The Impact of Financial Diplomacy and the Effects of Financial Crisis on Norwegian Firms' Capital

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Abstract. This research focuses on investigating changes in the financial diplomacy of the Norwegian firms' leverages due to the decrease in banks' lending as a consequence of the financial crisis shock wave. The research question is whether the leverage ratio measured as debt-to-equity significantly declined as a consequence of the credit crunch. Its purpose is to analyze the relationship between firms, financial diplomacy and banks and find out its implications on the capital structure, answering to the question whether firms whose bank received a large shock after Lehman Brothers' default changed their capital structure or they found substitutes for bank lending. This paper does not study whether the changes in financial leverage led to a decreased performance of the companies, the research focuses on the relationship between Norwegian financial diplomacy and firms, emphasizing how performance of the banks influences the way in which a company finances its assets and which substitutes does it have when there is a credit crunch.

Keywords: financial diplomacy, economic diplomacy, capital structure, financial crisis, leverage, trade credit, Norway.

Introduction

Economic diplomacy has been transformed in the last two decades with the end of the Cold War and the advance of globalization. Financial diplomacy, a subset of economic diplomacy, changed more slowly, and the International Monetary Fund (IMF) and the World Bank, while not achieving universal membership, remained the dominant institutions. Resolutions of the last financial crisis of the 21st century followed the usual pattern. The finance ministers of the Group of Seven developed countries (G7) led by the United Stated of America, encouraged the IMF to mount rescue packages linked to policy reforms (Bayne, 2008). The G7 countries then worked out for „new international financial architecture” to be adopted by the IMF and the
World Bank and to prevent the recurrence of similar problems (Bayne, 2008).

This paper examines the importance of financial diplomacy in economic diplomacy under investigation of the banking system. In my study, economic diplomacy involves the states and their external economic relations, as well as the methods of taking and negotiating their decisions and strategies at domestic or international level. The tools of economic diplomacy in this situation are: ministers, private companies, civil society, transparency, and the role of international financial institutions, particular International Monetary Fund (IMF) which is focused on financial diplomacy, finance ministers and central banks (Bayne, 2008).

The last financial economic crisis raises important challenges for Europe countries that could use their convening authority to establish a new regime of financial diplomacy (Calestous, 2009). The financial crisis from 2008 affected also the European banking system, not only the US one. The turmoil, which started due to subprime loans and derivative products, negatively influenced the West European banks, which in turn transmitted the shock, through their ownership to the Central and Eastern European banks.

The increase in loans was an effect of the increasing demand for consumption in countries from East and Central Europe. Due to the fact that in this region the capital market is not developed enough, the individuals and companies that needed financing, had to apply for a loan, leading to an increase in the demand for loans. Taking into account that these banks cannot raise all money required to give all the loans, they have to find another source of funding, that was very expensive and that had no liquidity problems. The financing came from the West European banks that had strong influence in the Central and Eastern European countries due to their ownership in the banks from these countries. It is worth mentioning that the West European banks had also to search for external financing, using the US money market, which was cheaper, to get the required funds.

The financial crisis from 2008 produced massive changes in the way economic actors behave. The Lehman Brothers’ default surprised everybody, plunging the entire system into chaos. All over the world, the shock was transmitted to banks, which found difficulties to raise finance in the money markets. Financial diplomacy has a very important role in the way a firm is financing its activity, therefore any change in the stability of the bank may influence the capital structure of its borrower. This paper
analyzes whether the shocks to banks had any effects on financial diplomacy and on companies’ capital structure.

The topic is interesting to study because it explains the impact of a large financial disequilibrium on real economy by analyzing the factors that determined firms’ leverage and looking at the lending-borrowing relationship. In addition, it is important to study the capital structure because for investors a strong balance sheet is a criterion taken into consideration when they invest in a company, and one of the measurements to evaluate the strength of the balance sheet is the capital structure. The ability of banks to lend increases if it has deposits, therefore saving banks may transmit less shock than commercial banks.

