Credit Institutions, Ownership and Bank Lending in Transition Countries

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ABSTRACT

The transition of banking in Central and Eastern Europe was nothing short of remarkable. All these countries now have market oriented banking systems that are largely free of government influence. This success is often attributed to the influence of foreign banks that brought modern technology and market based decision making. However, during the crisis foreign banks were a source of the transmission of financial fragility. In this paper we argue that the quality of banking institutions – credit institutions and the legal and regulatory structure – are important determinants of the success of a banking system. In particular, our empirical analysis shows that the crisis shock had a smaller impact on loan growth in countries with credit registers or bureaus for the recording of loans.
The Palgrave Handbook of European Banking

CREDIT INSTITUTIONS, OWNERSHIP AND BANK LENDING IN TRANSITION ECONOMIES

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Introduction

The transition of banking sectors in Central and Eastern Europe in the first 15 years of transition was nothing short of remarkable. When the Communist regimes fell, none of the transition countries had a functioning financial system that could provide intermediary services. Most observers at the time assumed that the development of market-based banking systems would take many years. However, by the early years of the 21st century, the transition of banking sectors in Central and Eastern Europe (though not in many countries of the former Soviet Union) was largely complete. For the most part, the countries in the region have market oriented banks that utilize modern banking technologies and are largely independent of direct government influence.

Why and how did this remarkable success story take place? Early in the transition period, observers attributed the improvements to banking reforms - recapitalizations and privatization - and, importantly, the early entry of foreign banking (Bonin et. al., 1998 and 2005; Bonin and Wachtel, 1999). Foreign bank entry though it was resisted at first, began in the mid-1990s and was a catalyst for change. In this view, the rapid transition of the banking sector can be attributed to foreign owners who brought modern technology, market oriented decision making, independence from vested interests and competition.

By 2000, foreign banks owned a majority of bank assets in virtually every transition country and almost all of the assets in several countries. Credit expanded very rapidly in the region in the years prior to the global financial crisis. There are many reasons for this but importantly the foreign ownership of banks facilitated and spurred these credit booms. If the domestic deposit base was small or growing slowly, foreign
owned banks were able to fund their expansion with cross border flows (see De Haas and van Horen 2016). Foreign banks could shift liabilities to their foreign subsidiaries with loans deposits, make equity investments and facilitate flows from other home country entities. Moreover, the expansion of credit in the transition countries had one particular characteristic, lending to households expanded much more rapidly than lending to any other sector.

The global financial crisis challenged the idea that foreign banks were in every respect a positive influence. All of a sudden, the parent banks from large countries were under intense pressure to deleverage and increase liquidity. They could reduce or even pull back financing to their transition country subsidiaries. In this view foreign bank ownership could magnify the impact of the global real sector shock on the transition countries. Foreign ownership which had been a catalyst for financial sector development for a decade was now, perhaps, the source of fragility. Financial systems in transition countries were particularly vulnerable to the crisis shock. Surprisingly, there were only two transition countries with systemic bank crises in 2009 - Latvia and the Ukraine - and two more with near systemic problems - Hungary and Russia.

The experience of the last 15 years - a credit boom that created financial fragilities which amplified the crisis shock - indicates that foreign bank ownership might be a mixed blessing. The question is essentially an empirical one and we will see below that the evidence in the literature, though mixed, tends to absolve the foreign banks. Foreign banks may have amplified the transmission of the crisis shock to transition countries but in most instances they retained their commitment to these secondary home markets and foreign subsidiaries. More importantly, we argue that the banking sectors in transition economies withstood the crisis shock because they had developed
their own solid institutions - an effective supervisory structure and legal framework.

There is more to the story behind the success of banking in transition countries than foreign ownership. The quality of institutions in the financial sector plays a major role in fostering the development of the banking sector. The significance of legal institutions, regulatory structures and the institutional infrastructure for financial relationships was overlooked in the early transition years. This is not surprising because economists did not pay much attention to the role of institutions in economic growth until the late 1990s. For example, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) argued that better creditor rights are associated with better developed credit markets in a large cross-section of countries. This law and finance literature developed quickly to show how improved legal structures are associated with better financial development (Djankov, McLiesh and Shleifer (2007)), fewer loan covenants (Qian and Strahan (2007)) and better corporate investment decisions (Giannetti (2003)).

The story of banking in transition countries is as much the story of institution building as it is a story of foreign ownership. Our view of transition banking is that institutions are key. Modern market oriented banking systems emerged when institutional structures were in place. This included a reliable legal framework for the conduct of banking business, a framework for regulation and the conduct of monetary policy and the end of direct or implicit government influence on banking activity. Foreign banks were interested in entering the markets when these conditions were in place.

