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Piotr BOGUSZEWSKI\*  
Maria LISSOWSKA\*\*

## Low Reliance on Credit Among Polish Firms: A Blessing in Disguise at a Time of Financial Crisis?

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**Summary:** The article explores the extraordinary resilience of the Polish economy to the implications of the global financial crisis despite Poland's strong integration with other economies. The authors hypothesize that one of the key reasons for this resilience is a low reliance on credit among Polish firms and their low use of financial leverage.

To validate their hypothesis, the authors use both macroeconomic data (reflecting the role of credit in company balance sheets) and data from surveys carried out annually on a representative sample of companies by Poland's Central Statistical Office (GUS) and the country's central bank, the National Bank of Poland (NBP).

The research shows that many firms decide against using credit at all if possible. Interestingly, the authors say, not only companies with a poor financial standing and those whose loan applications have been turned down follow this policy. Generally, Polish companies have been doing relatively well financially in recent years, the authors note, so their limited use of leverage is the result of a conscious choice rather than necessity, especially in the case of companies in relatively good shape. This is in line with the "pecking order" theory under which companies tend to obtain financing from sources that are readily available and then steadily move on to sources that may be more difficult to utilize. This means that a company is likely to make use of its internal resources first. Such a model of financing results in the relative resistance of Polish firms to any periodic tightening in bank lending policies and, consequently, in their greater resilience to the financial crisis, Boguszewski and Lissowska say.

**Keywords:** post-transition economies, financial crisis, leverage

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\* Institute of Economics, National Bank of Poland; the views expressed in this paper are exclusively those of its authors and do not necessarily reflect those of the National Bank of Poland, e-mail: piotr.boguszewski@nbp.pl

\*\* Warsaw School of Economics and European Commission; the opinions expressed in this paper are exclusively those of its authors and are not binding in any way on the European Commission, e-mail: lisso@sgh.waw.pl

## Introduction

The global financial crisis has highlighted the active role of credit in the economy. This paper aims to follow up on one of the conclusions of the European Bank for Reconstruction and Development's 2009 Transition Report, according to which financial integration may have significantly contributed to the crisis in post-transition countries by encouraging credit booms and over-borrowing. As a consequence of an excessive leverage of firms, the credit crunch brought about a deeper recession, the EBRD says.

There are several theories on the role of credit in the cyclical behavior of economies and their sensitivity to shocks. The financial accelerator model developed by Bernanke et al. [1998] is one of the most prominent in this field. According to this model, during the ascending phase of the business cycle, company profits rise together with their net worth, which may be used as collateral. This decreases the cost of external borrowing for firms and makes banks speed up lending. On the other hand, when the net worth of companies starts to decrease in the slowdown phase, the cost of external financing rises while the value of collateral that firms can provide declines. Both these factors limit the opportunity of contracting external financing. Thus the financial accelerator acts in a pro-cyclical manner. It is worth underlining that, in this approach, both the demand for credit among firms and the propensity of banks to lend are only constrained by price/reward considerations.

Further insight into the role of credit decisions in economic cycles comes from the Financial Instability Hypothesis by Hyman Minsky [1992]. To model the credit cycles, Minsky distinguishes between different types of borrowers: those that may meet their contractual obligations from their cash flows (hedge borrowers) and those who cannot meet their principal and interest payments (speculative and Ponzi borrowers). The major element driving the credit cycle upwards is that during the period of stability risk aversion decreases. As a result, lenders loosen their credit standards and supervision and regulatory requirements become more relaxed. This leads to excessive lending and a growing number of speculative and Ponzi borrowers. Excessive demand created by credit implies an excessive rise in asset prices. Thus "stability inherently creates instability".

Another hypothesis by Minsky states that the reaction of the authorities to inflation by imposing money constraints puts a stress on speculative borrowers, who are unable to meet their commitments and are consequently forced to sell their assets. This leads to a decline in asset values. Thus a point of flip between self-reinforcing expansion and contraction appears, a Minsky Moment.

This model explains the situation on the American mortgage market in the last decade. The initial factor was a lowering of interest rates by the U.S. Federal Reserve in 2003-2004, a move that enhanced credit availability. This led to booming demand for housing and a rise of housing prices. But an additional factor was securitization, which had far-reaching implications for both an increased availability of credit and lower lending standards.

