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Financing Patterns of Firms in Transition Countries and Its Implications: Evidence from Croatia

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Financing Patterns of Firms in Transition Countries and Its Implications: Evidence from Croatia

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Abstract

This paper provides an extensive analysis of both debt maturity and financing mix choices over the whole universe of Croatian companies. We show that the short term trade credit is a prevalent source of finance. Next, we find evidence that the use of equity finance varies with the firm size, and to some extent also the evidence of maturity matching. Businesses whose bank loans are obtained from big banks rely more on them and less on other loans, whereas the businesses that borrow exclusively from foreign banks still have to rely less on bank finance and more on equity. The opposite is valid for firms borrowing exclusively from domestic banks, but there is no proof of possibility to substitute equity finance by having an exclusive relationship with some domestic bank. We conclude by policy implications which take into account the strong reliance of small companies on external financing, necessity of strong creditor protection and illiquidity issues. Our results add to the existing notions on the subject, and to our knowledge this is the first exhausting study of these topics in one of the CESEE countries.

JEL classification: G21, G28, G32, L11

Keywords: determinants of financing patterns, capital structure, access to finance, SMEs, relationship lending

1 Introduction

It has been well over four decades since the issues of the optimal capital structure roused Modigliani and Miller's minds (1958) or Guttentag and Herman (1966) asked themselves whether large banks neglect small businesses. These subjects yielded a whole strand of the literature on firms' financing structures and costs. Along those lines, we will empirically investigate the financing structure of Croatian firms, explore its determinants and consider policy implications.

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Our main research questions are what determines the maturity structure of financing sources and what determines the choices between various classes of liabilities. We explore whether those patterns vary in firms' characteristics, lenders' characteristics and/or bank relationships. We will use a comprehensive dataset, which is assembled in part from the financial reports of the companies and in part from the register of loans and deposits.

Similar attempts for individual countries have already been made, and there is a considerable literature on cross-country differences in the financing patterns of the companies, mostly relying on explanations regarding differences in macroeconomic variables, financial and legal institutions' development, and firms' characteristics. Our contribution to the existing literature is providing notions on the financing structure of Croatian firms and its determinants. Furthermore, the merged dataset allows us to explore a wide set of the hypotheses, which were either not tested or tested separately in the previous literature, due to the incompleteness of data.

We assume that the Croatian case could be of particular interest, because it is characterized by a high degree of banking concentration and foreign banks participation and a high share of cross-border credits. Croatia is also a candidate country for an EU membership since June 2004. The process of accession negotiations started in October 2005 and the aim is to finalize the negotiations and proceed to signing the Accession Treaty in 2011. Our research relies on data from Croatia and its conclusions can be set against the existing findings on financing structure in European transition countries.

Notions on financing choices are a valuable in deciding in which direction the institutions and markets should be developed. Timely and targeted actions in these processes, as well as in the creation of government aided programs, can save a lot of resources. Furthermore, it is important to recognize possible role of big or foreign owned banks in firms' financing, in order to take a stance toward consolidation and similar developments in the banking sector.

Results show that the most important determinants of funding are the firm-level characteristics, such as size, ownership and assets' structure, followed by lending relationship and lender characteristics. Small companies use more debt, and their access to external finance is crucial for their funding. Popularity of the short term trade credit as a financing source indicates the necessity of strong legal enforcement of payment agreements as a prerequisite for a sound liquidity of the system. Maintaining a unique banking relationship with a domestic bank cannot serve as a safe haven to the company nor as a substitute for equity. However, borrowing from big banks seemingly reduces the need for other financing sources.

The structure of this paper is as follows: Section 2 gives an overview of the related literature. Section 3 provides a descriptive analysis of the Croatian firms' and remarks on financing patterns. Description of the data and the methodology for examining the determinants of the

financing patterns can be found in the Section 4. Section 5 provides empirical results of the model, whereas the last Section summarizes and concludes.

2 Related research

Two lines of research are relevant in respect to this study. The first explores the financing patterns and capital structure decisions, trying to explain them with the borrowers' and lenders' characteristics, or by institutional differences and macroeconomic variables. The second strand studies credit availability and financing cost determinants in general, together with studies of relationship banking, SME's access to finance and questions arising from consolidation of banking sector or penetration of foreign banks.

In their study, **Titman and Wessels** (1988) argue that the capital structure choice depends on the size, profitability and uniqueness of the firm, whereby they use separate measures of total debt over equity as dependent variable. Namely, firms with specialized products have relatively low debt ratios, and there is some support that also profitable firms have relatively less debt. Additionally, smaller firms tend to use more short term debt than larger firms. However, they do not find evidence that the debt ratios are related to firm's expected growth, non-debt tax shields, volatility nor collateral value of the assets.

The comparison of the capital structure across G7 countries was done by **Rajan and Zingales** (1995). They find that the differences in the firm leverage across countries can only partially be explained by institutional differences such as taxes, bankruptcy law, ownership and control, or bank versus market-based financing. Cross-sectional differences within the countries are explained by variables such as tangibility of assets as a proxy for collateral strength, market-to-book ratio as a proxy for growth opportunities, firm size and profitability. The dependent variables are the book or market leverage, determined as a ratio of total debt to book or market value of capital.

Demirgüç-Kunt and Maksimovic (1998) try to explain cross-country differences in leverage and maturity of liabilities by firms' characteristics, together with differences in macroeconomic factors and institutional differences. The firm-level variables are derived from the structure of assets, operating cycle and cash constraints. Estimations are done on two subsamples: large and small firms separately. Dependent variables are long term debt to total assets ratio, short term debt to total assets ratio and long term debt to total debt ratio. Interestingly, they find that large firms have relatively more long term debt compared to smaller firms. Also, in developed countries firms have more long term debt, both in levels and proportions. Their findings suggest that large firms can more easily use their fixed assets to obtain long term debt. Finally, they provide some evidence for maturity matching.

The capital structures in developing countries were studied by **Booth et al**. (2001). In their paper, they regressed three different measures of leverage (total book-debt ratio, long term book-debt ratio and long term market-debt ratio) on macroeconomic factors and firm-specific variables. Their attempt was to explain capital structure differences by considering the three theoretical models: the Static Trade-off Theory, the Agency Theoretic Framework and the Pecking-Order Hypothesis[3] . They found evidence for the latter model, where more profitable firms use less leverage. Firms with more tangible assets will tend to use more long term debt, although the substitution of long term for short term debt is less than one.

In addition to their findings, **Fan, Titman and Twite** (2004) use an extensive sample and find that the taxes, inflation and the suppliers of capital have substantial influence on capital structure choices. Consistent with the previous studies, leverage is positively related to the tangibility of assets and to the firm size. Moreover, size and asset tangibility are positively related to debt maturity structure. The leverage is measured as a ratio of book-value of debt to market-value of the firm, and debt maturity is measured as a ratio of long term debt to total debt. Leverage is also found to be negatively related to the market-to-book value of equity ratio, operating risk and profitability. The latter is another evidence of the Pecking Order Theory and confirms previous studies. Long term debt appears to be more used in firms with longer asset maturity, greater asset tangibility, larger size, higher profits and lower volatility.

Kumar and Francisco (2005) continued in line with the previous papers and on the Brazilian dataset they explore the extent to which the firm size affects financing patterns, together with credit constraint issues of small firms. Their analysis of financing patterns is constrained to simple comparison across firms of different sizes. According to their results, internal funds constitute the primary source of finance for all firms, followed by banking and trade credits. Leasing, credit card finance and equity play a minor role in financing. Other explanatory variables such as region, industry, manager's education and sales growth also seem to be important. Public banks seem to be more significant providers of capital for larger firms, whereas private commercial banks cater micro, small and medium firms.

Another research that uses disaggregated debt instead of debt-equity ratios is the one conducted by **Beck et al.** (2008), in which they examine how financial and institutional

[3] The Static Trade-Off Theory states that there is an optimal debt ratio attained when the marginal value of benefits associated with the debt issue offsets the costs. The Agency Theoretic Framework supposes there is a conflict of interest between inside and outside investors, and the optimal capital structure is attained by trading off agency costs against other financing costs, e.g. shorter debt maturity discourages shareholders in undertaking high-risk projects. The Pecking-Order Hypothesis claims that firms have preferences when making financing decisions, so that they prefer internal above external financing and when using external financing they rather issue debt than equity.

development affects financing of small firms, using a broad dataset covering almost fifty countries. Dependent variables are proportions of investments financed externally: by bank debt, equity, leasing, supplier credit, development banks and money lenders, together with the aggregate measure of proportion of investments financed externally. Although this was a cross-country research oriented on the impact of institutions, firm characteristics are also included as independent variables. They conclude that the small firms use less external (especially bank) finance, more informal finance and similar leasing or trade finance as compared to the larger firms. However, small firms finance less of their investments from government sources or development banks than larger firms.

Terra (2009) investigates simultaneously the choice between debt and equity and between short- and long term debt, on a sample of almost thousand firms from Latin America. Both leverage and debt maturity are dependent variables, constructed as a ratio of long term debt over book-value of equity and ratio of long term financial debt over sum of short term loans and long term financial debt respectively. Exogenous firm-specific variables are similar to the ones used in the extant literature. Findings show that decisions on capital structure and debt maturity are interdependent and act as complements. Moreover, there is a dynamic component in the determination of a firm's maturity structure.

Another study of companies in emerging markets, especially financing of small- and medium-size firms, was conducted by **Klapper et al.** (2002) on a sample of firms from Eastern European countries, including Croatia. Because of their dataset coverage, it qualifies rather as a general analysis of the debt maturity choice than a thorough capital structure examination. For example, for Croatia they use data on 4,271 firms and the data does not allow to distinguish the structure of total liabilities. From their summary statistics one can deduce that the leverage measured as total debt to equity ratio is low across the region, and smaller firms seem to be more leveraged. Most debt is on short term, which could be due to the concentration of firms in the service sector, and those firms usually have less fixed assets to pledge as a collateral. Interestingly, Croatia had the most indebted SMEs among the fifteen examined countries. They use OLS regressions in which the dependent variables are ratio of total-, short term and long term debt to equity, whereas the independent variables are size, age, profitability, growth, tangibility of assets, non-debt tax shields and dummies for industry and country. Regression results for the aggregated dataset show that the debt levels are positively related to firms' size and growth, in contrast to significant negative relation between indebtedness and firms' age or non-debt tax shields. Profitability is positively related to total and short term debt, but significantly negative to long term debt, whereas the tangibility of assets is significantly negative related to total and short term debt, but significantly positive with long term debt.