To summarize, most transition countries experienced credit booms which were followed by the global financial crisis shock. The presence of foreign banks which was pervasive by this time might have exacerbated credit booms and the impact of the
crisis. Nevertheless, the banking sectors in transition countries were very resilient. Our hypothesis is that the degree of resilience to the boom and crisis shocks related primarily to the quality of domestic institutions and policy decisions.

The transition in Central and European from a command to a market economy has been an important laboratory for the so-called law and finance literature which was emerging toward the end of the 1990s. Literature on the region examined specific legal arrangements relevant to financial development. For example, Dahan (2000), Pistor (2004) and Pistor, Raiser, and Gelfer (2000) described how creditor rights have been introduced in these countries. Haselmann, Pistor and Vig (2010) documented the changes in creditor rights that occurred in the transition countries as the World Bank and the EBRD advised countries to adopt legislation. They construct indicators of the strength of collateral law and bankruptcy law and relate them to the growth of lending. Their results indicate that better creditor rights are associated with more lending and the existence of good collateral law has a stronger impact on lending than the strength of bankruptcy protections, probably because collateral law is a prerequisite for introducing protections to creditors in bankruptcy proceedings. In related work, Haselmann and Wachtel (2010) showed that legal differences result in differences in loan composition. Good collateral law results in more private credit formation and more lending to SMEs as opposed to large firms. Finally, good creditor rights seem to be especially important for foreign banks and therefore more of them will enter if creditor rights are good.

In addition to the legal framework for lending, banks rely on credit information in order to make credit judgments. Credit information effects lending for several reasons (see Japelli and Pagano 1993). First, if banks have more information on borrowers,
they are better able to access the credit worthiness and price loans accordingly. Second, information sharing reduces the market power of banks over borrowers as information is "stored" outside the bank. Information sharing might have a more pronounced effect in countries with weak creditor protection since enforcement of the contract is costly.

The empirical literature lends support to the hypothesis that information sharing increases lending, and decreases credit spreads and default rates. Jappelli and Pagano (2002) and Djankov et al. (2007) find a positive correlation between information sharing and lending to the private sector and a negative correlation with default rates. Brown et al. (2009) confirm this finding with firm-level data for Eastern Europe: firms in countries with more information sharing have easier access to credit and pay lower interest rates. The effect is larger for countries with weak creditor protection suggesting that credit registers can serve as a substitute for underdeveloped legal systems.

In this chapter we provide a brief survey of banking in the transition economics. The discussion takes us through the first decade - the 1990s - when commercial banks emerged, and the 2000s, the era of foreign bank ownership. Our emphasis in on the structure of banking - the emergence of foreign banking - and the role of institutions.

It is difficult to distinguish the influence of good institutions from the influence of foreign bank ownership because they emerged at the same time and clearly influenced each other. However, the crisis provides a quasi-experimental context for evaluating the role of ownership and institutions. We present some suggestive econometric results that test whether foreign ownership and good institutions enable banking systems to withstand the crisis shock. Specifically, we will show that a well-functioning credit information systems can help dampen the impact of financial crisis on the financial sector.
The crisis originated in the American mortgage markets so it can be viewed as an external or exogenous shock for the transition countries. The shock resulted in an increase in uncertainty about the future of the real economy and a general increase in credit risks. If credit information systems help overcome such uncertainties by providing idiosyncratic information on individual borrowers we would expect that markets that have a better creditor information system would be more resilient to the shock.1

Our empirical investigation examines the volume of lending and its composition among the major sectors: households, non-financial corporations and government. The extent of information asymmetry and uncertainty around the crisis event varies for different types of borrowers. It should be larger for SME borrowers as compared to large borrowers and for corporate borrowers compared to the government. We use data on credit institutions from the World Bank and find that the quality of institutions, especially the coverage of credit information systems affects post-crisis loan volume.

Transition banking: the first decade

In the early years of transition, banking sectors consisted of state owned banks that were competing with newly privatized banks and new entrants in a system largely devoid of effective regulation. The state owned banks, at the behest of the government, continued to lend to loss-making state owned enterprises and even privatized banks continued lending to their old customers, which led to the rapid growth of bad loan portfolios. New entrants, so-called Greenfield banks, took advantage of loose oversight

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1As already noted, many transition countries were experiencing a credit boom prior to the crisis so the crisis might to have some extent been endogenous to the region. We would still expect countries with better credit institutions to bounce back from the shock more rapidly.
to take on risky and too often shady deals. The collapse of trading relationships with the Soviet Union and the absence of any other markets led to large transition recessions while at the same time the liberalization of prices and large government deficits resulted in episodes of hyperinflation.