It should be underlined that, to an extent, the increased opportunities for extending loans created by securitization led to pressure on lenders to increase the amount of credit. When the prime borrower sector was saturated, lenders turned to the subprime sector [Shin, 2009]. Thus profit seeking enabled by the rising leverage reduced the quality of the assets on which the issued securities were based.

The consensus that emerges in corporate finance theory that excessive leverage may be risky throws new light on the theory of pro-cyclicality of credit. It underlines that once the “dangerous” level of leverage of firms is exceeded in some phase of the business cycle, the risk of default rises. However, rising leverage is not a mechanical process but one subject to the decisions of agents (creditors and borrowers), who operate under specific macro- and microeconomic conditions, and take into account available information. Thus, in one country (or even sector) the choice of agents may be for lower or higher leverage, with as a consequence more or less risk in the credit cycle<sup>1</sup>. As underlined by Bernanke et al. [1996], **financially weaker and smaller firms may be constrained to go for higher leverage and thus more exposed to the risk of credit contraction at a time of economic slowdown.**

From the perspective of these theories, it is intriguing that Poland did not substantially suffer from the financial crisis, in spite of its high international integration in trade and its relatively high financial integration, reflected by the fact that Poland’s banking sector is around 70% based on foreign capital. The global financial crisis has obviously impacted the Polish economy, but this was chiefly due to a drop in demand on export markets and subsequently at home, coupled with secondary inter-firm credit defaults, which provoked difficulties for some firms [Raport 2009a, ch. 1 and 3]. Unlike in other post-transition countries, financial integration did not bring about a high reliance on credit among Polish companies. Long- and short-term bank loans taken together constitute less than 20% of total corporate assets on average, a figure similar to that noted in the case of commercial liabilities. This distinguishes Polish firms from their counterparts in more developed countries where firms more intensively rely on external financing. We will argue that the level of leverage chosen by Polish firms was an important reason behind the robustness of the economy as a whole and of the banking sector in particular in the face of the crisis.

One of our goals is then to look more closely at this particular aspect of the financial structure of Polish firms and its role in the economy in recent years. We argue that **the preferences of Polish firms follow the logic of the “pecking order”**. Thus the reduced availability of credit to non-financial corporations at a time of good liquidity in this sector did not play a substantial role in slowing down the Polish economy. Due to their limited leverage, the firms on average

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<sup>1</sup> It should be noted that the level of leverage among firms impacts not only the sustainability of growth, but also sensitivity to monetary policy through credit channels.

did not particularly suffer from more difficult access to credit because internal sources of financing were available and sufficient. There are, of course, sectors that are more sensitive to credit tightening than others – for example residential construction and small companies.

### **Hypotheses on the vulnerability of Eastern European countries to economic and financial crisis**

The 2009 edition of the European Bank for Reconstruction and Development's Transition Report highlighted the differences in output declines in transition countries [EBRD, 2010]. The report focused on explaining the mechanism of the crisis in these countries.

The EBRD argues that the sudden output declines in transition countries in the fourth quarter of 2008 were chiefly due to the crisis in highly developed countries. While the integration of the post-transition countries with the rest of the world boosted their pre-crisis growth, it also created significant vulnerabilities.

The economic integration of post-transition countries, especially those that have joined the European Union, consisted of the following developments:

- rising trade with developed countries; Russia and other CIS countries rich in natural resources developed their exports of commodities,
- financial integration through FDI and an inflow of foreign lending; in some countries, these were accompanied by rising foreign participation in bank ownership,
- migrations of labor and resulting remittances flows.

All three processes were beneficial for the region, contributing to its exceptionally rapid growth from mid-1990 onward. This was particularly the case in the 2005-2007 period when commodity prices were soaring and abundant liquidity on global financial markets prompted companies in the financial sector to search for opportunities to invest. The availability of funds boosted mortgage lending in countries where it was previously almost nonexistent. It also allowed high lending to firms. The fact that a substantial part of borrowing was contracted in foreign currency exposed borrowers to an additional risk. The EBRD suggested that in countries aiming to enter the eurozone quickly, the exchange rate risk was underestimated.