Since the crisis started many researchers have quantified the damage caused by the credit crunch. Although the evidence regarding the capital requirements is mixed, it was shown that it was a very important factor in the Norwegian banking system during the 2008 turmoil, making it more resistant to shocks, and as a consequence, decreasing the effect of the financial crisis on borrowers. Other papers have examined which firms were affected the most, Iyer et al. (2010) analyzed whether firms with multiple banking relationships could substitute a reduction of credit from one of their banks with more from another one much stronger. Few researches have approached whether the financial leverage of firms decreased because of the credit crunch, Gertler and Gilchrist (1994) sustained those small firms’ current debt (consisting mainly of bank loans) decreases, while that of large firms increases. Kudlyak and Sánchez (2010) tested these findings for the 2008 financial crisis and founded that the short-term debt of large firms decreases compared to small firms. The present paper addresses this gap on the literature by identifying the type of the relationship between the two variables.

Banking system - problems during the crisis

A bank has two major sources of funding: retail funding and wholesale funding. The former is attracted from the households’ deposits, while the latter is attracted from other markets, in order to finance bank’s assets (loans). Moreover, wholesale funding comprises short-term debt instruments, such as interbank loans, repurchase agreement (repos), commercial papers and certificates of deposits, as it is shown by Treapăț (2013, pp.9-25). According to Borio (2009), and Boot and Thakor (2010), the banks relied more on the financial markets leading to short term financing and hence in a strong growth of their activities. In the end, this has
lead to a mismatch of maturity between assets and liabilities, having an important impact regarding the crisis in the banking field.

Another important element that contributed to the diffusion of the financial crisis was the globalization process. Given this situation, European banks had to find new sources of financing outside their borders and, given the accessibility and development of the US dollar market became dependent on the US dollar market. The financial crisis of 2007-2009 has brought up new challenges for European banks in terms of market access and cost in order to finance their liabilities. For many banks, the mismatch between the maturities of assets, that were long-term and liabilities, that were short-term, exposed them to liquidity risk, being more vulnerable in case of any change in the market.

Moreover, the low level of the US regulation and their supervisory responsibility are to blame for the 2008 turmoil because banks agreed to give loans to people that were not able to repay the loan together with the principal and the interest rates. Banks wanted to increase credit demand. The lack of client supervision during the contract was also missing. Another problem was that the European banks’ funding was made with a higher proportion of short-term debt and little level of equity. If banks had funded themselves with equity, they probably would have been able to surpass more easily their financial problems and they would have not been in the position to search for government help or other type of help that generates restrictions over a long period of time.

According to Impavado, Rudolph and Ruggerone (2013), after Lehman Brothers’ default, the shock received by the European banking system increased because they could not finance anymore on the US money market. In order to avoid an even higher financial distress, central banks had to provide funds to banks, taking the place of the interbank US dollar market. Also, governments were involved in saving banks through capital injections and changing the regulation regarding the loans (more restrictive rules). The new regulations imposed that banks should finance their activities less with wholesale funding and more with consumer deposits and equity.

Due to high domestic demand for credit in European countries with fixed exchange rates, there was a need for an inflow of capital. The external funding levels (through swaps) were the highest during the crisis because European banks were not able anymore to finance through the US money market. This external funding of Central and Eastern European countries led not only to a rapid growth of credit expansion (more than 50%
comparative to last years), but also to imbalances at internal and external level and also to an increase of wages and inflation (Impavido, 2013).

From all the regions that used external financing, the countries from Europe were the most affected in terms of GDP, because during 2008-2009 the GDP in these countries fall from 6% to -5%. In these countries the foreign financing has a more important role than in other regions. One of the causes of the crisis in Europe is related to the desire of the European states to have a financial system that would converge to a set of common rules for all member states, starting with the monetary union. Some countries, like Ireland and Greece, did not present real financial data about the actual state of the economy, which mislead investors and the European Union institutions. There are rumors that the EU institutions knew about these problems, but accepted high deficit and debt levels during the turmoil for some countries, increasing the probability of a crisis affecting the whole European financial sector. The European banking system was too dependent on the American one and when the latter collapsed, the former had serious liquidity and debt problems. Moreover, some of the European banks were involved in trading with high-risk financial crisis. Another problem was that the banks had also to use part of their funding to finance the deficits of the government and they did not have enough money to lend to clients, helping them to surpass this difficult moment. In the graph below it is presented the situation of the countries affected by the crisis.