Other studies that are related to this paper in a more general way are valuable regarding the construction of variables and the obtained results, as well as the proposed hypotheses. **Beck et**

al. (2004) examine access to finance in developing countries, and **Cole** (1998) looks for a relationship between access to finance and bank relationships. The relationship lending was interesting to **Berger and Udell** (1995, 2002) but in the context of small firms. In the same line, small business lending was of importance to **Petersen and Rajan** (2002), **Cole et al.** (2004) and **Berger et al.** (2007). **Peek and Rosengreen** (1995) and **DeYoung et al.** (1999) addressed the issue of bank consolidation in the perspective of small business credit availability, which was also discussed by **Berger et al.** (1998) and **Degryse et al.** (2004). Another typical focus in this strand of literature was the impact of foreign bank penetration on small business lending as in **Kraft** (2002), **Clarke et al.** (2001, 2005), or on lending in general, as in **De Haas and Naaborg** (2006), **Detragiache et al.** (2006), **Haber and Musacchio** (2005), **Berger et al**. (2008) and **Giannetti and Ongena** (2009). The impact of consolidation interested **Berger et al.** (1995, 2004) and **Collender and Shaffer** (2003). Finally, **De Haas et al.** (2007) show that bank ownership, size and legal environment are the main determinants of bank customer focus and **Volz** (2008) relates to our research in terms of financing patterns, access and cost of finance in the transition countries.

3 Croatian firms' financing patterns

Before the close examination of the financing patterns of firms in Croatia, we shall briefly describe the short history and the current situation concerning financial markets and businesses in Croatia.

Since the early nineties, as in every transition country, there have been a lot of changes in the finance industry, ownership structure of companies and banks, and institutional environment in general. The financial industry is nowadays largely dominated by banking activities, and the latter are dominated by foreign banks. Croatia has experienced a substantial penetration of foreign banks, so that they nowadays account for over 90% of all banks' assets. State owned banks do not play a major role on the market, considering the fact that they represent less than 5% of total banks' assets. The concentration in the banking sector is higher than in the Western European countries, and also higher than the South-eastern European countries' average: the five largest banks held three quarters of all banks' assets in 2009. The stock market is still shallow and narrow, with the stock capitalization of around 40 % of the GDP (2009), but with a deepening trend.

It is worth noticing that EBRD's transition indicators for the progress made in banking reform and securities markets indicate that Croatia has reached the standards of an industrialized market economy when it comes to the banking reform and interest rate liberalization. However, the same indicators show that Croatia could still improve with respect to the competition policy and reform of non-bank financial institutions. Leasing activities started to develop more intensively only after 1997, and the Leasing Act came into force as late as 2006.

As of December 2009, insurance market's assets amounted to EUR3.94 billion, whereas the total banks' assets amounted to EUR51.8 billion.

We define a firms' size according to the Accounting Act, where small, medium and big firms are classified according to the three criteria: amount of the total assets, amount of the total income and the average number of employees[4]. In the following table we offer some descriptive statistics of our sample.

Table 1: Firms in the sample

Region	Firm size (number)				Asset size		Total Income	
	Small	*Medium*	*Big*	**TOTAL**	*in million EUR*	*% sample*	*in million EUR*	*% sample*
Zagreb	25908	561	234	**26703**	83,439.73	**61.46%**	54,058.41	**58.60%**
Dalmatia	12033	211	55	**12299**	16,361.49	**12.05%**	10,410.42	**11.29%**
Istria and Primorje	11482	169	53	**11704**	14,653.15	**10.79%**	9,241.34	**10.02%**
Northern Croatia	5453	158	43	**5654**	7,805.33	**5.75%**	7,417.16	**8.04%**
Slavonia	5305	178	47	**5530**	9,111.52	**6.71%**	7,368.66	**7.99%**
Central Croatia	3546	85	14	**3645**	4,381.93	**3.23%**	3,752.83	**4.07%**
TOTAL	63727	1362	446	**65535**	135,753.15	**100.00%**	92,248.82	**100.00%**

Table 1 reveals that the firms in our sample are heavily concentrated in three regions, being Zagreb with surroundings and the two coastal regions. Additionally, over 60% of all assets are concentrated within the firms in Zagreb and surroundings, together with almost 60% of the total income. Another interesting feature of the sample is that the number of small firms makes 97% of our dataset, but only slightly over half of the total assets. In contrast, the big firms make over 30% of the total assets although they make only a minor part of the dataset.

Table 2: Industries break-down

Industry	Number of firms	Asset size		Total income	
		in million EUR	% sample	*in million EUR*	% sample
Agriculture, forestry, fishing	1,451	4,212.40	3.10%	2,351.08	2.55%
Mining, quarrying	154	1,521.78	1.12%	1,338.32	1.45%
Manufacturing	8,186	26,854.73	19.78%	23,044.04	24.98%

[4] Accounting Act in Article 3 offers the following definition. Small firms satisfy at least two of the following criteria: total assets below HRK 32,5 million (≈EUR 4,5 million), total income below HRK 65 million (≈EUR 8,9 million) and maximum 50 employees. Medium firms are the firms which do not satisfy at least two of the mentioned criteria, but do satisfy at least two of the following criteria: total assets below HRK 130 million (≈EUR 17,8), total income below HRK 260 million (≈EUR 35,6 million) and maximum 250 employees. Big firms are then those firms which do not satisfy at least two of the previously mentioned criteria.

Industry	Number	Asset size		Total income	
Electricity, gas, steam, air conditioning	96	8,868.18	6.53%	3,355.71	3.64%
Water supply, sewerage, waste management and remediation	417	3,450.54	2.54%	1,037.20	1.12%
Construction	7,876	27,549.44	20.29%	9,268.12	10.05%
Wholesale and retail trade, repair of motor vehicles/motorcycles	20,329	23,114.89	17.03%	33,549.41	36.37%
Transporting and storage	2,600	7,111.54	5.24%	4,282.48	4.64%
Accomodation and food service activities	3,053	7,051.57	5.19%	1,660.99	1.80%
Information and communication	2,775	4,764.42	3.51%	3,858.60	4.18%
Financial and insurance activities	609	2,982.93	2.20%	708.82	0.77%
Real estate activities	2,123	6,657.59	4.90%	1,193.71	1.29%
Professional, scientific and technical activities	10,026	8,905.05	6.56%	4,248.80	4.61%
Administrative and support service activities	2,393	1,163.67	0.86%	1,210.91	1.31%
Public administration and defence, compulsory social security	19	147.13	0.11%	42.49	0.05%
Education	705	97.42	0.07%	129.53	0.14%
Human health and social work activities	642	199.30	0.15%	211.35	0.23%
Arts, entertainment and recreation	569	864.22	0.64%	511.96	0.55%
Other services	1,512	236.34	0.17%	245.31	0.27%
TOTAL	**65,535**	135,753.15	**100.00%**	92,248.82	**100.00%**

The prevalent industry in all of the regions and in the Croatian national income is trade, which represents one third of all of the firms in Croatia. It is followed by manufacturing and construction. The latter comprises firms that together own one fifth of the total firms' assets.

Table 3: Ownership structure of the firms

Ownership	Number of firms			% sample	Asset size		Total income	
	Small	*Medium*	*Big*		*in million EUR*	***% sample***	*in million EUR*	***% sample***
State and mixed-with major state stake	688	162	85	**1.43%**	43,544.46	**32.08%**	11,304.77	**12.25%**
Private since established	61607	830	215	**95.60%**	63,142.78	**46.51%**	59,474.98	**64.47%**
Private after privatization and mixed-with major private stake	924	361	146	**2.18%**	28,611.53	**21.08%**	21,156.38	**22.93%**
Common	508	9	-	**0.79%**	454.39	**0.33%**	312.70	**0.34%**
TOTAL	63727	1362	446	**100.00%**	135,753.15	**100.00%**	92,248.82	**100.00%**

Over 97% of the companies in Croatia are privately owned, and they make over 65 % of the total assets. State-owned companies represent around 1.5% of the total number of firms in the sample, yet they own almost one third of all firms' assets. Similarly, the firms that became private after privatization or they have mixed ownership with major private stake account for only 2.2% of the total number of firms but own over 20% of the total assets. One of the reasons

could be the portion of big firms within this group. Quite the opposite holds for the firms that are started as private. They are mostly small firms and as such they represent less than a half of total assets. Nonetheless, they create two thirds of the total income, as opposed to the state-owned firms which create slightly less than 12.5% of the total income even though they hold relatively big assets' share.

Table 4: The structure of the liabilities

Firm size	Equity	Long term liabilities	Short term liabilities	Other	TOTAL Liabilities
Small	31.64%	13.87%	52.94%	1.55%	100.00%
Medium	37.54%	18.05%	39.70%	4.71%	100.00%
Big	40.94%	15.90%	38.62%	4.55%	100.00%

Table 4 gives an idea about the first part of the main research question, the maturity structure of the liabilities. As shown, the most debt is on short term, and long- and short term liabilities together represent between 54 and 67% of total liabilities. The firms in Croatia have higher share of debt financing compared to equity. This is somewhat in contradiction with the Pecking Order Theory, which states that firms prefer internal to external financing. A study conducted on Eastern European countries (**Klapper et al**., 2002) showed that the debt levels are positively related to firms' size, but we demonstrate that the bigger companies actually have less debt than the small or medium ones.

In support to **Titman and Wessels** (1988), we also observe that the small firms use substantially more short term financing than large firms, which could be a reflection of their constraints in obtaining long term debt or equity. Most probably, the small firms are simply matching the maturities of their assets and liabilities, so that if the short term assets prevail, they would prefer obtaining short term debt as well. This remains to be inspected in the following Section, together with the hypothesis that medium and big firms have more long term debt because they have more borrowing capacities and smaller transaction costs when issuing long term debt or equity. **Demirgüç-Kunt and Maksimovic** (1999) find that small firms are destined to use more short term liabilities, claiming it is because that limits time during which they can exploit creditors without ending up in default. In that sense, it is rational that lenders protect themselves by monitoring the firm more frequently and changing the terms of financing before any large losses occur.