However, economic and financial integration created potential channels for the transmission of the crisis to post-transition countries in the event of a contraction in demand for their exports and labor amid narrowing liquidity.

The fact that the type and speed of growth in post-transition countries in the late 1990s and early 2000s contributed to their vulnerability is widely confirmed in crisis analyses. A 2009 report by the IMF highlights the dependence of this growth on foreign-financed credit, which was often extended in foreign currency, and on foreign capital flows as the principal factors behind the exposure to a sudden stop in funding. An analysis by Gardo and Martin [2010] identifies

a number of vulnerabilities in all or most post-transition countries in their phase of fast growth: a credit boom, often in foreign currency and funded from foreign sources (with rapidly rising credit/deposit ratios), widening current-account deficits, and in some countries also a limited margin of maneuver due to a fixed exchange rate. Gardo and Martin conclude that the global financial crisis did not directly affect countries free from toxic assets. These countries were hardest hit by a slump in exports to the West and felt an indirect effect of the crisis based on their reduced ratings among investors and difficult access to liquidity. This coincided with second-round recession effects and a rise in non-performing loans.

The trade balance position is another important factor that explains why the crisis has had a varying impact on Eastern European countries, as indicated by Becker et al. [2010]. The crucial driver is the growth (but not size) of credit, coupled with the deepening effect of the fixed exchange rate regime, according to Becker et al.

The different analyses of the financial crisis in post-transition countries indicate the same scope of factors, but rank their importance differently. This may be due to the fact that the relevance of these factors to different countries and their order in time were unequal. The credit boom was one of the factors common to all of them, while its size, sources of financing and speed of growth could be different. The EBRD analysis suggests that the bubbles emerging in some post-transition countries implied a tightening of lending standards and monetary policy reactions prior to September 2008. This effect was strengthened by a halt to lending flows from abroad, which was particularly painful for those countries which became dependent on foreign financing. This detrimental effect resulted from the financial crisis, but also from the increased propensity of banks from developed countries (a trend welcomed by their governments) to lend to borrowers at home, and not to emerging-market countries.

The EBRD identified a number of factors responsible for differences in the performance of individual transition economies during the crisis. These factors include the size of pre-crisis growth in these countries and the extent of the lending boom, the degree of dependence on exports as compared to internal demand, and the specialization in commodity exports. Another important factor is the degree of financial integration measured by the size and growth of foreign inflows. Finally, other country- and policy-specific factors contributed to the differences in performance during the crisis. The EBRD found that the high proportion of foreign bank ownership could have mitigated the outflow of foreign funds during the crisis, while their presence could have contributed to the pre-crisis credit booms.

Poland was among the transition countries that were almost completely spared from the crisis shock. In fact, Poland's GDP growth slowed down only in 2009. The economy continued to expand despite a 10% fall in exports and rising unemployment figures as some of the 1.9 million or so Poles working abroad (according to 2006 estimates) decided to return after losing their jobs during the crisis.

One reason why economic growth in Poland is more sustainable than in other countries is that this country of 39 million consumers has greater internal demand and is consequently less reliant on exports. It also seems that Poland shows specific features of financial integration. On the one hand, the EBRD report pointed to the high share of foreign bank ownership in Poland, at around 70%. On the other hand, the report highlighted the growth of private credit from 2005 to 2008 as well as the fact that the proportion of foreign currency lending in Poland was lower than in other post-transition countries. Most importantly, loans to the non-financial sector in 2007 only slightly exceeded deposits gathered by banks, and the growth of cross-border borrowing in 2005-2007 was one of the lowest among post-transition countries. All these features contrasted with those of other countries in the region harder hit by the crisis. **Below we will focus on the underpinnings of this slower growth of loans in Poland in the pre-crisis period.**

### **The evolution of lending in Poland over the last decade**

When analyzing the history of loans granted by Polish banks over the past decade one has to keep in mind that at the start of the decade interest rates were too high to allow extensive borrowing. At the end of 1999 the referential interest rate of the National Bank of Poland stood at 16.5%. It increased to 19% at the end of 2000 and subsequently decreased to 11.5% at the end of 2001, followed by 6.25% at the end of 2002 and 5.25% at the end of 2003. Even taking into account the inflation rate, the real basic interest rate in 2000 was 8%, followed by 5.7% in 2001, which was above the average return on equity (ROE) earned by firms.

