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## Which Factors are Weighing on Credit Recovery? Evidence from the Croatian Bank Lending Survey

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CROATIAN NATIONAL BANK

# **WHICH FACTORS ARE WEIGHING ON CREDIT RECOVERY? EVIDENCE FROM THE CROATIAN BANK LENDING SURVEY**

Martin Pintaric<sup>\*</sup>

April, 2015

## **Abstract**

This paper explores qualitative information from the Bank Lending Survey and bank-level data on loan quantities and prices to determine the effects of lending standards and loan demand on credit growth in Croatia for the period from the third quarter of 2012 to the fourth quarter of 2014. Panel analysis has shown that there are statistically significant and, in economic terms, expected effects of credit supply and demand on the growth of certain groups of loans. With various lags, tightening of credit standards overall and due to negative expectations regarding general economic activity results in lower credit growth to enterprises. On the other hand, stronger credit demand significantly increases credit activity to both enterprises and households. Generally, credit growth reacts faster to changes in credit demand, whereas changes in credit standards affect credit activity with a somewhat greater lag. Therefore, as current credit dynamics in Croatia are very subdued, despite CNB's policy of maintaining high monetary system liquidity, results confirm that without an improvement in demand and economic outlook there can be no credit recovery.

**Keywords:** Bank Lending Survey, credit growth, lending standards, loan demand

**JEL Classification:** E30, E51, G21

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## 1. Introduction

Following the example of the majority of European national central banks, in October 2012 the Croatian National Bank (CNB) started the "Bank Lending Survey", which is methodologically aligned with the Euro Area Bank Lending Survey conducted by the European Central Bank. The aim of the CNB's Survey is to gain an insight into the developments of commercial banks' credit standards and credit conditions and terms as well as changes in credit demand. The questionnaire is filled in by commercial banks' executives in charge of the bank's lending to enterprises and households. So far our cooperation with banks has been very successful as the banks making more than 99% of the banking system assets have participated.

By the last quarter of 2014, ten rounds of the Survey have been conducted. Although the time series are still short and insights fresh, qualitative nature of information contained in the Survey enables association of individual answers of banks with the developments of general economic activity. Despite the accommodative monetary policy stance of the CNB and consequently high primary liquidity in the monetary system, in 2014 loans to the non-financial private sector recorded the biggest fall since the onset of the crisis. Due to the importance of bank lending for economic growth and current juncture on credit markets, determinants of credit growth have to be analysed in order to understand the importance of elements on both the supply<sup>1</sup> and the demand sides, particularly in the present conditions of weak lending activity in Croatia. The Survey results can help to explain recent credit developments and could be used to formulate policies aimed at restoring credit growth. This paper therefore analyses the effect of credit standards and credit demand on the developments in bank lending in Croatia for the period from the third quarter of 2012 to the end of 2014, i.e. the period for which the Survey data are available.

Some questions address developments for the last quarter and some address expectations for the next quarter. Given their specific features, loans to enterprises are divided into two

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<sup>1</sup> Credit supply includes credit standards as well as conditions and terms. Credit standards are the internal rules, written and unwritten criteria of a bank which reflect the bank's loan policy (e.g. requirements to be met by a potential borrower for a certain type of a loan the bank is willing to grant, collaterals the bank is willing to accept, etc.). Conditions and terms for approving loans are subject to a contract between the lender and the borrower, such as interest rate and extent of insurance instrument (e.g. collateral requirements, margin on average loans, margin on riskier loans, fees, maturity, etc.).

groups: loans to small and medium-sized enterprises and loans to large enterprises. Loans to households are also divided into two groups: loans for house purchase and consumer credit and other lending.

The results of the microeconomic panel data analysis indicate that there is indeed a statistically significant relationship between the growth of loans to enterprises and the growth of consumer credit and other lending on one hand and credit standards and credit demand on the other hand, changes in credit demand having a somewhat faster impact on credit growth than changes in credit standards. However, the analysis has shown no statistically significant information for loans for house purchase. As new rounds of the Survey have been conducted and time series data extended, more exhaustive and relevant analyses of correlations between qualitative data from the Survey and quantitative data on bank lending will be possible.

The second section of the paper gives an overview of the relevant literature and the third section describes the results of the Survey conducted by CNB so far on an aggregate basis. In the fourth section a microeconomic assessment of the influence of credit supply and demand on credit growth is given, while in the last section conclusions are presented. The tables with the results of the microeconomic analysis for loans to enterprises and consumer credit and other lending to households are shown in the Appendix.

## **2. Overview of literature**

Beside the great usefulness of the Bank Lending Survey for internal analyses by decision-makers in the field of monetary policy and for national central banks, its results are often used in numerous studies of correlations between monetary policy, GDP growth, credit supply and demand and credit growth. For example, based on the Euro Area Bank Lending Survey, de Bondt *et al* (2010) conclude that credit standards and demand for loans are useful for explaining and predicting the growth of loans to enterprises and households and the growth of real GDP and investment. Maddaloni and Peydró (2010) examine the monetary policy transmission in the euro area and find that a decrease in over-night interest rates eases credit standards, both for loans of average risk and for riskier loans. Hempell and Kok Sørensen (2010) stress the importance of limited credit supply as a determinant of credit growth in the

euro area, while Ciccarelli *et al* (2010) conclude that the influence of monetary policy on the growth of loans to enterprises in the euro area is greater through its effects on credit supply, while for loans to households it is greater through its effects on credit demand.