![Figure 1. Financial crisis in the European Union](http://www.economist.com/node/21536871)
Another element that had important effects on the dimension and the consequences of the crisis in the EU was the role of the rating agencies. Because they downgraded the rating for some countries due to crisis’ risks, the bond yields have increased as well as the pressure in the bond market, leading to more difficulties for government to obtain new funding. The government had trouble in raising new funds because the trust of the investors had decreased and they were not willing to lend.

Effects of bank regulation on credit supply

Due to the fact that government insures banks, their behavior is not independent, but is constrained by a series of regulations. Financial diplomacy, by financial and diplomatic institutions, also has a systemic importance. It intermediates the relationship between capital holders and capital borrowers creating liquidity in the economy, therefore regulation is required. This subsection will analyze how financial diplomacy affected banking regulation and the lending process before and after the credit crunch.

Tosti (2008) believes that we are not even half the way through and that the next “excellent crashes” will be in the corporate sector (not only carmakers are in distress) after disclosing their financial results of 2008 at the beginning of next year. In the aftermath of the crisis large multinational corporations have been financing strategic suppliers by shortening the terms of payments. The fact that commercial aspects prevail on credit risk management will increase risk and dry up liquidity from the core business (Tosti, 2008). Most likely the public sector will be hit in a further stage and we seriously wonder if there will be enough taxpayer-money left by then for further rescue plans. Last but not least: the huge amount of liquidity provided by the various bail out schemes will produce – sooner or later – inflation (Tosti, 2008).

Bank regulators adopted capital rules and standards for capital in relation to risk-weighted assets to discipline excessive risk-taking managers. Treapăt (2011) argues that Basel Committee on Banking Supervision created an international standard for regulators to control how much capital banks need to put aside to face risks. Basel imposed risk weighting of assets and a minimum 8 per cent regulatory capital to limit bank’s leverage, hence if banks lend only to top quality borrowers, they could have a larger loan portfolio. Since banks offer credits not only to low risk profiles,
and sometimes is difficult to evaluate credit risk, as it happen in the 2007-2008 financial crisis, the capacity of banks’ lending will diminish.

Capital requirements were criticized in the literature because banks failed to respect them and they did not prevent the crisis. Cohen (2013) considers that if regulation forces banks to save capital too rapidly, there will be macroeconomic costs by making the banks to lend less for investments. Other studies, like the one of Oxford Economics, suggests that higher capital requirements are negatively affecting bank behavior and economy, increasing bank lending rates through the increased capital levels, requirements to hold more liquid assets, and rationing of the credit for shrinking the risk-weighted assets.

Capital regulation of banks was reformed after the financial crisis. Hellwig (2010) argues that changes were too small and that model-based approach allowed banks to undercapitalize prior the crisis, therefore he thinks strong requirements should be put in place. He contradicts Frenkel and Rudolf’s statement (2010) that high capital requirements will induce a credit crunch. On the other hand, Vallasca and Keasey (2012) had an empirical approach on a sample of listed European banks and identified that capital and liquidity requirements, as in the Basel III Accord, improve the resistance to systemic shocks and that bank size is a key determinant to risk exposure. They sustain that smaller economies should have smaller banks to reduce risk exposure to systemic events.

Bank lending is exposed to macroeconomic shocks because the demand for loan is pro-cyclical. However, credit supply can behave in a different manner according to business cycle because banks are likely to smooth lending through the cycle (Thakor, 2004), therefore well-capitalized bank can face and absorb financial difficulties. Using a sample of Italian banks, Gambacorta and Mistrulli (2004) found out that bank capital matters in the expansion of different shocks to lending, in addition to the existence of regulatory capital constraints. Peek and Rosengreen (1995) investigated the direct link between regulation and bank lending behavior stating that the presence of regulatory actions seriously limits the credit available from lenders. They also showed that shrinkage in bank’s assets does not necessarily affect borrowers if it is due to securitization.