Table 5: Debt breakdown

Debt class	Term[1]/Firm size	Small	Medium	Big	Average
Trade credit	Long term	0.62%	0.47%	0.23%	**0.44%**
	Short term	31.53%	34.90%	27.78%	**31.40%**
Loans from banks and other FI	Long term	10.06%	21.71%	19.70%	**17.16%**
	Short term	3.64%	10.51%	11.63%	**8.59%**
Other loans, deposits and similar	Long term	5.31%	3.40%	2.29%	**3.67%**
	Short term	13.82%	3.18%	3.22%	**6.74%**
Loans from Group[2]	Long term	0.68%	2.00%	3.58%	**2.09%**
	Short term	1.22%	6.64%	11.38%	**6.41%**
Advance payment	Long term	0.08%	0.02%	0.09%	**0.06%**
	Short term	1.85%	2.54%	2.86%	**2.41%**
Issued securities	Long term	0.02%	0.23%	0.46%	**0.24%**
	Short term	0.27%	0.49%	1.59%	**0.78%**
Other debt[3]	Long term	0.91%	1.41%	1.01%	**1.11%**
	Short term	29.84%	12.51%	13.98%	**18.78%**
TOTAL DEBT		100.00%	100.00%	100.00%	100.00%

[1] Short term debt is due within one year and long term debt is due after one year

[2] Group refers to a group of connected parties, via ownership or otherwise

[3] The biggest portion of Other debt on long term refers to balance sheet category "other long term liabilities" and only smaller part refers to "long term deferred tax liabilities". Half of the Other debt on short term refers to taxes and contributions, one third are the salaries and the rest is mostly balance sheet category "other short term liabilities".

As for the second part of the main research question, the dominance of short term trade credit, followed by bank loans (mostly long term) is obvious. Summary statistics show that small and medium firms in Croatia on average have more trade credit than other forms of debt, and that the big firms choose bank loans over trade credit. This finding contradicts similar studies on transition countries, where the trade credit is found to be low. It also sheds light on previous contradicting remarks regarding the borrowing from banks. Namely, in the study conducted on transition countries world-wide, bank loans were found to be the most common source of external finance, whereas on a study conducted on a set of Baltic, CESEE[5] and CIS[6] countries it was found to be low. Finding that the bank finance is not the most used external financing source, and that it is chosen more by big than by small companies might be pertinent to CESEE countries, and definitely to Croatia. As we have pointed out, an important source of financial intermediation in Croatia is firms providing trade credit among themselves. This aberrant feature of financial structure of Croatian firms would perhaps be less pronounced if the financial markets would be deeper and broader.

[5] Central, Eastern and South Eastern European countries

[6] Commonwealth of Independent States

Finally, we can observe that it is mostly the big firms that issue securities, as expected. They are the least used funding source and this indicates underdeveloped financial markets and classifies Croatia as a bank-based economy.

The next interesting observation is that small firms have on average less loans obtained from the group of connected parties. A plausible explanation is that they less commonly belong to groups of connected parties or holdings, and operate more on stand-alone basis.

Interestingly enough, Table 4 showed that small firms have on average more debt than big firms, while now we document that on average they use less bank credit. This could be in line with the hypothesis proposed by **Berger et al.** (2001) that the large and foreign-owned banks have difficulties in extending relationship loans to informationally opaque small businesses, but it requires further analysis. However, as we can observe the average amount borrowed from big and foreign banks for all firms' sizes in Table 6, we can assume that there would be some support to the large bank barrier, and not to the foreign bank barrier hypothesis.

Table 6: Percentage of bank loans borrowed from big and foreign banks

Size	Average loans from big banks in Total bank loans	Average loans from foreign banks in Total Bank loans
Small	62.49%	89.91%
Medium	59.99%	88.19%
Big	68.89%	91.30%
F test value	*4.615*	*2.133*
p value	*0.0099*	*0.1184*

The F-test is used for equality of means hypothesis

Let us now consider the concentration of borrowing from banks, and identify the primary bank as the bank from which the firm borrows the most, as in **Berger, Klapper and Udell** (2001). If we take a total banking debt per firm and calculate the fraction borrowed from the primary bank as a measure of concentration, we observe highly concentrated borrowing, and the concentration is the highest among small and medium firms. This is presented in Table 7, which shows that the fraction of loans obtained from the single biggest lender is close to 100% on average for the smallest firms and decreases gradually to 90% on average for the biggest firms. Small firms borrow at least 39% of all bank loans from the primary bank, whereas big firms diversify their loans so that they borrow at least 18% of all bank loans from the primary bank. Furthermore, in the first part of the table we present the average number of bank relationships for firms of different size. Similarly to the previous conclusions, we observe that the smallest firms have on average less banking relationships than bigger firms, and that the number of banking relationships is higher for bigger firms. While small obtain loans from a maximum of four banks, for big firms the number of bank relationships can go up to 16. This could as well be a reflection of legal provision which prohibits banks to invest more than 10% of their total

exposure in one group of connected parties. Due to that provision, a big firm which needs substantial financing could get only a limited amount from one bank. Consequently, such a firm would have to approach other banks when the current bank reached the legal lending limit.

Table 7: Concentration of borrowing from banks[7]

Total assets (000EUR)	Assets percentile	Number of banking relationships			Loans from single biggest lender		
		Average	*Minimum*	*Maximum*	*Average*	*Minimum*	*Maximum*
Less than 100.7	0-25	1.07	1.00	4.00	0.99	0.39	1.00
100.7-311.8	25-50	1.16	1.00	4.00	0.97	0.30	1.00
311.8-1,126.5	50-75	1.25	1.00	8.00	0.96	0.26	1.00
Over 1,126.5	75-100	1.62	1.00	16.00	0.90	0.18	1.00
F test value		*752.83*			*523.24*		
p value		*0.0000*			*0.0000*		

The F-test is used for equality of means hypothesis

Our findings agree with previous work from **Petersen and Rajan** (1994) who use various measures of borrowing concentration and find that the small firm borrowing is the most concentrated, and that larger firms diversify their borrowing. Here again we are facing a possible confirmation of a single-bank firm-opacity hypothesis as proposed by **Berger et al.** (2001), under which informationally opaque firms are more likely to have a single lender.

4 Data description and methodology

In this paper we use firm-level figures from balance sheet statements and altogether we employ data on 65,534 firms, together with data on total loans from 32 different banks as of end of 2008. The dataset was obtained from FINA database and augmented by HNB's loans database. The used dataset allows us relatively complete insights into decisions of firms to borrow from large versus small banks, foreign-owned versus domestically-owned banks, from a single bank versus multiple banks, as well as analysis of financing structure in general.

The capital structure studies look primarily at variations in debt ratios across firms, whereas we try to explain variations in the structure of debt. We analyze separately every decision of financing mix- the disaggregated sources of finance- rather than aggregate measures of debt. Admittedly, we do not check for institutional differences because we do not deal with cross-country dataset.

It is important to mention that the firms in our sample which are joined in a group of connected parties do not report their balance sheets in a consolidated manner, which means that they might appear to have lower leverage than actual, because they might report affiliates' net

[7] It should be noted that the tables 6 and 7 were produced based on a reduced sample, which excluded firms which do not have any relationships with banks and consequently no bank loans.

assets as long term investments. Also, when window-dressing the balance sheet firms sometimes place the debt they take on in subsidiaries and then borrow it back via inter-firm trade credit or similar instrument.

Besides the concern of concealing debt in subsidiaries, there are some other country-specific characteristics of Croatia. Namely, until a few years ago, a principle of notional interest rate on equity was applied, which enabled entrepreneurs to report higher costs and consequently report lower profit and taxes. However, since this rule was abandoned, there is a suspicion that entrepreneurs tend to report minimum equity in their balance sheets and the rest of the equity as a loan because the interest rate is accepted as a profit deducing cost. Firms that have zero shareholder equity remained in the sample (0.7%), due to the fact that the lenient enforcement of minimum equity provision enables enterprises to operate without the shareholder equity.

The correlation among dependent and independent variables is presented in the tables 8 and 9 in the Appendix. In brief, both variation in debt maturity and debt classes depends on the firms' characteristics, lenders' and bank relationship characteristics, as well as on the interaction term we have included.

After examining correlations[8], we proceed to the assessment of the determinants of firms' financing patterns. In order to answer our research questions, we will examine two different kinds of dependent variables. In the first regression our dependent variables will be the ratios of equity, long- and short term liabilities to total assets, with an aim to discover what affects the choice on maturity of the liabilities. In the second regression, our dependent variables will become the ratios of different classes of liabilities to total assets, and we will examine the determinants of financing mix decisions. Because the dependent variables in both cases take values between 0 and 100%, we will use the regression model that accounts for the limited dependent variable. Hence, we estimate a Tobit regression[9] of the general form:

$$F = \beta_0 + \beta_1 \times FirmCharacteristics \quad + \beta_2 LenderCharacteristics + \beta_3 \times \mathrm{Re}lationshipCharacteristics +$$
$$+ \beta_4 \times InteractionTerm + \varepsilon$$

We include firm size, collateral strength, growth opportunities, ownership, assets structure, region in which the company is registered and industry in which it is operating as firm characteristics.

[8] Because of the multicollinearity concerns, some of the variables were not included into regressions. Namely, there is a high correlation between the amount borrowed from domestic banks and the dummy which denotes borrowing only from domestic banks, as well as between the collateral strength and the ratio of the long term assets to total assets.

In the extant literature, the size is often used as an inverse proxy for the expected costs of bankruptcy. In other words, direct bankruptcy costs represent a larger proportion of a firm's value for smaller firms. Moreover, larger firms could be more diversified and therefore less prone to bankruptcy. The firm size is defined as in Chapter 3, according to the Accounting Act.

As a proxy for collateral strength, we will use the ratio of tangible assets to total assets. This can also be perceived as a proxy for financial constraints because the greater proportion of tangible assets should encourage lenders be supply more loans. We use the ratio of research and development expenses within intangible assets relative to total assets as a proxy for growth opportunities. Furthermore, research and development expenses indicate whether a firm has unique and specialized products.