The Senior Loan Officer Opinion Survey of the Federal Reserve System is also frequently used to analyse and model macroeconomic developments in the USA. Based on a very large panel data set on the conditions and terms of bank lending in the USA from 1977 to 1993, Asea and Blomberg (1997) conclude that banks systematically ease and tighten credit standards over a business cycle. They also conclude that cycles in changes of credit standards of banks are important for general economic activity. Based on the data obtained by the Survey of the Federal Reserve System, Lown and Morgan (2006) conclude that credit growth slows down after the tightening of credit standards and that since 1967 almost every recession in the USA has been preceded by a considerable tightening of credit standards. Based on the Survey of the Federal Reserve System, Swiston (2008) concludes that a net tightening of credit standards of 20 percentage points reduces the economic activity by 0.75% after one year and by 1.25% after two years. A range of other works based on the data obtained by the Federal Reserve System's Lending Survey establishes its usefulness for forecasting credit growth and GDP growth in the USA, such as Lown *et al* (2000), Lown and Morgan (2002), Cunningham (2006) and Bayoumi and Melander (2008).

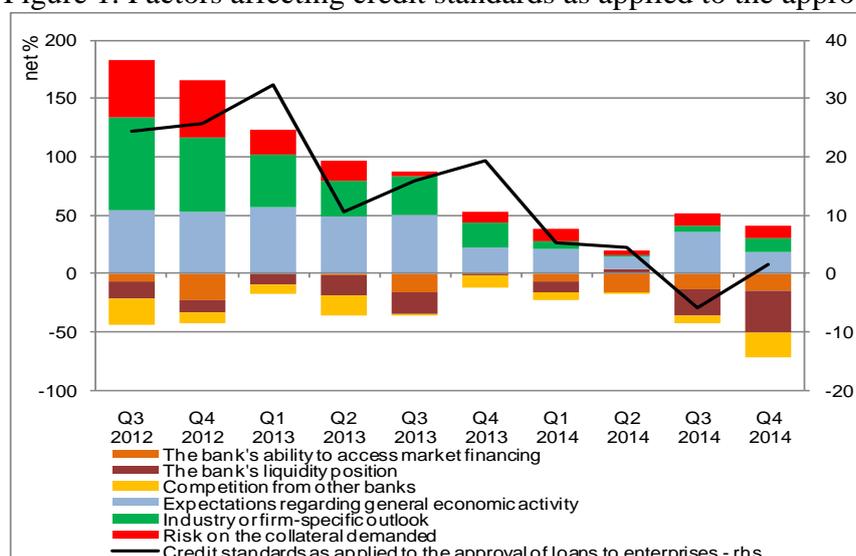
Unlike the above mentioned works which analyse aggregated data on credit growth and changes to credit standards and demand, other works apply a different approach, based on using the Survey answers by individual banks, i.e. on a micro level: credit growth of individual banks is combined with the Survey answers on credit standards and credit demand in order to establish the effect of supply and demand on credit growth. Based on the results of the Survey for the euro area, the latter approach is used for Italy by Del Giovane *et al* (2010), for Germany by Blaes (2011) and for the Netherlands by van der Veer and Hoerberichts (2013). Kuchler (2012) applies the same approach based on the Danish survey. The latter four works are the basis and motivation for the microeconomic analysis in this paper.

### 3. Descriptive analysis of the results of the Survey in Croatia

In this section, aggregated<sup>2</sup> results of the Survey related to the developments of credit standards and demand for loans to enterprises and households, and to the main factors that affected them are presented.

The degree of tightening of standards for loans to enterprises has significantly decreased since the beginning of the Survey (Figure 1), and in the third quarter of 2014 a moderate easing of standards in a net percentage was recorded for the first time. The main factors contributing to the tightening of standards are negative expectations regarding general economic activity, industry or firm-specific outlook and risk on the collateral demanded, but their influence significantly decreased in relation to the preceding years. The bank's liquidity position, competition from other banks and the bank's ability to access market financing had the greatest effect on the easing of credit standards as applied to loans to enterprises, their effect having increased in 2014.

Figure 1. Factors affecting credit standards as applied to the approval of loans to enterprises



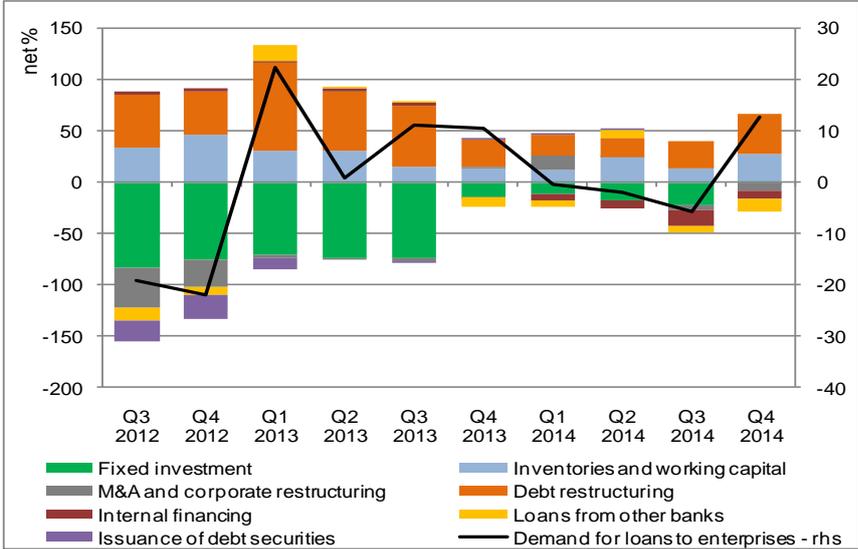
Note: The positive value shows that the factor contributes to standard tightening and the negative that it contributes to standard easing.