These regulation measures were taken to discipline through capital requirements and to decrease bank’s excessive risk-taking, also called the moral hazard problem. Therefore banking regulation affects the lending process by decreasing the number of credits. On the other hand, capital
requirements helped Norwegian banks to face better the crisis, as shown in the following section.

**Effects of financial crisis in Norway on banking lending**

The bankruptcy of Lehman Brothers caused the interbank market to freeze due to information asymmetry. The negative effect of the breakdown of international money markets was a huge credit supply contraction, followed by low investments and economic recession. Norwegian banks were financing their activities from international money markets, especially from the United States. When money markets started to ask for extremely high-risk premiums, they transmitted the shock to Norway’s dollar-based money market, being unable to give loans anymore to many companies.

In the literature related to the topic, Iyer et al. (2014) found out that banks that rely more on interbank borrowing before the crisis decrease their credit supply more during the crises. They conclude that credit supply reduction due to interbank liquidity exposure is much higher for firms that are small in size, younger, with lower banking relationship (measured by credit volume before crisis). For large firms results are not statistically significant. Iyer et al. (2013) also found out that a 10 per cent increase in borrowing in the interbank markets prior to the crisis leads to a 4 per cent reduction in firm credit availability during the crisis. Furthermore, Vazquez and Federico (2012) showed that banks with weaker structural liquidity and higher leverage in the pre-crisis period were more likely to fail after the crisis. The likelihood of bank default increases with bank risk-taking. Norwegian banks have managed to perform better than other foreign counterparts due to several factors. Vazquez and Federico (2012) have shown that they were better capitalized, conformed to more regulation, able to find faster other sources of liquidities and they were not very exposed to the real estate market. Norwegian regulation has not allowed the type of securitization seen in the US and other markets.

The situation in Norway was improved due to the intervention of the government and the central bank. To support the equity capital of banks, which is important in the lending process, the Government Finance Fund and the Government Bond Fund were created. The crisis and the government encouraged measures that made markets to requite a higher tier 1 capital than the standard, especially for banks that were borrowing from international money markets. Banks that were using their own models to calculate Basel II requirements had to hold in 2008 at least 90 per cent of
the requirement from Basel I. Norway’s regulation was more solid than in other major financial markets. The fact that Norwegian Banks had higher capital than it was demanded helped them to face increased losses, lower revenues, and to get access to capital easier. The interbank rates started to decline after central bank’s infusion of liquidity and low interest rate policy.

Bank lending to the corporate sector was very high before the crisis. Large firms’ demand for loans in the Norwegian credit market increased during the crisis due to additional restrictions imposed by foreign banks and difficulties in obtaining loans in securities markets. In an important contribution, Murfin (2009) investigated how lender shocks have an impact on the loan strictness. He found evidence that banks write tighter contracts after suffering payment defaults to their own loan portfolios and that contract tightening is most pronounced for borrowers who are dependent on a small circle of lenders. Other papers that have examined the topic are the ones written by Bernanke and Gertler (1995) and Rosengren (2008) who studied various shocks to lenders on credit availability in the economy.

Ivashina and Scharfstein (2010) showed that new loans to large borrowers fell by 47 per cent during the peak of the financial crisis and by 79 per cent relative to the peak of the credit boom. After the Lehman Brothers default, there was a run by short-term creditors, making it difficult to roll over their short-term debt. They also showed that banks cut lending less if they had better access to deposits. According to these studies, the financial crisis negatively affected firms by decreasing their access to bank loans. Large borrowers were affected by the credit crunch, but the most affected firms were the small ones, with not too many alternatives of funding. The less affected were firms whose banks had better access to deposits, higher liquidity, lower leverage, and less dependence on international money markets. In Norway, most of the banks were highly exposed to dollar-based money markets and most of the companies were financed through bank loans prior the crisis, therefore there are enough reasons to question whether the shock received by lenders reflected in a decrease of the borrowers’ leverage.