The ownership is regarded from both the type and the origin point of view. The origin of the firm denotes whether it is a domestic or a foreign firm. Since state companies might be catered by banks, we distinguish among the four types of the ownership: state and mixed with major state stake, private after privatization and mixed with major private stake, private since establishment and common ownership companies.

The asset structure refers to the ratio of short term assets, as well as of inventories to total assets. The industry dummies are used because we expect that the firms across different industries have different financing needs and hence different financing patterns. Also, there are some industries in which the firms are perceived to be more likely to default. Banks may use the industry characteristics in assessing the borrower credit quality, and may not lend to firms in certain industries. Since some regions might be more developed and have higher economic activity level, we will control for these effects by using the region dummies. The region dummies denote in which region a particular firm is registered.

Lender characteristics refer to the size and the ownership of the lender. For the lender size, we introduce a dummy indicating whether a company obtains more than a half of its bank loans from the top six banks. As regards to the lender ownership we can discriminate between companies that have all of the borrowings coming from domestic or from foreign lenders.

We take the top six banks in terms of the total assets as the big banks[10] and the rest as small. The size of the bank might influence its portfolio composition i.e. its customer choice. Studies that support the large-bank barriers hypothesis state that large banks have difficulty extending relationship loans to informationally opaque small businesses. However, large banks may have a comparative advantage in using transaction technologies such as credit-scoring and asset-

[10]The big banks according to the Banks Bulletin, http://www.hnb.hr/publikac/bilten-o-bankama/ebilten-o-bankama-21.pdf, are Zagrebacka banka, Privredna banka Zagreb, Raiffeisen banka, Erste banka, Hypo Alpe Adria banka and SG Splitska banka

based lending that can be used to finance smaller and more opaque customers, offsetting their disadvantage in relationship lending. The ownership of the bank might also be important in its customer choice. We classify banks as foreign if foreign ownership exceeds 50%.

Another factor that might affect firms' financing pattern is the borrowing relationship, i.e. whether a firm has multiple bank relationships or a unique relationship. Firms with a single bank relationship, might have a lower bargaining power. On the other hand, some studies show it is beneficial for small firms to have a unique banking relationship because having a single lender lowers the cost of credit and increases the availability of credit. Due to the possibility that the domestic banks often represent the only source of funding for some firms, and important implications of such a finding, we include the variable which interacts borrowing only from domestic bank and a single bank relationship.

We do not include profitability variables in our analysis because the correlation between return on assets and debt-to-equity ratio seems to be insignificant. Moreover, the profitability variables might be partially determined by the firm's leverage ratio and hence reflecting reverse causality.

5 Empirical Results

The two main questions, as already stated, are what determines the maturity structure of financing sources and what determines the choices between various classes of liabilities. To that end, in the regression analysis we have examined two different kinds of dependent variables. The negative coefficients mean that the independent variable is related to a lower funding from the examined source. We restrict ourselves to comment only the significant results.

Table 10. Determinants of liabilities' maturity structure

The regression estimated is:

$$FinancingSource / TotalAssets = \beta_0 + \beta_1 MediumDummy + \beta_2 SmallDummy + \beta_3 ST / TA + \beta_4 Inventories / TA + \beta_5 Collateral Strength + \beta_6 GrowthOpportunities$$
$$+ \beta_7 ForeignDummy + \beta_8 ... \beta_{10} OwnershipDummies + \beta_{11} ... \beta_{14} IndustryDummies + \beta_{15} \text{Re}\, gionDummy + \beta_{16} OnlyDomesticDummy + \beta_{17} OnlyForeignDummy$$
$$+ \beta_{18} BigBanksDummy + \beta_{19} SingleDummy + \beta_{20} MultipleDummy + \beta_{21} OnlyDomesticDummy * SingleDummy + \varepsilon$$

where dependent variables in the following three specifications are: equity to total assets ratio, long term liabilities to total assets ratio and short term liabilities to total assets ratio. MediumDummy takes the value of 1 if the firm is of medium size and zero otherwise, SmallDummy takes the value of 1 if the firm is of small size and zero otherwise, ST/TA is the ratio of short term assets to total assets, Inventories/TA are inventories divided by total assets, CollateralStrength is a ratio of tangible assets to total assets, GrowthOpportunities are the research and development expenses divided by total assets, ForeignDummy takes the value of 1 if the firm has a major foreign ownership and zero otherwise, OwnershipDummies denote a particular type of the ownership, where the dummy takes the value of 1 if the firm has a particular type of ownership and zero otherwise, IndustryDummies refer to a particular industry where the dummy takes the value of 1 if the firm's activity is registered within a particular industry and zero otherwise, RegionDummy takes the value of 1 if the firm's activity is registered within a Zagreb region and zero otherwise, OnlyDomesticDummy takes the value of 1 if the firm borrows only from domestic banks and zero otherwise, OnlyForeignDummy takes the value of 1 if the firm borrows only from foreign banks and zero otherwise, BigBanksDummy takes the value of 1 if the firm borrows over 50 % of total bank loans from big banks and zero otherwise, SingleDummy takes the value of 1 if the firm

borrows only from one bank and zero otherwise, MultipleDummy takes the value of 1 if the firm borrows from two or more banks and zero otherwise, and the last term is an interaction one, represented by a product of OnlyDomesticDummy and SingleDummy.

	Equity	Long-term Liabilities	Short-term Liabilities
medium	-0.042**	0.031**	0.007
	0.0130	*0.0417*	*0.6025*
small	-0.151***	0.027*	0.082***
	0.0000	*0.0592*	*0.0000*
Foreign ownership	-0.144***	0.291***	-0.090***
	0.0000	*0.0000*	*0.0000*
Manufacturing	0.031***	-0.040***	0.019***
	0.0000	*0.0000*	*0.0000*
Construction	-0.055***	0.020***	0.055***
	0.0000	*0.0010*	*0.0000*
Wholesale and retail trade	-0.003	-0.051***	0.055***
	0.3847	*0.0000*	*0.0000*
Professional and technical activities	0.104***	-0.053***	-0.060***
	0.0000	*0.0000*	*0.0000*
reg 1- Zagreb	0.032***	-0.030***	-0.016***
	0.0000	*0.0000*	*0.0000*
Private since establishment	-0.078***	0.112***	0.124***
	0.0000	*0.0000*	*0.0000*
Private and majorly private ownership	0.123***	0.063***	-0.027**
	0.0000	*0.0002*	*0.0223*
Common ownership	-0.071***	0.029	0.0961***
	0.0003	*0.2667*	*0.0000*
Collateral strength	0.721***	0.314***	-0.688***
	0.0000	*0.0000*	*0.0000*
Growth opportunities	0.645***	0.143	-0.612***
	0.0000	*0.4405*	*0.0002*
ST/TA	0.948***	-0.393***	-0.557***
	0.0000	*0.0000*	*0.0000*
Inventories/TA	-0.292***	0.281***	0.189***
	0.0000	*0.0000*	*0.0000*
Single bank	-0.085***	0.265***	-0.006**
	0.0000	*0.0000*	*0.0361*
Multiple bank	-0.106***	0.348***	-0.015***
	0.0000	*0.0000*	*0.0014*
Borrowing only from domestic banks	-0.083**	0.007	0.061*
	0.0116	*0.8126*	*0.0546*
Borrowing only from foreign banks	0.028***	-0.012	-0.015*
	0.0003	*0.1459*	*0.0589*
Borrowing >50% from big banks	0.009***	0.038***	-0.008***
	0.0025	*0.0000*	*0.0063*
Single*Borrowing only from domestic	0.066**	0.009	-0.065**
	0.0470	*0.7692*	*0.0444*

*, **, *** indicate significance levels at 10, 5 and 1 % respectively

We are using the heteroscedasticity consistent standard errors (Huber-White)

The Table 10 presents further evidence that the small firms use less equity and more external finance than the big ones. This contradicts previous study conducted on transition countries world-wide, where there was no robust evidence that the use of equity finance varies with firm size. The pronounced use of external finance by small enterprises mostly refers to short term liabilities. Furthermore, foreign owned firms seem to take on more long term liabilities, instead

of equity or short term liabilities, also in the contradiction with the previously mentioned study which showed that the foreign firms rely more on equity.

The manufacturing firms rely both on equity and short term liabilities, and the professional services depend on the equity. Conversely, trade enterprises take on mostly short term liabilities, similar to the construction firms which are also debt-dependent. This may have a systemic implication, because the fast credit growth experienced in the past period has been geared toward non-tradables. According to our data, this sector is far more leveraged than tradable sector.

The companies that have more collateral strength are relying more on the long- than on the short term finance, similar to the companies that possess growth opportunities. This finding confirms the assumptions on maturity matching. Surprisingly, inventories form part of the short term assets, but offer reverse results. The subjects that have higher share of short term assets in the total assets have more equity and less liabilities in their funding. In contrast, higher portion of inventories in total assets implies higher reliance on short- and long term liabilities. Aforementioned leads to the conclusion that there is another constituent of the short term assets, which leads to the distorted impression. Possibly, the companies which have higher share of short term claims and longer collection periods, are reluctant to borrow and possibly end up insolvent, so they prefer equity funding instead. Anyhow, these findings confirm the necessity to include both the short term- to total assets and inventories to total assets ratio, because although they appear similar they provide more thorough insights into the financing patterns.

Interestingly, we recognize similar funding decisions with firms that have only one bank relationship and the ones that have multiple banks as their partners. Nevertheless, the businesses that borrow only from domestic banks seem to have less need for equity finance, compared to the businesses that borrow only from foreign banks. But businesses that have a unique banking relationship with a domestic bank have a similar need for equity as the ones borrowing only from foreign banks. Hence, the assumption that a unique banking relationship with a domestic banks can serve as a safe haven to a company, and be a good substitute for equity, is not confirmed by the data. Finally, the companies whose borrowings are mostly obtained from the big banks prefer a long term debt or equity to a short term debt.

We proceed by summarizing the results from the Table 11.