Source: CNB.

<sup>2</sup> Aggregated results are expressed based on the so-called net percentage of banks' answers weighted by each bank's share in an individual group of loans. The net percentage for credit standards is calculated as the difference between the percentage of banks answering that the standards tightened and the percentages of those responding that they eased. A positive net percentage indicates a tightening and a negative net percentage an easing of credit standards. As for demand for loans, a positive net percentage indicates that the percentage of banks answering that the demand for loans has increased is higher than the percentage of those responding that the demand has decreased, which then means a growth of demand, and vice versa.

After a strong fall in the last two quarters of 2012, demand for loans to enterprises recorded a noticeable recovery in early 2013 (Figure 2), followed by periods of relatively minor oscillations. Lack of fixed investment is the basic factor of the decrease in demand, but its influence in 2014 was much less prominent than in the preceding years. In 2014, internal financing and loans from other banks had an increasing effect on the decrease in the demand for loans, so that debt restructuring and financing of inventories and working capital remained the main factors contributing to the increase in the demand for loans. Based on the mentioned developments and a modest growth of demand in the last quarter of 2014, we may conclude that the results of the Survey partly reflect a delayed recovery of Croatian economy.

Figure 2. Factors affecting demand for loans to enterprises



Note: The positive value shows that the factor contributes to higher demand and the negative that it contributes to lower demand.

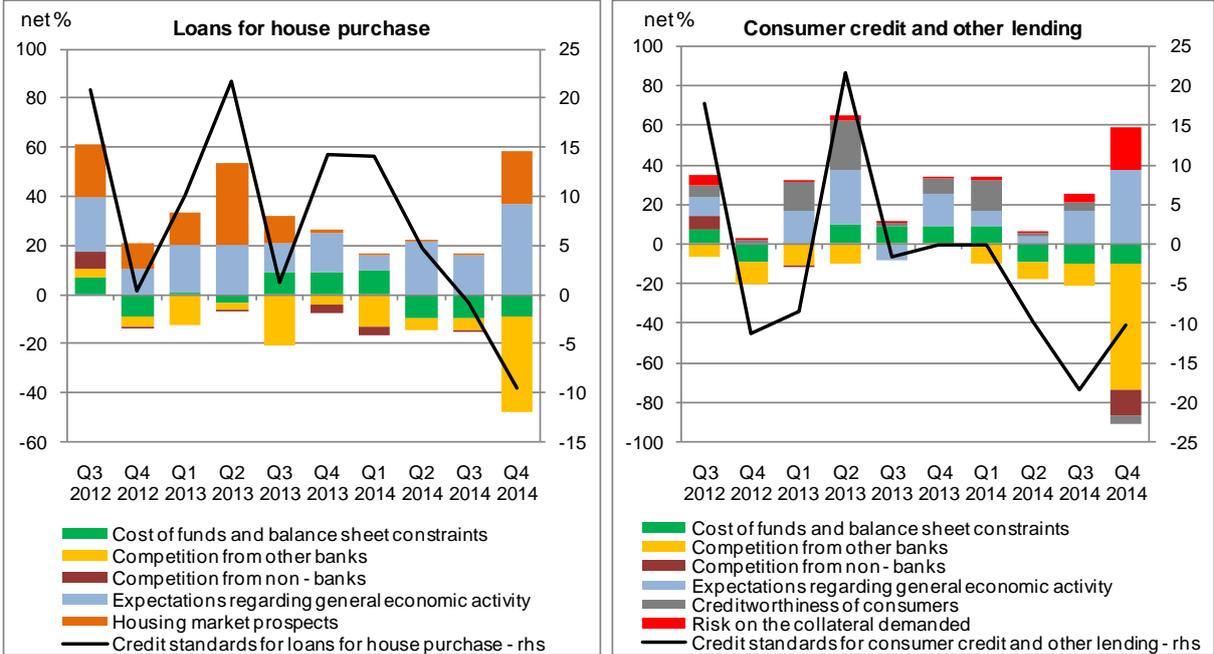
Source: CNB.

As for households, credit standards as applied to loans for house purchase were tightening continuously at various degrees until the third quarter of 2014, when, for the first time since the Survey was introduced, a period of easing of standards as applied to loans for house purchase started (Figure 3, left-hand side). On the other hand, credit standards as applied to consumer credit and other lending to households recorded more favourable developments after a considerable tightening in the second quarter of 2013, and have eased since early 2014, the pace of easing having decreased at the end of that year (Figure 3, right-hand side).

The main sources of tightening of standards for both groups of loans to households are the negative expectations regarding general economic activity. Beside this factor of tightening, the tightening of standards for loans for house purchase is also affected by negative housing

market prospects, and the tightening of standards for consumer credit and other lending by creditworthiness of consumers. Competition from other banks is the basic factor contributing to easing of credit standards as applied to loans to households, particularly in the last quarter of 2014. Cost of funds and balance sheet constraints have contributed to easing of standards since the second quarter of 2014, while in the previous periods they were mostly factors of tightening.

Figure 3. Factors affecting credit standards as applied to the approval of loans to households



Note: The positive value shows that the factor contributes to standard tightening and the negative that it contributes to standard easing.