The first transition development was the creation of banking institutions where none had existed before (see Hasan, Bonin and Wachtel 2015). Some centrally planned economies had advanced industrial enterprises which were in some instances internationally competitive but none had banks that resembled those in developed countries. The planning framework had no place for banks or financial intermediaries. Capital was allocated by plan and the role of the banks, usually a national mono-bank, was just to provide a payments system and accounting mechanism for transactions among enterprises. Thus, a first step in transition was to create banks by separating the mono bank into a central bank and one or more state owned commercial banking entities.²

Commercial banks were created before functioning regulatory structures were in place and before the relationship between state owned enterprises and banks were restructured. As a result, every one of the transition countries experienced at least one banking crisis in the early 1990s that required the re-nationalization of banks that had been privatized, widespread losses to depositors and the recapitalization of state owned banks by the government. These experiences point to the importance of institution building, in this case both the structure of banks and the regulatory framework.

²This simplification abstracts from the differences among transition countries. Yugoslavia, for example, established somewhat independent commercial banks in the 1950s; Hungary always had a foreign trade bank and savings bank. Similarly, there were differences in the way commercial banks were created. Bulgaria granted every office of the central bank a universal banking license in 1990 while neighbouring Romania created one state owned commercial bank.
At the start of transition, governments were reluctant to allow foreign ownership of banks as a matter of national pride. The banking system - the overseer of the nation’s money - was an important symbol of sovereignty; the monetary system was viewed as a national treasure that should not be subject to foreign control. By the mid-1990s attitudes began to change with the realization that foreign strategic investors in banks were, like any other foreign direct investment, a fixed investment (in this instance bank capital) and a source of technology transfers (see Claessens et al. (2001)). The first such deal was the sale of Budapest Bank, a state owned bank with a serious bad loan problem, to GE Capital in 1995. That opened the floodgates and by 2000, a majority of bank assets were in foreign owned institutions in Czech Republic, Hungary, Poland, Bulgaria, Croatia, and the three Baltic countries. The only exceptions in central and Eastern Europe were Slovakia, Romania, Serbia and Slovenia; by 2005, Slovenia was the lone exception where government policy limited foreign participation in banking. Small countries such as Estonia, Lithuania, Slovakia and Croatia seem to maintain their sovereignty even as over 90% of bank assets are in entities controlled by foreigners.

Foreign banks brought modern banking technology and products and introduced arm’s length relationships between banks and their loan customers. Further, improved banking practices spilled over from the foreign owned institutions to the domestic banks including state owned institutions. However, the emphasis on the catalytic effect of foreign bank ownership overlooks the role of institutions. Foreign entry would not have occurred without improvements in the institutional structure. The introduction of banking laws and regulatory structures were often due to foreign influences

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3Slovenia suffered a serious banking crisis in 2013 and then began to relax ownership restrictions.
4For example, the banking systems skipped the use of paper checks and were early adopters of electronic payments systems. On the asset side, banks imported credit scoring models from their parents.
starting in the 1990s. USAID, the World Bank, EBRD, EU Phare all provided sup-
port and expertise for writing legislation (see Pistor, Raiser and Gelfer, 2000). Foreign
influence increased when six transition countries began accession talks with the EU in
1998.

Basic institutions such as a banking law, accounting standards and regulatory
authorities were introduced in the 1990s. However, it often took some time before
an arm’s length relationships developed between regulators and the banks. Further,
it took additional time for the legal structures used in banking to emerge, including
reliably functioning court systems for commercial disputes, credit information systems
and laws regarding the use and taking of collateral.

In Hungary, the first country to welcome foreign bank ownership, legislation in
1992 introduced modern banking law, international accounting standards and a new
bankruptcy law. The sale of Budapest Bank took place in late 1995, after the legal
reforms. In the Czech Republic, an ambitious program of voucher privatisation of
enterprises started in 1991, before corporate governance reforms and capital market
regulations were in place. The program was soon enveloped in scandals involving
bank sponsored privatization funds and lending to bank controlled enterprises. By
1998 bad loans were about one-quarter the size of Czech GDP. Enterprise and legal
reforms started around 1999 as the Czech Republic entered serious negotiations with
the EU on accession. Bank restructuring and reprivatisation began soon thereafter.
In 1999 foreign banks owned about one-quarter of Czech bank assets and two-thirds
in Hungary. By 2005, foreign ownership was about 90% in both countries. Foreign

5Foreign entry developed much more slowly in the former Soviet Union (other than the Baltics)
where legal and regulatory institutional developments lagged those in Central and Easter Europe.
6The sale was controversial because the government agreed to take back bad loans that might be
uncovered after the sale.
ownership in both instances followed institutional reforms.

