considerable progress towards a Banking Union in the euro area, banks in the EU continue to be subject to widely varying insolvency law as applied to their lending customers. This paper provides evidence that bank interest margins tend to be higher in countries with weaker loan enforcement. Higher bank interest margins are a sign of less efficient bank intermediation, and hence the evidence of this paper suggests that bank intermediation is less efficient in countries with weaker loan enforcement. This policy-induced national variability in bank efficiency is incompatible with banking union.
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