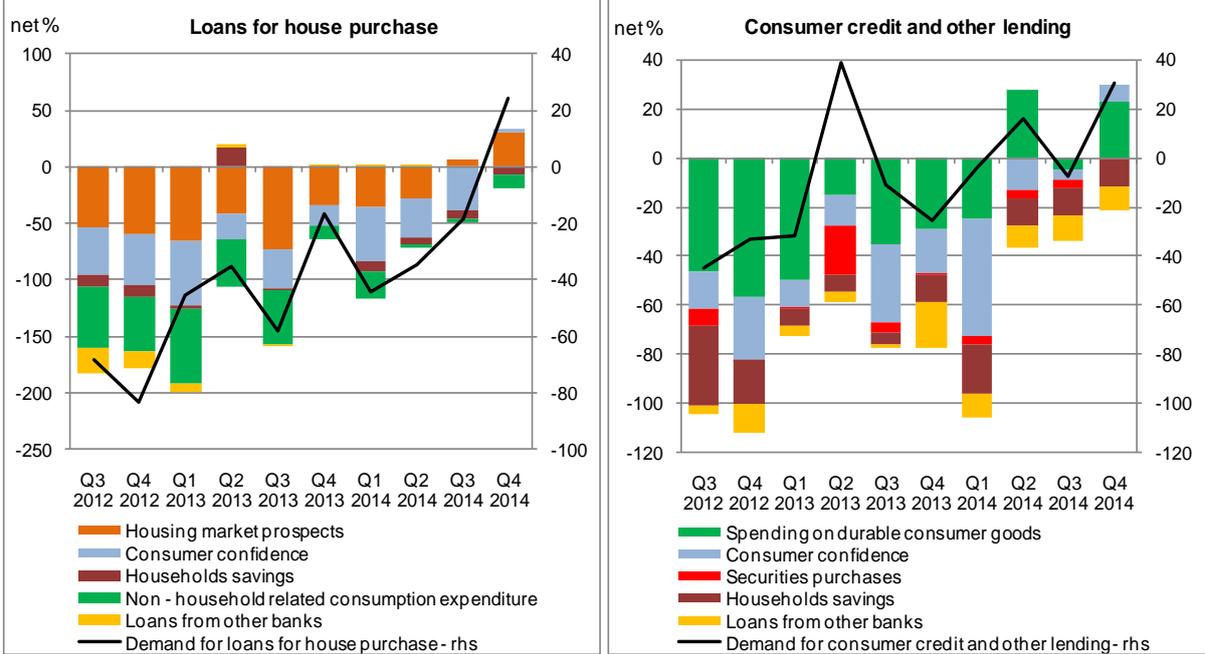
Source: CNB.

Since the start of the Survey, a decrease in the demand for loans for house purchase has visibly slowed down, and in the last quarter of 2014 the demand grew in net percentage for the first time (Figure 4, left-hand side). Demand for consumer credit and other lending to households also recorded favourable developments on the average in 2014 in comparison to the preceding periods (Figure 4, right-hand side).

In accordance with the above mentioned positive developments of demand, the effect of the majority of factors that in the preceding periods most affected a decrease in demand, such as consumer confidence, consumption, housing market prospects or household savings, significantly decreased or vanished. Indeed, in 2014 some of the main factors affecting the decrease in demand in previous years started having a positive effect on demand, such as

housing market prospects for loans for house purchase, and spending on durable consumer goods and consumer confidence for consumer credit and other lending.

Figure 4. Factors affecting demand for loans to households



Note: The positive value shows that the factor contributes to higher demand and the negative that it contributes to lower demand.  
 Source: CNB.

#### 4. Microeconomic assessment of the effect of credit supply and demand on credit growth

In the first part of this section, components of credit growth, and sources and types of data used to assess the effect of supply and demand are defined. The results of microeconomic equation for the main groups of loans are then presented, followed by a comparison of results with other countries.

##### 4.1. Equation and data

The econometric analysis aims at examining the effect of supply and demand, reflected by the banks' answers to the Survey conducted so far, on the quarterly growth of loans to enterprises, loans for house purchase and other lending and consumer credits. Data of the Survey cover 10 periods, from the third quarter of 2012 to the last quarter of 2014. Credit growth rates have

been corrected for one-off<sup>3</sup> effects and the effect of exchange rate<sup>4</sup>. Analysis is performed by regression on an unbalanced panel data set taking into account fixed effects<sup>5</sup> for banks and quarters, similar as in van der Veer and Hoeberichts (2013). The general form of the equation is as follows:

$$y_{i,t} = \alpha_i + \beta_1 y_{i,t-1} + \beta_2 BLS\_S_{i,t-h} + \beta_3 BLS\_D_{i,t-h} + \beta_4 X_{i,t-h} + F_i + F_t + \varepsilon_{i,t} \quad (1)$$

where:  $y$  is the dependent variable representing the quarterly rate of change of individual types of loans;  $BLS\_S$  is the indicator of credit standards;  $BLS\_D$  is the indicator of demand for loans;  $X$  represents the vector of control variables identifying the price of loans, capital position of banks and their funding costs;  $F_i$  is the fixed effect of the bank, and  $F_t$  is the fixed effect of the quarter;  $i$  is a designation of the bank,  $t$  is a designation for the quarter;  $h$  is the quarter lag which can take the values from 0 to 4.

The credit standards indicator<sup>6</sup>  $BLS\_S$  is a dummy variable for the quarters in which credit standards tightened/eased or a specific factor contributed to tightening/easing. One dummy variable of credit standards is used for each of the three credit groups, depending on which was more frequent: tightening or easing. By analogy, the credit demand indicator<sup>7</sup>  $BLS\_D$  is also a dummy variable for the quarters in which credit demand increased/decreased or a specific factor contributed to increased/decreased demand, whichever is more frequent for a certain credit group<sup>8</sup>.