**Transition banking after 2000**

In the decade prior to the financial crisis, GDP growth in the transition economies was faster than growth in developing Asia (with the exception of India and China) and credit markets deepened substantially. The credit expansion was largely driven by capital inflows, particularly bank flows from Western Europe and external debts (borrowing by banks and by sovereigns). There were a number of reasons why the flows were large including the global savings glut, confidence in the transition economies generate by EU accession and the expectation that Euro adoption would follow, demand generated by structural reforms.

The credit boom and the shift in the composition of lending from non-financial business to households in the 12 transition countries in our sample are shown in Figure 1. In all of the countries shown the share of lending going to households has increased over the last decade and in many instances the share is as large at the share going to non-financial businesses. The foreign banks brought credit scoring models which were easily applied to household lending but not readily adopted for lending to enterprises. Further the banks had only recently cleaned up loan losses and reduced lending to large unprofitable state owned enterprises. Lending to enterprises, particularly newer or smaller enterprises, is often relationship based. Household lending took o before bank - enterprise client relationships had time to develop. Commenting on developments in Polish banking, Wiesiolek and Tymoczko (2015, p. 315) conclude that:

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7 The 12 transition countries are Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia and the Ukraine.
The model of banking which involved promoting loans for households (mostly housing loans) on a large scale was imported from headquarters before a culture of cooperation with enterprises had sufficient time to emerge. As a consequence, households rather than enterprises have become the most important clients of banks.

Another feature of lending was that by 2008 lending denominated in foreign currencies exceeded 50% of all loans in some countries (e.g. Hungary, Bulgaria, Croatia, Romania; see Bonin (2010)).

By the time of the crisis, foreign banks were a pervasive presence in all the countries in our sample except Slovenia and the Ukraine. The differential impact of the crisis does not seem to be related to the foreign bank share of assets or loans which are in most instances little changed after the crisis. There are small declines which might reflect tighter lending standards in the post-crisis period by foreign banks.

GDP dropped sharply in almost every country when the crisis started and in most instances it rebounded after a year. Movements in private credit after the crisis differed from place to place. For example, in Poland, there was a short sharp decline in credit that was quickly reversed and credit was back on trend by 2010. In Slovakia the impact of the crisis on GDP was small and credit continued to grow. However, in Romania and Hungary the credit slowdown was long lasting and five years after the crisis, credit had not reached it prior peak. In Hungary, Slovenia, the Ukraine and the Baltic States credit growth in the post-crisis years has been negative.

The share of lending going to households increased before the crisis and then tended to level off at about 40% of all lending in most countries. In most countries, the share of lending going to government and to financial corporations together was

\footnote{The foreign share of bank assets in each country in 2008 is shown in Table 1.}
below 20% so any increase in the household share was at the expense of lending to non-financial business. Lending to households was concentrated in mortgage lending in Poland and Hungary in particular. In Hungary, the largest type of lending was mortgages dominated in foreign currency which led to both maturity and currency mismatch on bank balance sheets and a banking system that was particularly vulnerable during the crisis. The only counties where the share of lending to the non-financial business sector has increased since the crisis are Romania, Slovakia and Hungary all of which experienced declines in total lending.

The impact of the financial crisis on the transition countries was severe as demand for their exports dropped quickly after the crisis shock. Further, there was immediate concern that financial crises would ensue as capital inflows halted suddenly. From the very start of the crisis there was concern that banking customers in the transition economies where most financial services were provided by foreign banks would suffer. Popov and Udell (2012) use survey data on small and medium enterprises in the region to investigate the transmission of the crisis shock through credit supply to SMEs. They find that SMEs report larger credit constraints in areas where the local banks’ parents were more severely affected by the crisis. According to De Haas et al. (2015), the contraction in credit by foreign bank subsidiaries in transition countries occurred earlier and was deeper than that of domestic banks during the crisis years of 2008 and 2009. These studies indicate that the developed country financial crisis was quickly transmitted to the transition countries through a foreign bank ownership channel.