Table 11. Determinants of financing patterns

The regression estimated is:

$$FinancingSource / TotalAssets = \beta_0 + \beta_1 MediumDummy + \beta_2 SmallDummy + \beta_3 ST / TA + \beta_4 Inventories / TA + \beta_5 CollateralStrength + \beta_6 GrowthOpportunities$$
$$+ \beta_7 ForeignDummy + \beta_8 ... \beta_{10} OwnershipDummies + \beta_{11} ... \beta_{14} IndustryDummies + \beta_{15} \mathrm{Re}\, gionDummy + \beta_{16} OnlyDomesticDummy + \beta_{17} OnlyForeignDummy$$
$$+ \beta_{18} BigBanksDummy + \beta_{19} SingleDummy + \beta_{20} MultipleDummy + \beta_{21} OnlyDomesticDummy * SingleDummy + \varepsilon$$

where dependent variables in the following five specifications are: equity to total assets ratio, other loans&deposits to total assets ratio, bank and other financial institutions' loans to total assets ratio, trade credit to total assets ratio, and other long- and short term debt to total assets ratio . MediumDummy takes the value of 1 if the firm is of medium size and zero otherwise, SmallDummy takes the value of 1 if the firm is of small size and zero otherwise, ST/TA is the ratio of short term assets to total assets, Inventories/TA are inventories divided by total assets, CollateralStrength is a ratio of tangible assets to total assets, GrowthOpportunities are the research and development expenses divided by total assets, ForeignDummy takes the value of 1 if the firm has a major foreign ownership and zero otherwise, OwnershipDummies denote a particular type of the ownership, where the dummy takes the value of 1 if the firm has a particular type of ownership and zero otherwise, IndustryDummies refer to a particular industry where the dummy takes the value of 1 if the firm's activity is registered within a particular industry and zero otherwise, RegionDummy takes the value of 1 if the firm's activity is registered within a Zagreb region and zero otherwise, OnlyDomesticDummy takes the value of 1 if the firm borrows only from domestic banks and zero otherwise, OnlyForeignDummy takes the value of 1 if the firm borrows only from foreign banks and zero otherwise, BigBanksDummy takes the value of 1 if the firm borrows over 50 % of total bank loans from big banks and zero otherwise, SingleDummy takes the value of 1 if the firm borrows only from one bank and zero otherwise, MultipleDummy takes the value of 1 if the firm borrows from two or more banks and zero otherwise, and the last term is an interaction one, represented by a product of OnlyDomesticDummy and SingleDummy.

	Equity	**Other loans, deposits and similar**	**Loans from banks and other FI**	**Trade credit**	**Other LT&ST debt**
medium	-0.042**	-0.028	0.037**	0.045***	-0.003
	0.0130	*0.1539*	*0.0105*	*0.0000*	*0.5858*
small	-0.151***	0.095***	0.002	0.071***	0.039***
	0.0000	*0.0000*	*0.8806*	*0.0000*	*0.0000*
Foreign ownership	-0.144***	0.172***	-0.081***	0.007*	-0.090***
	0.0000	*0.0000*	*0.0000*	*0.0627*	*0.0000*
Manufacturing	0.031***	-0.065***	-0.000	0.040***	-0.007***
	0.0000	*0.0000*	*0.9656*	*0.0000*	*0.0047*
Construction	-0.055***	-0.000	0.036***	0.0218***	0.017***
	0.0000	*0.9461*	*0.0000*	*0.0000*	*0.0000*
Wholesale and retail trade	-0.003	-0.029***	-0.009**	0.080***	-0.022***
	0.3847	*0.0000*	*0.0236*	*0.0000*	*0.0000*
Professional and technical activities	0.104***	-0.074***	-0.009*	-0.050***	0.008***
	0.0000	*0.0000*	*0.0669*	*0.0000*	*0.0009*
reg 1- Zagreb	0.032***	-0.008**	-0.021***	-0.003*	-0.017***
	0.0000	*0.0183*	*0.0000*	*0.0945*	*0.0000*
Private since establishment	-0.078***	0.295***	0.118***	0.009	0.017***
	0.0000	*0.0000*	*0.0000*	*0.1274*	*0.0052*
Private and majorly private ownership	0.123***	0.122***	0.069***	-0.026***	-0.027***
	0.0000	*0.0000*	*0.0000*	*0.0004*	*0.0002*
Common ownership	-0.071***	0.200***	0.031	0.025**	-0.001
	0.0003	*0.0000*	*0.1144*	*0.0468*	*0.9322*
Collateral strength	0.721***	-0.117***	0.240***	-0.096***	-0.227***
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*

	Equity	Other loans, deposits and similar	Loans from banks and other FI	Trade credit	Other LT&ST debt
Growth opportunities	0.645***	-0.315*	0.053	-0.154	-0.266***
	0.0000	*0.0783*	*0.7130*	*0.1112*	*0.0002*
ST/TA	0.948***	-0.608***	-0.163***	0.059***	-0.157***
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*
Inventories/TA	-0.292***	0.413***	0.198***	0.056***	-0.040***
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*
Single bank	-0.085***	-0.048***	0.369***	0.059***	-0.046***
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*
Multiple bank	-0.106***	-0.065***	0.465***	0.070***	-0.069***
	0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000*
Borrowing only from domestic banks	-0.083**	0.036	-0.001	0.006	0.012
	0.0116	*0.3804*	*0.9592*	*0.7768*	*0.3330*
Borrowing only from foreign banks	0.028***	-0.014	-0.033***	-0.000	0.010***
	0.0003	*0.1986*	*0.0000*	*0.9466*	*0.0037*
Borrowing >50% from big banks	0.009***	-0.023***	0.033***	0.029***	-0.017***
	0.0025	*0.0000*	*0.0000*	*0.0000*	*0.0000*
Single*Borrowing only from domestic	0.066**	-0.029	0.006	-0.003	-0.013
	0.0470	*0.4891*	*0.8370*	*0.8878*	*0.3071*

*, **, *** indicate significance levels at 10, 5 and 1 % respectively

We are using the heteroscedasticity consistent standard errors (Huber-White)

Small firms employ more trade credit and other debt, together with loans other than bank or group loans, because they naturally have less access to the financial markets. The foreign owned companies apparently use less equity, bank loans and other debt and rely more on other loans and trade credit instead. We do not find any significant results for the determinants of the corporate debt securities funding, which implies underdeveloped markets in general.

Most of the considered industries appear to take on trade credit[11], except for the professional activities which prefer equity financing. It is consistent with theory predicting that companies buying goods make more purchases on account than those buying services, and that the greater reliance on trade credit should be marked among companies that more intensively use tangible inputs. Compared to the state companies, the companies that are private ever since their establishment rely less on equity and more on bank and other loans. This finding indicates the fragility of the small private companies which are founded with external finance. Privatized companies need more equity and loans than the state owned ones, but they need less trade credit and other debt. This finding is also important because it contradicts the engrained belief that banks in transition economies favor lending to supposedly safe borrowers, such as government-owned firms, because of the information opaqueness.

[11] Croatian trade credit market has some interesting features, because it is an unsecured instrument, but there is a possibility to compensate with goods or services for the outstanding credit. In a case of a bankruptcy, the trade credit is junior to banks', employees' and state funds' claims.

As expected, the businesses that have more collateral strength prefer equity and bank loans to other sources of financing. The ones with pronounced growth potential resort to equity rather than to external finance.

Again the results differ for the ratio of short term- and of inventories- to the total assets. The higher portion of inventories in total assets makes a firm more prone to take on external funding. In contrast, the higher ratio of short term- to total-assets is related to the higher equity funding and lower reliance on bank and other loans.

We find almost no differences in the preferences of the firms having one or multiple banking relationships. However, the firms which borrow only from domestic banks are related to the lower use of equity. On the other hand, the firms borrowing exclusively from the foreign banks seem to count more on equity and less on bank loans. But we cannot confirm that having a unique banking relationship with a domestic bank is particularly helpful, because our interaction term has a positive equity coefficient, implying that those companies are related to the higher use of the equity as well. On the other hand, the firms that obtain most of their loans from the big banks have reduced need for other type of loans or debt.

The finding that a number of banking relationships does not influence companies' financing patterns might reveal a good credit policies of the Croatian banks. Namely, if we had found that the firms having a unique banking relationship rely heavily on bank loans, this would have implied that there are firms which get almost all of their funding through one strategic bank. In that case, the bank would be substantially exposed to the default risk of a particular company, to the extent that they would have to continue to support the firm even in the adverse circumstances. Granting smaller loans and not offering strategic support enables banks to write-off their loans to deteriorated businesses more easily. Aforementioned is unfavorable for the businesses themselves, because they do not get a reliable partner and possibly have higher borrowing costs. Some studies show that the banks realize benefits from offering a unique banking relationship, such as winning customer loyalty, cross-selling possibilities and culling information on businesses. However, empirical data for Croatia indicates that banks resort more to the pure transactions lending than to the relationship lending.

6 Conclusions

In this study we examine the financing patterns and the determinants thereof. We explore a wide range of firm-level characteristics and financing sources. An important strength of this research is the unique micro dataset which contains the whole universe of Croatian companies. Moreover, we match that data with the information on bank loans, which allows us to search for funding determinants among factors other than the ones in similar studies.

The small firms are more leveraged than the bigger firms. The bigger the company, the more equity it uses. It is confirmed that the access to finance is of the paramount importance for the endurance of smaller companies. Moreover, our results confirm the fragility of small, mostly private, companies that rely heavily on the external funding from the mere start-up. Policies aimed at improving access to finance, such as government sponsored loan programs, should consider this greater dependence of small and medium enterprises on external debt financing.

We find that the big firms diversify their borrowing across more banks, whereas the small companies tend to have less lenders and borrow more from the single biggest lender. Remarkably, previous studies pointed to the low levels of trade credit in the region, whereas we show that the most popular debt class for the firms in our sample is the short term trade credit, followed by bank and other loans. Thus, firms act as financial intermediaries in providing trade credit. Consequently, a strong legal enforcement of payment agreements is crucial for a sound liquidity of Croatian economy.

Equally interesting are the results identifying firm, lender and lending relationship characteristics that affect the choice on liabilities' maturity and structure. Unlike the similar studies on transition countries, we find evidence that the small companies use less equity finance than the big firms.

Companies that have more collateral to pledge expectedly rely on equity and long term bank loans, similar to the companies with more pronounced growth opportunities. In addition to existing literature, we find that they resist the short term debt, especially non-bank loans, trade credit and other debt. The ownership also matters, and, as opposed to similar studies, we find that the foreign firms rely less on equity and more on long term loans not originated by banks.