The three bank-specific control variables apply to the price of loans, capital position of banks and their funding costs. Price of loans is expressed as the three-month weighted average

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<sup>3</sup> One-off effects excluded from growth rates are the assumption of shipyards' debts by the Ministry of Finance (applies only to loans to enterprises), transfer of claims to another company, bank mergers and acquisitions and change in the method of reporting on fees.

<sup>4</sup> The effects of the euro, Swiss franc and American dollar exchange rate changes against the Croatian kuna are excluded. Loans in a specific currency are loans either disbursed in or indexed to such currency.

<sup>5</sup> See Wooldridge (2002), p. 265 - 276.

<sup>6</sup> Questions about credit standards are answered by banks using the following scale: Tightened considerably -1; Tightened somewhat -0,5; Remained basically unchanged 0; Eased somewhat 0,5; Eased considerably 1.

<sup>7</sup> Questions about credit demand are answered by banks using the following scale: Decreased considerably -1; Decreased somewhat -0,5; Remained basically unchanged 0; Increased somewhat 0,5; Increased considerably 1.

<sup>8</sup> For loans to enterprises there were almost no quarters of easing standards, while in most quarters in which the demand for loans to enterprises changed the banks reported an increase. For loans for house purchase, the number of quarters of easing and tightening standards were similar, while changes in demand were mostly negative. For consumer credit and other lending the most common changes were easing standards and increased demand.

nominal interest rate on new loans for each of the three groups of analyzed loans. Capital position of banks is determined by the capital adequacy ratio for the data covering the period until the end of 2013, and in the following periods by the total (regulatory) capital ratio. Banks' funding costs are determined by the three-month weighted average nominal interest rate on the balances<sup>9</sup> of total liabilities<sup>10</sup>.

## **4.2. Results**

In accordance with the defined equation (1), the results of panel data regression, which are explained below, are used for assessing the significance of credit standards/credit supply and credit demand for the developments of individual credit groups (loans to enterprises, loans for house purchase and consumer credit and other lending). The analysis results are given in tables in the Appendix.

### **4.2.1. Loans to enterprises**

In case of loans to enterprises, an upsurge in demand affects credit growth in the same quarter. According to the Survey results, a rise in the demand for loans to enterprises causes, *ceteris paribus*, a rise in the quarterly credit growth from 3.3 to 6.1 percentage points in the same quarter. Tightening credit standards have almost no statistical significance (Table 2). However, if lags of standards and demand are simultaneously included the results are counterintuitive since tightening of standards increases credit growth, while a rise in demand decreases it, with the exception of one equation specification (Table 3).

By using an alternative approach much better results are achieved. Instead of using tightening standards, a factor which most often contributed to tightening standards, in this case expectations regarding general economic activity, is used to examine the effect on loan growth. Debt restructuring, which most often contributed to increased demand, is also used in the subsequent equations. With a lag of three quarters, banks reporting expectations regarding general economic activity as a factor of tightening standards experienced a loan growth which

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<sup>9</sup> Interest rate on new business for calculating banks' funding cost is not used because the share of overnight deposits in new business is too large. In CNB's monetary statistics, for new business of overnight deposits received, their balance is used which, in combination with their consequently high weight and low interest rate, results in underestimated total funding cost.

<sup>10</sup> Received overnight deposits, term deposits and loans.

was 2.4 to 3.3 percentage points lower compared to other banks (Tables 4 and 5). On the other hand, banks reporting debt restructuring as a factor contributing to increased demand experienced a 2.1 to 2.7 percentage points greater loan growth compared to other banks (Table 4).

Inclusion of control variables had no influence on the statistical significance of standards and factor contributing to standards tightening, whereas for demand the significance was moderately decreased in three equation specifications, but still remains significant. According to the results, the rise in interest on loans causes a decrease in credit growth, especially when interest rates are significant, which is in accordance with expectations. On the other hand, growth of capital adequacy also causes a decrease in credit growth with higher ratios in cases of significance, which is also in accordance with expectations as it is relatively difficult to achieve simultaneous growth of capital adequacy and loans. Finally, costs of funds show almost no statistical significance.

#### **4.2.2. Loans for house purchase**

For loans for house purchase no variable from the Survey is statistically significant and no valid conclusions can therefore be made about the effect of supply and demand on credit growth. There are two probable reasons for such outcome of the analysis. First, loans for house purchase are almost exclusively long-term loans with a much longer average maturity than loans to enterprises and consumer credit and other lending to households. Therefore, a longer period is probably needed to obtain results with some statistical significance, which is at present difficult to achieve since only ten rounds of the Survey have been conducted so far and a longer period is needed to identify any major changes in loans for house purchase. Second, banks report changes in credit standards and demand for loans for house purchase much less frequently than for the other two groups of loans, which reduces the variation in the data needed to obtain meaningful results.

#### **4.2.3. Consumer credit and other lending**

The easing of standards causes, *ceteris paribus*, a rise in the growth of consumer credit and other lending of 1.7 to 2.0 percentage points in the same quarter, but the statistical

significance is weak (Table 6). The rise in demand causes a rise in the quarterly credit growth of 1.4 to 2.6 percentage points, the highest significance being achieved with a one quarter lag of demand (Tables 6 and 7). Unlike the loans to enterprises, the use of specific factors which contributed to standard easing and increased demand, produced no statistically significant results so they are not shown in the tables at the end of the paper.

As with loans to enterprises, control variables have no influence on the significance of standards, the significance of which is already weak, whereas in some equation specifications, the significance of demand is reduced or disappears. Interest on bank loans shows significance in most presented equation specifications, the growth of interest always causing a fall in credit growth, as expected. Capital adequacy is strongly significant only in one specification, the growth of capitalization causing a mild decrease in credit growth.