The fear of transmission of the financial crisis to the transition economies led immediately to a broad international policy response known as the Vienna Initiative. The Vienna Initiative was an unusual private-public, multilateral response to the cri-
sis. As the global crisis was deepening in January 2009, the international financial institutions (including the EBRD, IMF and the EIB) and the private foreign parent banks in the region reached an agreement to cushion the effects of the shock. The banks agreed to maintain their exposures to the transition countries and recapitalize banks as necessary while the IFIs offered support of 33 billion Euros to maintain bank stability. Among the larger transition countries, Hungary, the Ukraine, Poland and Romania all opened lending arrangement with the IMF. These efforts contributed to the post-crisis recovery of banking and credit creation in the region.

The discussions that led to the Vienna Initiative began in November 2008. There was good reason for concern that the global crisis would be transmitted to and magnified in the region because of the extensive foreign ownership. Thinking about foreign bank ownership which had been widely supportive since the late 1990s was quickly reversed. In the IMF’s retrospective view:

Many western banks in emerging Europe operate their subsidiaries as if they are branches, with risk management centralized at the group level and local supervisors relying on parent banks’ home supervisors to monitor the changes in the risk profile of their foreign affiliates. Foreign-owned banks can often evade regulatory measures, including by switching from domestic to cross-border lending or by switching lending from banks to non-banks, such as leasing institutions (owned by foreign-owned banks). Foreign-owned banks are also less likely to be influenced by domestic monetary policy measures, such as the raising of domestic interest rates. Often, these banks are systemically important in the host country although only a small part of the overall bank group. (Bakker and Klingen, 2012, pp. 21-22).

The evidence is that the Vienna Initiative was successful; De Haas et al. (2015) found that banks that participated in the Vienna Initiative were less likely to contract.

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9The large foreign banks originated the idea of a coordinated approach, which resulted in the Vienna Initiative, in a letter expressing concern for the financial stability of the region sent to the European Commission in November 2008.
credit in the region than banks that did not participate. This is particularly important because De Haas and Van Lelyveld (2014) found that around the world multinational bank subsidiaries curtailed credit growth during the crisis much more than domestic banks.

Nonetheless, Epstein (2014) argues that it was the business models of the banks themselves rather the Vienna Initiative intervention that mitigated the effects of the crisis. The foreign parent banks in the regions were committed to their longer-term objectives of maintaining market share and reputation in their "second-home" markets. Further Bonin and Louie (2015) show that the six large multinational banking groups with transition subsidiaries maintained their commitment to the region during both the global financial crisis and the Eurozone crisis.

For more than a decade, differences in banking performance among transition countries was often attributed to the beneficial presence of foreign banks. The crisis experience dispelled that notion; there was evidence that foreign ownership transmitted or magnified the crisis shock. Nevertheless, most countries in the region demonstrated a great deal of resilience in face of the crisis shock albeit with the help of the Vienna Initiative. Bonin (2010) notes that countries with and without extensive foreign ownership were affected by the crisis and argues that other factors were at work. For example, Slovenia, with little foreign ownership but serious macro-economic imbalances suffered a banking crisis. Hungary on the other hand with extensive foreign ownership was severely affected by the crisis. In order to stem capital outflow and maintain financial sector stability, the Hungarian central bank had to raise its base lending rate by 300 basis points at the end of 2008. However, the problem in Hungary was the extent of lending in foreign currency and bank portfolios with both maturity
and currency mismatch. Bank regulators probably and mistakenly assumed that foreign bank parents would absorb all risks. This is as much a failure of domestic bank supervision and poor risk management by banks. In the post-crisis period, Hungarian authorities have tried to develop macro-prudential policy tools to prevent a recurrence. A few south eastern European countries, particularly Croatia, used macro prudential tools prior to the crisis to rein in a credit boom with some limited success.\(^{10}\) Poland performed well during the crisis despite extensive foreign ownership. Poland’s banking system was less concentrated than elsewhere and more competitive with diverse foreign ownership and little foreign currency lending. Lending in the Ukraine declined and more recently some Russian banks have replaced risk-adverse owners from the West. Banking experience after the crisis was diverse and seems to have more to do with domestic policy and the quality of regulation than the extent of foreign ownership.

In the next section we discuss how institutional characteristics effect the banking system’s ability to withstand a crisis shock. Our hypothesis is that the crisis shock increased uncertainty about lending; it should have a lesser effect when good institutional structures provide a shock absorber.