The asset structure is another prominent determinant of the financing decisions. A higher ratio of inventories in the total assets is negatively related to the equity as a financing source, and seems to correspond to bigger utilization of debt, especially bank and other loans. However, more short term assets in general will prompt the firm to have more equity and less debt, which particularly refers to bank and other loans. One feasible explanation for this unexpected result possibly lies in another category within the short term assets, typically short term claims. The companies that are facing problems in collecting claims would prefer having more own capital instead of ending up insolvent, whereas the companies which have more inventories trust they can pledge them and obtain a loan if necessary. This argument corresponds to the already mentioned illiquidity issues.

A few important results regarding the bank lending practices emerged and are worth summarizing. Big banks play an important role in firms' funding, due to the high banking sector concentration. We show that borrowing mostly from the big banks reduces the need for other

loans and debt. One possible indicator of transaction- instead of relationship lending is that the financing decisions seemingly do not vary among the companies that have only one or multiple banking relationships. Businesses that heavily rely on a domestic bank have a similar need for equity as the ones borrowing only from foreign banks. Hence, a unique relationship with a domestic bank is not a substitute for equity and does not serve as a safe haven to a company more than a relationship with the foreign bank would do. There is no argument for preference of domestic banks over foreign banks as regards to the soundness of the corporate financing.

As with any individual country's dataset, the current results cannot be generalized without a caution. Also, the data was collected prior to the crises, at the end of 2008. The crises might have had an impact on financing choices. This could especially be the case for the small and medium enterprises, whose access to finance was impaired during the crises. Expanding the dataset to a longer period to account for a possible post-crises changes in the financing patterns is an imperative for further research.

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APPENDIX

Table 8. Correlation table I

	big	medium	small	foreign	A	C	D	F	G	H	J	M	OtherIND	stateMIX	pvt est	pvtMIX	common	reg 1	reg 2	reg 3	reg 4	reg 5	reg 6
big	1																						
medium	-0.0121***	1																					
small	-0.4915***	-0.865***	1																				
foreign	0.0069**	0.0243***	-0.0246***	1																			
A	0.0027	0.0094***	-0.0095***	-0.0305***	1																		
C	0.0429***	0.0757***	-0.0874***	-0.0408***	-0.0569***	1																	
D	0.0357***	0.0364***	-0.0496***	0.012***	-0.0058*	-0.0145***	1																
F	-0.0101***	0.0002	0.005	0.0291***	-0.0557***	-0.1397***	-0.0142***	1															
G	-0.0126***	-0.0143***	0.0187***	-0.0468***	-0.101***	-0.2534***	-0.0257***	-0.2479***	1														
H	0.0137***	0.0055*	-0.0116***	-0.0249***	-0.0306***	-0.0768***	-0.0078**	-0.0752***	-0.1363***	1													
J	0.0002	-0.0174***	0.0151***	-0.0146***	-0.0317***	-0.0795***	-0.0081**	-0.0778***	-0.1411***	-0.0428***	1												
M	-0.0285***	-0.0427***	0.0514***	-0.0588***	-0.064***	-0.1606***	-0.0163***	-0.1571***	-0.285***	-0.0864***	-0.0894***	1											
OtherIND	0.002	-0.009**	0.0069**	0.1507***	-0.072***	-0.1807***	-0.0184***	-0.1768***	-0.3207***	-0.0972***	-0.1006***	-0.2033***	1										
stateMIX	0.1231***	0.1286***	-0.1738***	-0.0317***	0.0021	0.0001	0.1233***	-0.0172***	-0.0593***	0.0151***	0.0073**	-0.0158***	0.0751***	1									
pvt est	-0.1914***	-0.2463***	0.3105***	0.0585***	-0.1099***	-0.0639***	-0.0755***	0.0208***	0.0884***	-0.0106***	0.0097***	0.0224***	-0.0395***	-0.5609***	1								
pvtMIX	0.1731***	0.2425***	-0.2981***	-0.0396***	0.0187***	0.0892***	0.0052*	-0.009**	-0.0555***	0.0061*	-0.0092***	-0.0026	-0.0058*	-0.018***	-0.6966***	1							
common	-0.0074**	-0.0022	0.0056*	-0.0278***	0.2211***	0.0008	0.0011	-0.0102***	-0.0337***	-0.0058*	-0.0171***	-0.0264***	0.0004	-0.0108***	-0.4157***	-0.0134***	1						
reg 1	0.0198***	0.0014	-0.0111***	-0.0251***	-0.0816***	-0.039***	-0.0034	-0.0319***	0.048***	-0.0324***	0.0888***	0.0947***	-0.0835***	-0.0456***	0.075***	-0.0389***	-0.0484***	1					
reg 2	-0.0137***	-0.0123***	0.0175***	0.0379***	0.0069**	-0.0283***	-0.0072**	0.0139***	-0.0245***	0.0193***	-0.0452***	-0.0415***	0.0917***	0.0183***	-0.0139***	-0.0031	0.0128***	-0.3986***	1				
reg 3	-0.013***	-0.0208***	0.0246***	0.1104***	-0.0207***	-0.0145***	-0.0044	0.0311***	-0.0372***	0.0034	-0.0304***	-0.0194***	0.0707***	-0.0027	0.0144***	-0.0032	-0.0245***	-0.3867***	-0.2242***	1			
reg 4	0.003	0.0155***	-0.015***	-0.0556***	0.0129***	0.0626***	0.0096***	0.012***	-0.0058*	0.015***	-0.018***	-0.0376***	-0.0256***	-0.0022	-0.0279***	0.0192***	0.0359***	-0.2549***	-0.1477***	-0.1433***	1		
reg 5	0.0063*	0.0243***	-0.0243***	-0.0634***	0.1114***	0.0291***	0.0042	-0.0039	0.0096***	0.0022	-0.023***	-0.0252***	-0.0414***	0.033***	-0.0615***	0.0347***	0.0412***	-0.2518***	-0.146***	-0.1416***	-0.0933***	1	
reg 6	-0.0088**	0.0044	0.0007	-0.0504***	0.0468***	0.0439***	0.0099***	-0.0173***	-0.0037	0.0101***	-0.0127***	-0.0235***	-0.014***	0.0337***	-0.0522***	0.0285***	0.0288***	-0.2013***	-0.1167***	-0.1132***	-0.0746***	-0.0737***	1
collateral	0.0307***	0.0595***	-0.0672***	0.1247***	0.0443***	0.0201***	0.0161***	-0.0112***	-0.1453***	0.0419***	-0.0519***	-0.0511***	0.1998***	0.0732***	-0.0882***	0.061***	0.0058*	-0.134***	0.0839***	0.0433***	0.0208***	0.0141***	0.0299***
growth	0.0043	0.0033	-0.005	-0.0026	0.0078**	0.0031	-0.0005	-0.0095***	-0.0068**	-0.0053*	0.018***	-0.0056*	0.0089**	0.0145***	-0.0104***	0.0032	-0.0006	-0.0065*	0.0041	-0.0008	0.0048	0.0008	0.0014
LT/TA	0.0488***	0.0754***	-0.0901***	0.1238***	0.0393***	0.0122***	0.0162***	-0.0218***	-0.1564***	0.0394***	-0.0429***	-0.0351***	0.2121***	0.0776***	-0.1068***	0.0807***	0.0102***	-0.1153***	0.073***	0.0407***	0.0187***	0.0084**	0.0221***
ST/TA	-0.0339***	-0.0473***	0.0582***	-0.1354***	-0.0339***	0.0052*	-0.0142***	0.025***	0.1496***	-0.0329***	0.0401***	0.0627***	-0.2511***	-0.0666***	0.0875***	-0.0635***	-0.0086**	0.1308***	-0.0779***	-0.071***	-0.0097***	-0.0001	-0.0173***
Inventories/TA	-0.0045	0.0062*	-0.0032	-0.0384***	0.0092***	0.0311***	-0.0202***	0.0197***	0.3058***	-0.0834***	-0.0575***	-0.198***	-0.1532***	-0.051***	0.0509***	-0.0189***	-0.0185***	0.0021	-0.0095***	-0.0184***	0.0141***	0.0166***	0.0049
Single bank	-0.0047	0.0349***	-0.028***	-0.0952***	0.0278***	0.053***	-0.0015	0.0226***	0.0349***	0.024***	-0.028***	-0.0738***	-0.045***	-0.0014	-0.014***	0.021***	-0.0005	-0.0569***	-0.0098***	-0.0106***	0.056***	0.0413***	0.0377***
Multiple bank	0.1513***	0.1791***	-0.2319***	-0.0583***	0.0239***	0.0505***	0.0043	0.0099***	0.0322***	0.0064*	-0.0139***	-0.0599***	-0.0394***	0.0374***	-0.0879***	0.0939***	-0.0016	-0.0457***	0.0084**	-0.0117***	0.0373***	0.0326***	0.0183***
LoansDOM	0.0157***	0.046***	-0.0479***	-0.0413***	0.019***	0.0285***	-0.0019	0.0128***	0.0021	0.0079**	-0.011***	-0.0394***	-0.0063*	0.0076**	-0.0357***	0.0377***	0.0103***	-0.0437***	0.0376***	0.0297***	-0.0358***	0.0077**	0.0145***
onlyDOM	-0.0051*	0.014***	-0.0097***	-0.0352***	0.0174***	0.022***	-0.0011	0.0134***	-0.0006	0.0066**	-0.0117***	-0.0316***	-0.0037	0.0044	-0.0214***	0.0212***	0.0087**	-0.0368***	0.0313***	0.0284***	-0.0326***	0.0035	0.0139***
onlyFOR	-0.0773***	-0.096***	0.1224***	0.0468***	-0.0249***	-0.0351***	0.0005	-0.0166***	-0.0026	-0.0075**	0.0127***	0.0468***	0.01***	-0.0244***	0.0596***	-0.0596***	-0.007	0.0452***	-0.0413***	-0.0243***	0.0368***	-0.0149***	-0.0132***
EQUITY	0.0251***	0.0277***	-0.0367***	-0.1189***	-0.0281***	0.0231***	-0.006*	-0.0734***	-0.0591***	-0.013***	0.0535***	0.1884***	-0.0724***	0.0272***	-0.0724***	0.0818***	-0.0036	0.0847***	-0.0503***	-0.047***	-0.0164***	-0.0096***	0.0141***
LT DEBT	0.0065**	0.0241***	-0.0242***	0.2533***	0.0173***	-0.0167***	0.0064*	0.0309***	-0.08***	0.0263***	-0.0453***	-0.0834***	0.1636***	-0.0131***	0.0158***	-0.0042	-0.0122***	-0.1077***	0.0758***	0.0878***	-0.0056*	-0.0188***	-0.0154***
ST DEBT	-0.036***	-0.0584***	0.0689***	-0.0794***	0.0039	-0.0076**	-0.0098***	0.0389***	0.1293***	-0.0043	-0.0202***	-0.1145***	-0.0617***	-0.0639***	0.095***	-0.0786***	-0.0049	-0.0046	-0.0046	-0.019***	0.0195***	0.0232***	-0.0027
OTHER Liabilities	0.0318***	0.059***	-0.0673***	-0.0166***	0.0388***	-0.0057*	0.0443***	0.0265***	-0.0524***	-0.0161***	0.0204***	0.008**	0.0161***	0.2046***	-0.1656***	0.0214***	0.0742***	0.0334***	-0.0279***	-0.0188***	0.001	0.0006	0.0056*
BIG BANKS >50%	0.0719***	0.0909***	-0.1153***	-0.0352***	0.0093***	0.0268***	0.0084**	0.0008	0.0415***	0.0124***	-0.01***	-0.037***	-0.0439***	0.0286***	-0.0503***	0.0498***	-0.0041	0.007**	-0.0167***	-0.0307***	0.0172***	0.0309***	0.0064*