### **4.3. Comparison with other countries for lending to enterprises**

Since the data used for analysis are at the bank level, and as such confidential, there are no available data for direct comparisons across countries. However, as previously mentioned in the overview of literature, there are published papers which use bank level data to analyse the effect of credit supply and demand conditions on credit growth. Table 1 contains main findings of those papers<sup>11</sup> which are compared to results for Croatia. Tightening of credit standards is reflected in credit growth with a greater lag, on average, than increased demand. The effect of tightening standards is the greatest in Denmark which is also the only of the presented countries in which there is no time lag for the effect of tightened credit supply. The effect of standards in Croatia is not statistically significant, but if a factor of tightening is used instead of the standards themselves (Tables 4 and 5) the result show high significance and are similar to those of Denmark. The effect of increased demand on credit growth is much faster than that of the standards since in most presented countries the effect occurs in the same quarter. In Croatia the effect is the strongest, with other countries, in cases of statistical significance, showing much lower influence of credit demand on loan growth.

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<sup>11</sup> Del Giovane *et al* (2010); Blaes (2011); van der Veer and Hoeberichts (2013); Kuchler (2012)

Table 1: Comparison of effect of credit standards and demand between countries

	Croatia	Denmark	Italy	Germany	Netherlands
Credit standards					
Tightened		-3.261**			
Tightened (t-1)			-1.72***		-1.02
Tightened (t-3)				-1.213**	
Tightened (t-4)	-3.043				
Credit Demand					
Increased	4.684***	-0.973	1.39***		
Increased (t-1)				1.351**	1.10*

Note: Dependant variable is quarter-on-quarter growth of loans to enterprises, except for Germany for which the dependant variable is the change in  $\ln(\text{loan})$ . Data for Netherlands and Italy refer to "somewhat tightened standards" and "somewhat increased demand" since these types of answers were most common in CNB's Survey. Data for Croatia are those with the lowest p-values. No control variables are included.

\*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$

Data shown can be found in the following tables in the respective papers: Croatia: Tables 2 and 3 (pages 14 and 15); Denmark: Table 4 (page 25); Italy: Table 2 (page 18); Germany: Table 6 (page 29); Netherlands: Table 1 (page 21).

## 5. Conclusion

Aimed at establishing the effect of credit supply and credit demand on credit growth, a microeconomic assessment of data available from the Bank Lending Survey of the CNB conducted so far has shown that there are statistically significant and, in economic terms, expected effects of standards and demand on the growth of certain groups of loans.

Generally, credit growth reacts faster to changes in credit demand, whereas changes in credit supply affect credit growth with a somewhat greater lag. A rise in the demand for loans to enterprises causes, *ceteris paribus*, a rise in the quarterly credit growth of 3.3 to 6.1 percentage points in the same quarter. On the other hand, with a lag of three quarters, banks reporting expectations regarding general economic activity as a factor of tightening standards for loans to enterprises experienced a loan growth which was 2.4 to 3.3 percentage points lower compared to other banks. Also, banks reporting debt restructuring as a factor contributing to increased demand for loans to enterprises experienced a 2.1 to 2.7 percentage points greater loan growth compared to other banks.

As for consumer credit and other lending to households, the rise in demand causes a rise in the quarterly credit growth of 1.4 to 2.6 percentage points depending on the lag, whereas the easing of standards causes, in the same quarter, a rise in the quarterly growth of consumer

credit and other lending of 1.7 to 2.0 percentage points. For loans for house purchase, the analysis has shown no statistically significant correlations between credit supply and demand and credit growth. This is because only ten rounds of the Survey have been conducted at this time which is a relatively short period and it is therefore difficult to find significant correlations for the portfolio of loans with longer average maturities. Also, changes in credit supply and demand were less frequently reported for loans for house purchase, which reduces the variation in the data needed to obtain meaningful results.

Control variables have had a weak effect on decreasing the significance of assessments from the basic specifications, which increases the importance of standards and demand reported in the Survey as determinants of credit growth. As for control variables themselves, the greatest significance is shown by nominal interest rates on newly placed loans, especially with consumer credit and other lending to households. In accordance with expectations, the growth of interest rates always causes a fall in credit growth. Capital adequacy shows a smaller average significance and its increase decreases credit growth, whereas no significant effect of funding costs on credit growth has been found.

Recent credit activity has been weak, despite the high primary liquidity in the monetary system maintained by the CNB. These developments are the result of subdued demand, reduced disposable income of households, weak labour market and negative expectations. The results of the panel analysis have shown that there can be no recovery of credit activity without improvements in demand and economic outlook, which can only be achieved through credible implementation of structural reform.

Finally, this paper also presents a way in which the results of the Survey, apart from a descriptive analysis, may be used for econometric assessments. After new rounds of the Survey have been conducted and data time series extended, more exhaustive and relevant analyses of correlations between qualitative data from the Survey and quantitative monetary statistics data will be possible.