**Credit information systems in transition countries**

The literature on law and finance cited earlier emphasizes the importance of legal institutions. Clearly defined property rights, contract law, a commercial code and a court systems that can adjudicate disputes fairly, quickly and without corruption are essential for a modern business economy. There are many nations around the world where many of these things are missing but they are in place in most of the transition

\(^{10}\)A variety of interventions were used to curb types of lending or reduce capital inflows. See Dimova et al (2016).
countries partly as a result of reforms that were required to secure EU membership. The World Bank’s Doing Business surveys introduced in 2003 have become a standard source for measures of the general context for business activity (see Besley (2015)). Generally, the transition countries score well on the Doing Business indicators. The average overall doing business distance to the frontier (a value of 100 representing best practices) for the 12 countries in our empirical analysis was 74.5 in 2014, only a few points below the average for OECD countries.

The two principal roles of banks are the provision of deposits used as the transactions medium and the financial intermediation by providing credit to deficit units. The ability to provide credit efficiently relies on the existence of institutions that support lending operations. For our empirical investigation, we are particularly interested in the data on credit institutions from the Doing Business Surveys. There are data on the existence and functioning of both public credit registries and private credit bureaus that maintain data bases on payment history and credit outstanding for both enterprises and individuals. All of the 12 transition countries in our empirical analysis have one or the other and five have both. The existence of credit information is just the first step, it has to be available and usable to lenders.

The World Bank Doing Business reports also provide an summary index, the “Depth of Credit Information”, which is based on responses to questions regarding the availability of credit information and another summary index, the “Strength of Legal Rights” which measures legal rights of lenders in regard to collateral and in bankruptcy. Table 1 shows the 2008, pre-crisis, value of the indicators and also the asset-weighted market share of foreign banks for the 12 countries in our empirical

\[11\text{For a description of the World Bank’s methodology regarding data on getting credit see: http://www.doingbusiness.org/methodology/getting-credit.}\]

\[12\text{The questions in each index are found under the aforementioned link.}\]
The quality of credit information systems differs among countries. Some countries, such as Lithuania and Bulgaria, scored well on the "Depth of Credit Information" index while Latvia, Slovenia and the Ukraine have scores of zero indicating the absence of any formal credit information systems. Cross-country variation is the "Strength of Legal Rights" index, though substantial, is less pronounced. In 2008, index values range from 4 out of 10 in Slovakia to 10 out of 10 in Latvia and an overall average of approximately 7. Interestingly, the indicators are uncorrelated. The correlation between the 2008 values of two indices is 0.15. Most notably, Latvia has a weak credit registry with very little coverage and a maximal score on the "Strength of Legal Rights" index. In addition, both indices have only a weak correlation with the foreign bank share.\(^{13}\) The correlation of the foreign bank asset share in 2008 with the depth of credit index is 0.21 and with the strength of legal rights index it is 0.01.

Coverage by registers and bureaus varies among those countries, which have such an institution in place. Coverage is measured as the number of entities in the database plus the number of credit inquiries for which there was no entry, all as a ratio to the adult population. For private credit bureaus in 2008, the coverage ranges from 3% in the Ukraine to 72% in Croatia with an overall mean of 28%. Coverage by public registers ranges 1% in Slovakia to 31% in Bulgaria with an overall mean of 4%.\(^{14}\)

The credit information systems are not the only potentially relevant institutional

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\(^{13}\)The foreign bank lending shares were calculated by combining the "Bank Ownership Database" (see Claessens and Van Horen (2015) with Bankscope data. The highest consolidation level in Bankscope and the ownership data base were merged by index number or by name. Unmatched banks were dropped if their loans was below 1% in every year. Ownership of the others was determined from annual reports, press articles and self-descriptions on the homepages.

\(^{14}\)Some of the large differences can be attributed to the scope of the register or bureau. In some countries with low values coverage is restricted to firms.
structures in which the countries differ. We also find variation regarding the enforcement of contracts (measured by length in days required and the costs of enforcement as per cent of the claim) and the insolvency system (measured by the recovery rate and the costs of the procedure as a per cent of the estate).

We turn next to an empirical examination of the influence of these indicators on bank lending and the resilience of lending to the crisis shock.

**Empirical Analysis**

We use a panel data for our 12 transition countries for the period 2004-14 to examine the effects of institutional quality and the extent of foreign ownership on the volume of bank lending. The global financial crisis presents an opportunity to examine how good institutions cushion the effects of the shock. We treat the global financial crisis as an exogenous shock and examine how lending is affected during the crisis. Specifically, we relate the pre-crisis characteristics of the financial sector to the strength of lending after the crisis shock. The regression framework for the analysis is shown by:

\[
\log(\text{Loan Volume})_{i,t} = \alpha_i + \alpha_t + \delta \times \text{Institution}_{i,2008} \times \text{Crisis}_t \\
+ \theta \times \text{Controls}_{i,t} + \epsilon_{i,t}
\]  

The dependent variable is the log of the volume of loans to a particular sector in current Euros in country \( i \) in year \( t \). The coefficient of particular interest is \( \delta \), the coefficient on the interaction of the crisis indicator, Crisis\(_t\), which has a value of one post-2008 and a measure of institutional quality, Institution\(_{i,2008}\), in the pre-crisis year.