	collateral	growth	LT/TA	ST/TA	Inventories/TA	Single bank	Multiple bank	LoansDOM	onlyDOM	onlyFOR	EQUITY	LT DEBT	ST DEBT	OTHER Liabilities	BIG BANKS >50%
collateral	1														
growth	-0.0021	1													
LT/TA	0.9275***	0.0315***	1												
ST/TA	-0.7639***	-0.0262***	-0.8245***	1											
Inventories/TA	-0.2751***	-0.0087**	-0.3025***	0.3534***	1										
Single bank	0.0982***	0.0037	0.0971***	-0.0427***	0.0969***	1									
Multiple bank	0.0755***	0.0061*	0.0832***	-0.0382***	0.0679***	-0.1607***	1								
LoansDOM	0.0434***	-0.0004	0.0495***	-0.0356***	0.0184***	0.2013***	0.1583***	1							
onlyDOM	0.0312***	-0.003	0.0352***	-0.0281***	0.0103***	0.2507***	-0.014***	0.9052***	1						
onlyFOR	-0.0544***	-0.0006	-0.0624***	0.0415***	-0.0249***	-0.1369***	-0.3321***	-0.8973***	-0.7511***	1					
EQUITY	-0.0822***	-0.0052*	-0.0706***	0.2734***	-0.1211***	-0.1258***	-0.0739***	-0.0686***	-0.0575***	0.0733***	1				
LT DEBT	0.3936***	0.008**	0.4071***	-0.3867***	-0.0417***	0.1475***	0.1057***	0.0736***	0.0573***	-0.084***	-0.3359***	1			
ST DEBT	-0.2259***	-0.0033	-0.2484***	0.0367***	0.1557***	0.0046	-0.0148***	0.0078**	0.0107***	-0.0036	-0.6681***	-0.4405***	1		
OTHER Liabilities	0.0013	0.0083**	0.0069**	0.0179***	-0.0425***	0.0002	0.0115***	0.0003	-0.0034	-0.0027	-0.0502***	-0.0568***	-0.146***	1	
BIG BANKS >50%	0.0126***	0.0083**	0.0171***	0.0315***	0.0572***	0.1533***	0.1447***	-0.0018	-0.0066**	-0.0297***	-0.0103***	0.0278***	-0.0172***	0.0229***	1

Table 9. Correlation table II

	big	medium	small	FOREIGN	A	C	D	F	G	H	J	M	OtherIND	stateMIX	pvt est	pvtMIX	common	reg 1	reg 2	reg 3	reg 4	reg 5	reg 6
big	1																						
medium	-0.0121***	1																					
small	-0.4915***	-0.865***	1																				
foreign	0.0069**	0.0243***	-0.0246***	1																			
A	0.0027	0.0094***	-0.0095***	-0.0305***	1																		
C	0.0429***	0.0757***	-0.0874***	-0.0408***	-0.0569***	1																	
D	0.0357***	0.0364***	-0.0496***	0.012***	-0.0058*	-0.0145***	1																
F	-0.0101***	0.0002	0.005	0.0291***	-0.0557***	-0.1397***	-0.0142***	1															
G	-0.0126***	-0.0143***	0.0187***	-0.0468***	-0.101***	-0.2534***	-0.0257***	-0.2479***	1														
H	0.0137***	0.0055*	-0.0116***	-0.0249***	-0.0306***	-0.0768***	-0.0078**	-0.0752***	-0.1363***	1													
J	0.0002	-0.0174***	0.0151***	-0.0146***	-0.0317***	-0.0795***	-0.0081**	-0.0778***	-0.1411***	-0.0428***	1												
M	-0.0285***	-0.0427***	0.0514***	-0.0588***	-0.064***	-0.1606***	-0.0163***	-0.1571***	-0.285***	-0.0864***	-0.0894***	1											
OtherIND	0.002	-0.009**	0.0069**	0.1507***	-0.072***	-0.1807***	-0.0184***	-0.1768***	-0.3207***	-0.0972***	-0.1006***	-0.2033***	1										
stateMIX	0.1231***	0.1286***	-0.1738***	-0.0317***	0.0021	0.0001	0.1233***	-0.0172***	-0.0593***	0.0151***	0.0073**	-0.0158***	0.0751***	1									
pvt est	-0.1914***	-0.2463***	0.3105***	0.0585***	-0.1099***	-0.0639***	-0.0755***	0.0208***	0.0884***	-0.0106***	0.0097***	0.0224***	-0.0395***	-0.5609***	1								
pvtMIX	0.1731***	0.2425***	-0.2981***	-0.0396***	0.0187***	0.0892***	0.0052*	-0.009**	-0.0555***	0.0061*	-0.0092***	-0.0026	-0.0058*	-0.018***	-0.6966***	1							
common	-0.0074**	-0.0022	0.0056*	-0.0278***	0.2211***	0.0008	0.0011	-0.0102***	-0.0337***	-0.0058*	-0.0171***	-0.0264***	0.0004	-0.0108***	-0.4157***	-0.0134***	1						
reg 1	0.0198***	0.0014	-0.0111***	-0.0251***	-0.0816***	-0.039***	-0.0034	-0.0319***	0.048***	-0.0324***	0.0888***	0.0947***	-0.0835***	-0.0456***	0.075***	-0.0389***	-0.0484***	1					
reg 2	-0.0137***	-0.0123***	0.0175***	0.0379***	0.0069**	-0.0283***	-0.0072**	0.0139***	-0.0245***	0.0193***	-0.0452***	-0.0415***	0.0917***	0.0183***	-0.0139***	-0.0031	0.0128***	-0.3986***	1				
reg 3	-0.013***	-0.0208***	0.0246***	0.1104***	-0.0207***	-0.0145***	-0.0044	0.0311***	-0.0372***	0.0034	-0.0304***	-0.0194***	0.0707***	-0.0027	0.0144***	-0.0032	-0.0245***	-0.3867***	-0.2242***	1			
reg 4	0.003	0.0155***	-0.015***	-0.0556***	0.0129***	0.0626***	0.0096***	0.012***	-0.0058*	0.015***	-0.018***	-0.0376***	-0.0256***	-0.0022	-0.0279***	0.0192***	0.0359***	-0.2549***	-0.1477***	-0.1433***	1		
reg 5	0.0063*	0.0243***	-0.0243***	-0.0634***	0.1114***	0.0291***	0.0042	-0.0039	0.0096***	0.0022	-0.023***	-0.0252***	-0.0414***	0.033***	-0.0615***	0.0347***	0.0412***	-0.2518***	-0.146***	-0.1416***	-0.0933***	1	
reg 6	-0.0088**	0.0044	0.0007	-0.0504***	0.0468***	0.0439***	0.0099***	-0.0173***	-0.0037	0.0101***	-0.0127***	-0.0235***	-0.014***	0.0337***	-0.0522***	0.0285***	0.0288***	-0.2013***	-0.1167***	-0.1132***	-0.0746***	-0.0737***	1
collateral	0.0307***	0.0595***	-0.0672***	0.1247***	0.0443***	0.0201***	0.0161***	-0.0112***	-0.1453***	0.0419***	-0.0519***	-0.0511***	0.1998***	0.0732***	-0.0882***	0.061***	0.0058*	-0.134***	0.0839***	0.0433***	0.0208***	0.0141***	0.0299***
growth	0.0043	0.0033	-0.005	-0.0026	0.0078**	0.0031	-0.0005	-0.0095***	-0.0068**	-0.0053*	0.018***	-0.0056*	0.0089**	0.0145***	-0.0104***	0.0032	-0.0006	-0.0065*	0.0041	-0.0008	0.0048	0.0008	0.0014
LT/TA	0.0488***	0.0754***	-0.0901***	0.1238***	0.0393***	0.0122***	0.0162***	-0.0218***	-0.1564***	0.0394***	-0.0429***	-0.0351***	0.2121***	0.0776***	-0.1068***	0.0807***	0.0102***	-0.1153***	0.073***	0.0407***	0.0187***	0.0084**	0.0221***
ST/TA	-0.0339***	-0.0473***	0.0582***	-0.1354***	-0.0339***	0.0052*	-0.0142***	0.025***	0.1496***	-0.0329***	0.0401***	0.0627***	-0.2511***	-0.0666***	0.0875***	-0.0635***	-0.0086**	0.1308***	-0.0779***	-0.071***	-0.0097***	-0.0001	-0.0173***
Inventories/TA	-0.0045	0.0062*	-0.0032	-0.0384***	0.0092***	0.0311***	-0.0202***	0.0197***	0.3058***	-0.0834***	-0.0575***	-0.198***	-0.1532***	-0.051***	0.0509***	-0.0189***	-0.0185***	0.0021	-0.0095***	-0.0184***	0.0141***	0.0166***	0.0049
Single bank	-0.0047	0.0349***	-0.028***	-0.0952***	0.0278***	0.053***	-0.0015	0.0226***	0.0349***	0.024***	-0.028***	-0.0738***	-0.045***	-0.0014	-0.014***	0.021***	-0.0005	-0.0569***	-0.0098***	-0.0106***	0.056***	0.0413***	0.0377***
Multiple bank	0.1513***	0.1791***	-0.2319***	-0.0583***	0.0239***	0.0505***	0.0043	0.0099***	0.0322***	0.0064*	-0.0139***	-0.0599***	-0.0394***	0.0374***	-0.0879***	0.0939***	-0.0016	-0.0457***	0.0084**	-0.0117***	0.0373***	0.0326***	0.0183***
LoansDOM	0.0157***	0.046***	-0.0479***	-0.0413***	0.019***	0.0285***	-0.0019	0.0128***	0.0021	0.0079**	-0.011***	-0.0394***	-0.0063*	0.0076**	-0.0357***	0.0377***	0.0103***	-0.0437***	0.0376***	0.0297***	-0.0358***	0.0077**	0.0145***
onlyDOM	-0.0051*	0.014***	-0.0097***	-0.0352***	0.0174***	0.022***	-0.0011	0.0134***	-0.0006	0.0066**	-0.0117***	-0.0316***	-0.0037	0.0044	-0.0214***	0.0212***	0.0087**	-0.0368***	0.0313***	0.0284***	-0.0326***	0.0035	0.0139***
onlyFOR	-0.0773***	-0.096***	0.1224***	0.0468***	-0.0249***	-0.0351***	0.0005	-0.0166***	-0.0026	-0.0075**	0.0127***	0.0468***	0.01***	-0.0244***	0.0596***	-0.0596***	-0.007	0.0452***	-0.0413***	-0.0243***	0.0368***	-0.0149***	-0.0132***
EQUITY	0.0251***	0.0277***	-0.0367***	-0.1189***	-0.0281***	0.0231***	-0.006*	-0.0734***	-0.0591***	-0.013***	0.0535***	0.1884***	-0.0724***	0.0272***	-0.0724***	0.0818***	-0.0036	0.0847***	-0.0503***	-0.047***	-0.0164***	-0.0096***	0.0141***
GroupLoans	0.054***	0.0584***	-0.0779***	0.1865***	0.0014	0.0072**	0.0605***	-0.0067**	-0.0248***	-0.0035	0.0121***	-0.0189***	0.0354***	0.0255***	-0.0358***	0.0336***	-0.0067**	0.0357***	-0.0076**	-0.0119***	-0.0073**	-0.0201***	-0.0108***
Other loans	-0.0375***	-0.0612***	0.0721***	0.2165***	-0.0078**	-0.0611***	-0.0066**	0.0144***	-0.0212***	-0.0114***	-0.0304***	-0.0773***	0.1615***	-0.0504***	0.0763***	-0.0607***	-0.0091**	-0.0553***	0.0609***	0.0887***	-0.0241***	-0.0523***	-0.0407***
BankLoans	0.0348***	0.073***	-0.081***	-0.0454***	0.0322***	0.0302***	-0.0039	0.0354***	-0.0238***	0.0421***	-0.0394***	-0.0668***	0.0223***	-0.0101***	-0.0106***	0.029***	-0.01***	-0.086***	0.0236***	0.0195***	0.0351***	0.0366***	0.0243***
AdvPay	0.0048	0.0039	-0.0058*	-0.0085**	-0.0088**	0.018***	-0.0028	0.0469***	-0.0096***	-0.015***	-0.0029	-0.0038	-0.0271***	-0.0015	0.0044	-0.0002	-0.008**	0.012***	-0.0056*	-0.0084**	-0.0062*	-0.0007	0.0062*
Trade credit	-0.0211***	-0.0092***	0.0186***	-0.0352***	0.0189***	0.0289***	-0.0076**	0.0035	0.2049***	0.009**	-0.0228***	-0.1425***	-0.1383***	-0.0328***	0.0462***	-0.0397***	0.0023	0.0096***	-0.0156***	-0.0393***	0.0162***	0.0374***	0.0067**
Securities	0.0271***	0.0102***	-0.0224***	0.0062*	0.0018	-0.0006	-0.0021	-0.0018	0.0057*	-0.0036	-0.0026	-0.0081**	0.0054*	0.0015	-0.0028	0.0041	0.0016	0.0049	-0.0041	0.002	-0.0119***	0.0073**	-0.0009
OtherLT&STdebt	-0.0422***	-0.0745***	0.086***	-0.1011***	-0.0133***	-0.0248***	-0.0158***	0.0314***	-0.0641***	-0.0033	0.0106***	0.0552***	0.0228***	-0.0171***	0.045***	-0.0502***	0.0016	-0.0192***	0.0088**	-0.0018	0.0104***	0.0119***	0.0021
LiabOther	0.0318***	0.059***	-0.0673***	-0.0166***	0.0388***	-0.0057*	0.0443***	0.0265***	-0.0524***	-0.0161***	0.0204***	0.008**	0.0161***	0.2046***	-0.1656***	0.0214***	0.0742***	0.0334***	-0.0279***	-0.0188***	0.001	0.0006	0.0056*
BIG BANKS >50%	0.0719***	0.0909***	-0.1153***	-0.0352***	0.0093***	0.0268***	0.0084**	0.0008	0.0415***	0.0124***	-0.01***	-0.037***	-0.0439***	0.0286***	-0.0503***	0.0498***	-0.0041	0.007**	-0.0167***	-0.0307***	0.0172***	0.0309***	0.0064*