The present research complements the Ivashina and Scharfstein’s paper concerning the ability of saving banks to overcome financial turmoil by not forcing borrowers to adjust their balance sheets’ right side. Norwegian banks had higher capital than it was demanded, managing to face better the crisis. The government adopted several measures to increase banks’ liquidity, but were these measures enough to absorb the shock and not to produce any changes in the firms’ capital structure? We analyze whether
Norwegian banks that performed better in this context succeeded to have a smaller negative impact on its borrowers.

**Substitutes for bank lending**

The banking crisis affected real economy by changing the opportunities of the private sector to access credits to fund their investments and consumption. Liquidity shocks to banks might negatively affect firms if they cannot face the credit constraints from the more affected banks. If firms could substitute credit easily, they could not be affected by the credit supply reduction, therefore the effects of the crisis would be small. It is important to analyze if firms had chosen other alternatives when banks were in shock because firms’ capital structure might have not suffer any changes if bank credits were replaced by other types of debt. This subsection analyzes firms' various alternatives of financing sources to understand which ones were preferred and were available before and during the financial crisis.

According to the pecking order theory, the cost of financing increases with asymmetric information, hence companies rank their financing sources, preferring internal financing, then debt, and lastly equity. Taken into account this theory, we assume that when firms had to face the effects of the credit crunch, they preferred first to look for other debt alternatives, rather than changing their capital structure by issuing new equity. As the theory argues, managers have more information about the company and when they issue new equity, investors may believe that the firm is overvalued. As a consequence, investors will offer a lower price, making the issuance of new equity less preferable.

The empirical literature tried to demonstrate that firms choose their capital structure according to their characteristics. Due to tax shield, the net benefit of debt is positive; therefore firms will likely prefer more debt to equity. During the credit crunch from 2008 lending was not available anymore; therefore the estimation of firms’ leverage should not include only determinants of the demand side, but also factors of the supply side (Faulender & Petersen, 2006).

Chava and Purnanandam (2009) showed that firms whose banks were exposed to 1998 Russian crisis and that primarily relied on bank capital suffered larger valuation losses than firms that had access to the public debt-market. Greenspan (1999) suggests that in countries where the capital markets are well developed, the impact of distressed banks is less negative.
Even if some firms choose to borrow from the bond market, many others are still exclusively dependent on banks. Bank loans are the most important source of external funding in most countries (Mayer, 1990). In addition, information asymmetry plays an important role when firms have to choose their financing sources. According to Myers and Majluf (1984), adverse selection costs are the most important factor in capital structure decision making. Capital markets are more transparent compared to banks, so we might think that borrowers prefer banks. Nevertheless, the presence of information asymmetry makes harder the evaluation of the firms’ credit worthiness; therefore banks may not fund many good projects (Stiglitz & Weiss, 1981). When there is a strong competition on funding, banks have to choose the well performing companies (Rajan & Zingales, 1998). When credit markets froze after Lehman Brothers’ default, financial institutions could not measure the real risk exposure and decided not to lend anymore. Furthermore, Bernanke (1983) argues in one of his studies that economic institutions affect costs of transaction between lenders and borrowers, therefore credits are given harder during crises and easier otherwise.

In an important contribution based on Spanish SMEs, Carbo-Valverde et al. (2012) show that firms affected by the credit crunch used trade credit as an alternative source of financing. They found that financially constrained firms depend more on trade credit and the financial crisis increased the number of credit-constrained companies. Other findings suggest that in the US stronger large firms gave more trade credit to weaker large firms during the financial crisis (Garcia-Appendini & Montoriol-Garriga, 2011). Although there are other sources of finance that provide the same services as banks, Hoshi et al. (1990, 1991) argue that decreases in bank lending are usually not substituted by other external funds, and they continue with an increased dependence of investment on earnings.