\( \text{Crisis}_t \) indicates the years during which the financial crisis occurred.

\( \text{Institution}_{i,2008} \) is a measure of institutional quality in the pre-crisis year.

\( \text{Controls}_{i,t} \) are additional control variables.

\( \epsilon_{i,t} \) is the error term.

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15 The crisis originated in the US and was quickly transmitted around the world. See also Behn, Haselmann and Wachtel (2016).
(2008). A positive $\delta$ indicates that institutional quality cushioned the effect of the financial crisis on loan volume.

Other variables on the right hand side are fixed effects for both countries and years and macro and banking sector controls. To control for economic development, we include real GDP growth and inflation from the IMF World Economic Outlook. We control for possible effects the Vienna Initiative with a variable that reflects the influence of the policy initiative in each country. We identify the banks in each country that participated in the Vienna Initiative or are owned by a bank that participated in the Vienna Initiative. The control variable is the asset-weighted share of these "Vienna-Parent"-banks in each country.$^{16}$

Estimates of equation (1) are in Table 2. Since the existence of asymmetric information might vary considerably between different sectors, institutions may play a very different role for different borrowers. In order to learn about this we present separate regressions for lending to households, non-financial businesses and the government sector, as well as total lending. We present results for the coverage of credit institutions and for the foreign bank share. Other measures of institutional quality did not have any significant impact. Estimates use OLS and the standard errors are clustered by country.

To identify the effect of the institutional variables on lending, we use the crisis shock as a quasi-experiment. That is, we examine whether there is a differential reaction in lending in response to the shock depending on the quality of institutions, e.g. the extent of coverage of the credit register. As noted earlier, the failure of Lehman Brothers in September 2008 and the subsequent strain on the global financial

$^{16}$The bank asset data are from Bankscope.
system did not originate in Eastern Europe and can therefore be considered exogenous. The coefficient $\delta$ in equation (1) describes how much of the shock was absorbed by the institutional variable. Intuitively, $\delta$ describes how lending in countries with good pre-crisis institutions fared compared to countries with poor institutions.

In order to measure the effectiveness of credit institutions we apply the coverage of private credit bureaus as explanatory variable in panel A and the coverage of public credit registers in panel B. With regards to aggregate lending, we find that well-functioning credit information institutions measured as public registers are able to cushion the effects of the crisis. More specifically, once the crisis shock hit the Eastern European economies, aggregate lending decreased by 12 percent less as a response to the shock in a country where the coverage of the public credit register is by 10 percentage points higher relative to another country. When we measure the quality of credit institutions by the coverage of private credit bureaus we do not find a significant impact on aggregate lending.

Looking at the different sectors reveals a more distinct pattern. High bureau coverage increases lending to households post crisis whereas high register coverage increases lending to non-financial corporations. Reason for this asymmetric effect is possibly the different scope of bureaus and registers: bureaus tend to focus on individuals whereas registers primarily collect information on firms. We conclude that the availability of creditor information mitigated the effects of the financial crisis.

In Panel C, we look at the effect of foreign banks on the post crisis reaction. We find that the presence of foreign banks did not shield countries from the effect of the crisis. On the contrary, the negative interaction coefficients suggests that countries with a high presence of foreign banks recovered more slowly after the crisis shock.
We also test a series of other institutional measures - for example the duration of the insolvency procedure or the costs of contract enforcement - but none of these variables has a systematic influence on the post-crisis reaction of lending.

Conclusion

Early studies of transition banking starting in the late 1990s tended to emphasize the importance of foreign bank entry. The literature on the law and finance nexus was just emerging at that time and the importance of institutional development in transition banking was not appreciated at first. In addition, measurement of institutional quality is difficult and the World Bank data on specific institutional characteristics was not collected until after 2003. Economics tends to emphasize things that can be measured. Changes in ownership provided concrete data while institutional change is harder to measure. With the limited data available, our regression framework gives some broad indication of the role of institutions on lending in transition countries and shows that institutions - particularly credit institutions - can mitigate the effects of the crisis. During the global financial crisis, foreign ownership was a burden mitigated by Vienna Initiative, while good credit institutions were a cushion.