	collateral	growth	LT/TA	ST/TA	Inventories/TA	Single bank	Multiple bank	LoansDOM	OnlyDOM	OnlyFOR	EQUITY	GroupLoans	Other loans	BankLoans	AdvPay	Trade credit	Securities	OtherLT&STdebt	LiabOther	BIG BANKS >50%
collateral	1																			
growth	-0.0021	1																		
LT/TA	0.9275***	0.0315***	1																	
ST/TA	-0.7639***	-0.0262***	-0.8245***	1																
Inventories/TA	-0.2751***	-0.0087**	-0.3025***	0.3534***	1															
Single bank	0.0982***	0.0037	0.0971***	-0.0427***	0.0969***	1														
Multiple bank	0.0755***	0.0061*	0.0832***	-0.0382***	0.0679***	-0.1607***	1													
LoansDOM	0.0434***	-0.0004	0.0495***	-0.0356***	0.0184***	0.2013***	0.1583***	1												
onlyDOM	0.0312***	-0.003	0.0352***	-0.0281***	0.0103***	0.2507***	-0.014***	0.9052***	1											
onlyFOR	-0.0544***	-0.0006	-0.0624***	0.0415***	-0.0249***	-0.1369***	-0.3321***	-0.8973***	-0.7511***	1										
EQUITY	-0.0822***	-0.0052*	-0.0706***	0.2734***	-0.1211***	-0.1258***	-0.0739***	-0.0686***	-0.0575***	0.0733***	1									
GroupLoans	0.0142***	0.0113***	0.0345***	-0.0785***	-0.0259***	-0.0324***	-0.0149***	-0.0044	-0.0019	0.0055*	-0.1185***	1								
Other loans	0.1854***	0.0021	0.1843***	-0.3081***	0.0118***	-0.0872***	-0.0742***	-0.0245***	-0.0148***	0.0357***	-0.3877***	-0.0794***	1							
BankLoans	0.2716***	0.0049	0.2817***	-0.2311***	0.0349***	0.3289***	0.2576***	0.1568***	0.1184***	-0.1902***	-0.2691***	-0.0433***	-0.1569***	1						
AdvPay	-0.0499***	0.0121***	-0.0514***	0.0472***	0.0585***	0.014***	0.0111***	0.0035	-0.0002	-0.0054*	-0.0905***	-0.0148***	-0.0596***	-0.0218***	1					
Trade credit	-0.1936***	-0.0059*	-0.2172***	0.2005***	0.1863***	0.0984***	0.0518***	0.0289***	0.0235***	-0.0312***	-0.3664***	-0.0744***	-0.2237***	-0.0894***	-0.0204***	1				
Securities	0.0042	-0.0004	0.0106***	-0.0223***	0.0106***	-0.0139***	0.0142***	0.0013	-0.004	-0.0087**	-0.0413***	-0.0067**	-0.0314***	-0.0129***	-0.0041	-0.0229***	1			
OtherLT&STdebt	-0.1401***	-0.0052*	-0.1509***	-0.0022	-0.0738***	-0.1114***	-0.1008***	-0.0476***	-0.0319***	0.0624***	-0.1943***	-0.0865***	-0.2006***	-0.195***	-0.0571***	-0.1653***	-0.0201***	1		
LiabOther	0.0013	0.0083**	0.0069**	0.0179***	-0.0425***	0.0002	0.0115***	0.0003	-0.0034	-0.0027	-0.0502***	-0.0052*	-0.0832***	-0.0444***	0.0031	-0.0612***	-0.0101***	-0.0767***	1	
BIG BANKS >50%	0.0126***	0.0083**	0.0171***	0.0315***	0.0572***	0.1533***	0.1447***	-0.0018	-0.0066**	-0.0297***	-0.0103***	0.0083**	-0.0812***	0.1026***	0.0189***	0.0778***	-0.0078**	-0.0841***	0.0229***	1

Table Appendix Construction of region variable

REGION	COUNTIES
Zagreb	Zagrebacka City of Zagreb
Dalmatia	Zadarska Sibensko-Kninska Splitsko-Dalmatinska Dubrovacko-Neretvanska
Istria and Primorje	Primorsko-Goranska Istarska
Northern Croatia	Krapinsko-Zagorska Varazdinska Koprivnicko-Krizevacka Medjimurska
Slavonia	Viroviticko-Podravska Pozesko-Slavonska Brodsko-Posavska Osjecko-Baranjska Vukovarsko-Srijemska
Central Croatia	Sisacko-Moslavacka Karlovacka Bjelovarsko-Bilogorska Licko-Senjska