# Appendix

## I. Estimates from model of growth in lending to enterprises

TABLE 2: Estimates from model of growth in lending to enterprises A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Loan growth (t-1)	-0.0457 (0.0864)	-0.0838 (0.0761)	-0.1115 (0.0899)	-0.1299 (0.0880)	-0.2829*** (0.1072)	-0.2876*** (0.1100)	-0.2669*** (0.0802)	-0.2777*** (0.0836)	-0.2955*** (0.0935)	-0.3308*** (0.1008)
<u>Credit standards</u>										
Tightened	0.074 (1.311)	0.903 (1.400)								
Tightened (t-1)			1.524 (1.413)	2.085 (1.373)						
Tightened (t-2)					0.332 (1.331)	0.413 (1.393)				
Tightened (t-3)							-1.088 (1.352)	-1.113 (1.327)		
Tightened (t-4)									-2.684 (1.738)	-3.176* (1.689)
<u>Credit demand</u>										
Increased	4.535*** (1.629)	4.055** (1.787)	3.670*** (1.350)	3.259** (1.393)	4.684*** (1.419)	4.605*** (1.421)	4.440*** (1.617)	4.405** (1.787)	5.565*** (1.842)	6.110*** (1.970)
<u>Control variables</u>										
Interest rate new loans		-2.089* (1.188)		-1.42 (1.097)		-0.289 (1.044)		-0.143 (0.987)		-0.003 (1.034)
Capital adequacy		-0.596 (0.626)		-0.110 (0.254)		-0.338 (0.266)		-0.459 (0.334)		-0.768** (0.368)
Cost of funds		0.549 (2.125)		-1.071 (2.120)		0.444 (2.279)		1.289 (2.757)		0.446 (3.427)
Constant term	0.066 (0.864)	25.306 (16.831)	-0.119 (0.725)	15.750* (8.733)	0.277 (0.764)	7.540 (9.363)	0.334 (0.799)	6.499 (11.837)	0.094 (0.821)	13.324 (14.048)
Observations	261	259	227	225	200	198	171	169	145	143
R-squared	0.37	0.41	0.48	0.50	0.59	0.60	0.48	0.50	0.57	0.60
Adjusted R-squared	0.26	0.29	0.38	0.38	0.50	0.49	0.35	0.35	0.43	0.46
Number of banks	29	29	29	29	29	29	27	27	27	27

Note: Dependant variable: Quarter-on-quarter growth of loans to enterprises, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

TABLE 3: Estimates from model of growth in lending to enterprises B

	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Loan growth (t-1)	-0.2932*** (0.0979)	-0.3092*** (0.1057)	-0.3060** (0.1184)	-0.3524*** (0.1307)	-0.1043 (0.0867)	-0.2735** (0.1227)	-0.3233*** (0.1071)
<u>Credit standards</u>							
Tightened (t-1)	3.217** (1.444)	3.695** (1.494)			2.513* (1.394)	2.401* (1.391)	3.146** (1.431)
Tightened (t-4)			-3.043 (1.964)	-3.494* (2.022)			
<u>Credit demand</u>							
Increased (t-1)					0.597 (1.536)		
Increased (t-2)			-1.974 (1.639)	-2.044 (1.470)		-0.705 (1.430)	
Increased (t-3)	-2.595* (1.393)	-2.308* (1.343)					
Increased (t-4)							-2.361 (1.875)
<u>Control variables</u>							
Interest rate new loans		-0.993 (0.967)		-0.503 (1.060)	-1.749* (1.039)	-1.069 (0.871)	-1.558** (0.753)
Capital adequacy		-0.338 (0.320)		-0.643* (0.385)	-0.153 (0.294)	-0.280 (0.292)	-0.567* (0.313)
Cost of funds		3.558 (2.990)		3.840 (3.860)	-0.456 (2.508)	0.753 (2.598)	3.404 (3.608)
Constant term	1.833** (0.755)	5.611 12.733	3.061*** (1.139)	8.588 (14.655)	18.111* (9.699)	12.952 (9.996)	14.249 (12.783)
Observations	179	176	150	147	235	202	150
R-squared	0.48	0.50	0.53	0.56	0.44	0.58	0.55
Adjusted R-squared	0.35	0.36	0.38	0.41	0.31	0.48	0.40
Number of banks	28	28	28	28	29	29	27

Note: Dependant variable: Quarter-on-quarter growth of loans to enterprises, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

TABLE 4: Estimates from model of growth in lending to enterprises C

	(18)	(19)	(20)	(21)	(22)	(23)
Loan growth (t-1)	-0.0287 (0.0857)	-0.0556 (0.0823)	-0.2582** (0.1101)	-0.2661** (0.1122)	-0.2823*** (0.0837)	-0.3033*** (0.0860)
Credit standards factor:						
Expectations regarding general economic activity						
Tightened	0.598 (1.198)	0.861 (1.349)				
Tightened (t-2)			-1.451 (1.070)	-1.538 (1.124)		
Tightened (t-3)					-2.772*** (1.027)	-3.299*** (1.098)
Credit demand factor:						
Debt restructuring						
Increased	2.183 (1.370)	2.148 (1.415)	2.055* (1.129)	2.184* (1.150)	2.553** (1.251)	2.675** (1.314)
Control variables						
Interest rate new loans		-2.198** (1.105)		-0.622 (0.933)		-0.760 (1.042)
Capital adequacy		-0.462 (0.616)		-0.288 (0.286)		-0.466 (0.329)
Cost of funds		0.069 (2.167)		1.490 (2.240)		2.217 (2.486)
Constant term	0.302 (0.952)	25.360 (17.201)	1.612** (0.803)	7.492 (9.694)	1.628** (0.796)	10.217 (11.352)
Observations	263	261	201	199	173	171
R-squared	0.36	0.39	0.58	0.59	0.49	0.51
Adjusted R-squared	0.25	0.27	0.49	0.48	0.36	0.37
Number of banks	29	29	29	29	27	27

Note: Dependant variable: Quarter-on-quarter growth of loans to enterprises, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