According to the existing literature and theories, firms prefer credits as a main source of finance, instead of borrowing from the capital market or issuing new equity, both being more expensive than credits. The present thesis tests the hypothesis whether firms decreased their leverage due to the credit crunch and will complement Carbo-Valverde et al.’s research, testing whether their assumption applies on Norwegian firms.
Hypotheses and models

This section states the hypotheses tested and presents the statistical variables that will be applied to the sample.

**Hypothesis 1:** Borrowers from banks whose stock price dropped substantially were more affected than borrowers from banks whose stock price dropped less. The research tests whether banks that performed worse by having big decreases in stock price had a larger negative impact on its borrowers' leverage.

**Hypothesis 2:** Firms changed their capital structure, by decreasing their leverage due to the credit crunch. We may think that a contraction in banks’ credit supply decreases the leverage of firms, making them to change their capital structure. This hypothesis testing’s result offers a better understanding of the causality between the two.

**Hypothesis 3:** The capital structure of firms that borrow from saving banks was less affected than capital structure of firms that borrow from commercial banks. This hypothesis complements Ivashina and Scharfstein’s paper, which showed that banks that had access to deposits affected less its borrowers.

**Hypothesis 4:** Norwegian firms substituted bank loans with trade credit. Carbo-Valverde et al. (2012) already showed that small and medium companies from Spain used trade credit when bank loans were not available anymore during the crisis. By testing this hypothesis, I investigate whether firms choose to lend to each other to overcome the lack of banking financing in Norway.

The dependent variable represents the firms’ capital structure and is quantified by the leverage ratio measured as debt-to-equity for company $i$, year $t$.

$Leverage_{i,t} = \frac{Debt_{i,t}}{Equity_{i,t}}$

To measure the shock received by banks during the financial crisis, I use as independent variable banks’ return. The financial distress faced by banks during the credit contraction and their inability of lending is information that was most likely reflected in the share price. The variable is linked to its borrower $i$. To identify whether the third hypothesis is true, I include a
dummy variable $TypeBank_{i,t}$ which is 1 in case of a saving bank, and 0 in case of a commercial bank.

The dependent variable for the fourth hypothesis is the trade credit measured by debt to companies in the same group. To distinguish whether the observation is before or after the crisis, I will include a dummy variable $LBT_{i,t}$ which will take the value 1 if the observation is after 2008 (Lehman Brother’s default), and 0 otherwise.

**Conclusion**

There is no evidence that the financial diplomacy during the crisis that affected the West European banks was transmitted to the Central and Eastern European banks, where the former had ownership. Although there is empirical evidence that did not sustain this hypothesis, in my analysis of the relation between the West European banks and the Central and Eastern European banks during the crisis, there was no significant result leading to establishing a direct link between them.

The datasets will include banks’ share prices collected from the Oslo Stock Exchange and information about Norwegian firms from different sources. Norwegian companies are required to publish their financial statements; therefore information about their capital structure will be collected from their balance sheet. The sample of firms will include only non-financial companies and the bank sample will contain only the ones related to the Norwegian firms.

To analyze the situation before and after the crisis, the sample will contain data from ten years. The variables will have values from 2003 to 2012. The period before the credit crunch will be from the end of 2003 to the end of 2007, year 2008 will mark the start of the credit crunch as the Lehman Brothers defaulted during that year, and the effects of the crisis will be included in the period from the end of 2008 to the end of 2012. Since the debt and equity are reported at the end of a financial year, the data in the sample will be annually.

Due to the fact that the level of this integration was low, the problems that the European states faced were greater. An advantage of the integration is that it insures financial stability for all member states. On the other hand it provide the same requirements for bank credit in all member states. Because there are some states that are reluctant regarding the advantages of this integration, the implementation of this process has difficulties (Ilie,
European banking system integration, as well as the financial diplomacy, offers efficiency and diversification advantages, but also disadvantages such as the risk that distress at cross-border level will lead to a reduction in banks’ activity even if the environment in which the banks are operating is not directly affected by the origins of the distress.

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**References**


Cohen, B. (2013). How have banks adjusted to higher capital requirements?. Retrieved from http://www.bis.org/publ/qtrpdf/r_qt1309e.pdf