Acknowledgments

Research assistance from Nate Katz, Isabel Schaad and Daniel Seeto is appreciated.
Bibliography


Figure 1: Household and Business Lending and GDP, 2004-2014
The figure depicts the development of loans to households, non-financial corporations and nominal GDP normalized to 1 in 2004. The data is from the European Central Bank (ECB) and, if not available from the ECB, from the national central banks. For non-Euro currencies, the loan volume is converted into EUR using the average exchange rate in that month. The development for Slovakia and Croatia are not shown due to limited data availability in 2004.
Table 1: Institutional and Bank Data in 2008

<table>
<thead>
<tr>
<th>Credit Information</th>
<th>Bulgaria</th>
<th>Croatia</th>
<th>Czech Republic</th>
<th>Estonia</th>
<th>Hungary</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Poland</th>
<th>Romania</th>
<th>Slovakia</th>
<th>Slovenia</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of Credit Information Index</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Credit Bureaus</td>
<td>5%</td>
<td>72%</td>
<td>65%</td>
<td>21%</td>
<td>16%</td>
<td>0%</td>
<td>7%</td>
<td>50%</td>
<td>25%</td>
<td>40%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Credit Registers</td>
<td>31%</td>
<td>6%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
<td>9%</td>
<td>0%</td>
<td>5%</td>
<td>1%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Strength of Legal Rights Index</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>10</td>
<td>5</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>

| Bankruptcy & Insolvency Law            |          |         |                |         |         |        |           |        |         |          |          |         |
| Enforcement Length (Days)              | 564      | 561     | 653            | 425     | 335     | 279    | 210       | 830    | 537     | 565      | -        | 387     |
| Enforcement Costs (% of Claim)         | 24%      | 14%     | 33%            | 17%     | 15%     | 16%    | 24%       | 19%    | 20%     | 26%      | 19%      | 44%     |
| Recovery Rate                          | 32%      | 30%     | 21%            | 38%     | 38%     | 35%    | 40%       | 34%    | 26%     | 45%      | 47%      | 9%      |
| Insolvency Costs (% of Estate)         | 9%       | 15%     | 15%            | 9%      | 15%     | 13%    | 7%        | 15%    | 9%      | 18%      | 8%       | 42%     |

| Foreign Banks                          |          |         |                |         |         |        |           |        |         |          |          |         |
| Share of Foreign Bank                  | 84%      | 91%     | 85%            | 98%     | 98%     | 84%    | 66%       | 92%    | 76%     | 88%      | 99%      | 31%     |
| Share Vienna                           | 41%      | 54%     | 45%            | 89%     | 40%     | 48%    | 64%       | 15%    | 56%     | 20%      | 43%      | 6%      |

The 2008 value is displayed. *Depth of Credit information, Coverage private bureau, Coverage public register,* and *Strength of Legal Rights Index* are taken from the annual Worldbank "Doing-Business" Survey. *Depth of Credit Information* is an index ranging from 0 to 8. Likewise, the *Strength of Legal Rights Index* from 0 to 12. Larger index values indicate more and deeper information on borrower in the credit register or better protection of lenders and borrowers. *Enforcement Length (Days)* is the time to resolve a dispute, counted from the moment the plaintiff files the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between. *Enforcement Costs (% of Claim)* are the cost in court fees and attorney fees, where the use of attorneys is mandatory or common, expressed as a percentage of the debt value. *Recovery Rate* calculates how many cents on the dollar secured creditors recover from an insolvent firm at the end of insolvency proceedings. *Insolvency Costs (% of Estate)* are the average cost of insolvency proceedings. *Share of Foreign Bank* is the asset-weighted market share of foreign banks. *Share Vienna* is the fraction of banks whose parents participated in the Vienna Initiative. Description of the credit information, and bankruptcy and insolvency law partly taken from the Worldbank "Doing Business" report.
The table reports $\delta$ of equation 1: $\log(\text{Loan Volume})_{i,t} = \alpha_i + \alpha_t + \delta \times \text{Institution}_{i,2008} \times \text{Crisis}_t + \theta \times \text{Controls}_{i,t} + \epsilon_{i,t}$. Each specification includes country and year fixed effects and macro control variables (as described in the text). Loans to Businesses exclude loans to financial corporations. Bureau is the number of individuals and firms listed in the largest credit bureau as percentage of adult population. Register is the number of individuals and firms listed in the credit register as percentage of adult population. Foreign is the asset-weighted market share of foreign banks. Crisis is a post-crisis dummy which is equal to one post 2008. Standard errors are adjusted for clustering at the country level and reported in parenthesis. Note: * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level.