TABLE 5: Estimates from model of growth in lending to enterprises D

	(24)	(25)	(26)	(27)	(28)	(29)
Loan growth (t-1)	-0.2985*** (0.0971)	-0.3262*** (0.1050)	-0.3053*** (0.0995)	-0.3300*** (0.1069)	-0.2873*** (0.0955)	-0.3137*** (0.1027)
Credit standards factor: Expectations regarding general economic activity						
Tightened (t-3)	-2.650** (1.161)	-3.168** (1.232)	-2.720** (1.200)	-3.104** (1.272)	-2.433** (1.138)	-2.946** (1.207)
Credit demand factor: Debt restructuring						
Increased (t-1)	1.688 (1.093)	1.490 (1.082)				
Increased (t-2)			0.354 (1.098)	0.411 (1.118)		
Increased (t-3)					-0.567 (1.154)	-0.395 (1.290)
Control variables						
Interest rate new loans		-0.966 (1.066)		-0.919 (1.007)		-1.073 (1.051)
Capital adequacy		-0.454 (0.352)		-0.457 (0.352)		-0.503 (0.352)
Cost of funds		4.889* (2.873)		4.173 (2.986)		4.124 (2.927)
Constant term	2.192*** (0.838)	4.775 (11.932)	2.775*** (0.919)	6.787 (11.876)	2.950*** (0.988)	9.108 (11.993)
Observations	177	174	178	175	184	181
R-squared	0.46	0.49	0.46	0.49	0.46	0.49
Adjusted R-squared	0.32	0.34	0.32	0.34	0.32	0.34
Number of banks	28	28	28	28	29	29

Note: Dependant variable: Quarter-on-quarter growth of loans to enterprises, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

## II. Estimates from model of growth of consumer credit and other lending

TABLE 6: Estimates from model of growth of consumer credit and other lending A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Loan growth (t-1)	0.13680 (0.0863)	0.0859 (0.0877)	0.1104 (0.0912)	0.0944 (0.0902)	0.0880 (0.0878)	0.0747 (0.0901)	-0.2950*** (0.1111)	-0.2743** (0.1102)
<u>Credit standards</u>								
Eased	0.894 (1.001)	0.679 (0.949)			1.024 (1.036)	0.937 (1.052)	1.993* (1.126)	1.722* (1.013)
Eased (t-1)			-0.133 (1.357)	-0.319 (1.363)				
<u>Credit demand</u>								
Increased	1.024 (0.768)	0.875 (0.776)	1.426* (0.818)	1.450* (0.800)				
Increased (t-1)					2.425*** (0.716)	1.979** (0.763)		
Increased (t-4)							0.105 (0.894)	0.238 (0.904)
<u>Control variables</u>								
Interest rate new loans		-0.832 (0.588)		-1.148 (0.755)		-1.333 (0.979)		-3.383*** (1.070)
Capital adequacy		-0.316*** (0.119)		-0.172 (0.122)		-0.199 (0.126)		0.152 (0.171)
Cost of funds		1.575 (1.233)		1.067 (1.429)		0.238 (1.616)		-2.094 (2.429)
Constant term	-0.020 (0.295)	9.884 (7.743)	0.180 (0.294)	12.101 (9.399)	-0.186 (0.340)	16.656 (12.427)	0.489 (0.329)	37.582*** (13.725)
Observations	257	255	225	223	225	223	142	140
R-squared	0.39	0.43	0.41	0.44	0.41	0.43	0.61	0.67
Adjusted R-squared	0.28	0.32	0.29	0.31	0.28	0.30	0.48	0.54
Number of banks	29	29	29	29	29	29	27	27

Note: Dependant variable: Quarter-on-quarter growth of consumer credit and other lending, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

TABLE 7: Estimates from model of growth of consumer credit and other lending B

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Loan growth (t-1)	0.1004 (0.1085)	0.0821 (0.1103)	-0.0031 (0.1293)	0.0273 (0.1276)	-0.1011 (0.1524)	-0.0839 (0.1450)	-0.2727* (0.1630)	-0.2103 (0.1461)
<u>Credit standards</u>								
Eased (t-1)	-0.860 (1.425)	-1.017 (1.496)						
Eased (t-2)			-0.440 (1.173)	-1.235 (1.386)				
Eased (t-3)					-0.492 (1.201)	-0.622 (1.470)		
Eased (t-4)							3.984 (3.883)	3.852 (3.482)
<u>Credit demand</u>								
Increased (t-1)	2.277*** (0.737)	1.520* (0.851)	2.649*** (0.801)	1.853** (0.932)	2.465*** (0.849)	1.237 (0.928)	1.576* (0.924)	1.030 (0.978)
<u>Control variables</u>								
Interest rate new loans		-2.098* (1.269)		-3.538** (1.723)		-4.933*** (1.734)		-5.767*** (2.151)
Capital adequacy		-0.330* (0.187)		-0.106 (0.185)		0.054 (0.199)		0.225 (0.228)
Cost of funds		2.555 (2.425)		2.601 (2.956)		0.864 (2.756)		-0.647 (2.713)
Constant term	0.312 (0.382)	20.735 (13.471)	0.247 (0.447)	31.122* (17.892)	0.227 (0.519)	47.163*** (14.833)	0.183 (0.475)	56.0789*** (20.614)
Observations	235	232	203	200	176	173	149	146
R-squared	0.32	0.37	0.35	0.42	0.38	0.46	0.47	0.55
Adjusted R-squared	0.19	0.23	0.20	0.26	0.22	0.30	0.31	0.40
Number of banks	29	29	29	29	28	28	27	27

Note: Dependant variable: Quarter-on-quarter growth of consumer credit and other lending, excluding one-off effects and the exchange rate effect. Unbalanced panel regression with bank and quarter fixed effects. Heteroscedasticity robust standard errors in parentheses.

\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

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