**Table 1**  
**Nominal and real rates (end of the year)**

Year	Nominal referential rate	Inflation index (previous year = 100)	Real referential rate	Credit for firms, up to 1 year	Credit for firms, above 5 years
1999	16.5	107.4	8.5		
2000	19.0	110.1	8.1		
2001	11.5	105.5	5.7		
2002	6.75	101.9	4.75		
2003	5.25	100.8	4.4		
2004	6.50	103.5	2.9	8.2	8.5
2005	4.50	102.1	2.4	6.3	6.5
2006	4.00	101.0	3.0	5.9	6.0
2007	5.00	102.5	2.4	6.8	6.3
2008	5.00	104.2	0.8	7.8	7.4
2009	3.50	103.5	0	6.5	5.6
2010	3.50	102.6	0.9	5.9	5.6

Source: [www.nbp.pl](http://www.nbp.pl) and [www.stat.gov.pl](http://www.stat.gov.pl)

Thus the level of interest rates until 2003 did not invite extensive borrowing. Moreover, the country's GDP growth in 2001 and 2002 was unimpressive, at just over 1%, and thus the investment climate was unfavorable.

The growth of bank credit to the non-financial sector is shown in Table 2. The growth of credit in the first half of this decade was driven not by credit to companies – where this growth was modest until 2006, particularly in real terms – but by lending to households, in particular for housing purposes, which boomed in this period.

**Table 2**  
**Annual rates of growth for credit to the non-financial sector (December to December)**

Year	Companies	Households, sole-owner firms, farmers	Households only	
			Total	For housing
2000	110.0	127.4	132.9	163.4
2001	103.2	114.7	114.5	146.9
2002	100.3	107.8	113.6	142.3
2003	102.1	113.9	117.4	147.8
2004	96.3	111.7	114.6	121.2
2005	102.7	124.0	129.4	140.9
2006	114.2	134.4	138.2	154.0
2007	123.4	138.4	141.8	150.3
2008	128.7	144.9	149.3	164.7
2009	96.0	111.9	112.4	111.7
2010	98.0	113.9	114.8	122.8

Source: Należności i zobowiązania banków, [www.nbp.pl](http://www.nbp.pl)

**Lending to companies gained momentum much later than lending to households.** As far as credit for households, in particular housing loans, are concerned, the proportion of foreign-currency loans grew quickly (to 65% at the end of the period). The proportion of foreign-currency loans taken out by companies did not exceed 25%.

Credit for households was initially small, at 22.7% of total lending to the non-financial sector at the end of 1999. Loans for companies grew at a slow rate, but continued to dominate the credit portfolio until 2005.

The credit boom in Poland had two different pillars:

- moderately growing loans to companies, most of them granted in zlotys,
- rapidly growing housing loans to households, most of them denominated in foreign currency.

Notably, only lending to companies ground to a halt in 2009, while loans granted to households only slowed down. This was due to the nature of housing loans and their maturity – in the case of typical loans to finance the construction of an apartment built by a developer the bank disburses the funds in installments over several years, while repayment starts later after a grace period.

The high proportion of slowly growing loans to companies was undeniably a factor that contributed to stabilizing the development of Poland's financial sector. The outcome was relatively moderate growth of credit in Poland, according to the EBRD. Also the proportion of loans to the non-financial sector in relation to GDP is still moderate (48% as of the end of 2010). Both these features made Poland's financial sector more robust in the face of any external shock.

Underlining the importance of the moderate growth of loans to companies as a stabilizing factor, we will reflect on two possible reasons:

- conservatism of firms (preference for low leverage)
- conservatism of banks (reticence to grant loans under liquidity constraints and in the absence of securitization).

Below we will discuss these issues in greater detail.

### Leverage and liquidity of Polish firms

The capital structures of Polish firms, as reported by Poland's Central Statistical Office (GUS) on the basis of company balance sheets, testify to the corporate sector's preference for low leverage.

**Table 3**  
**Leverage ratios of Polish firms (as of Dec. 31)**

	Total	Up to 49 employees	50-249 employees	Over 249 employees
2005				
DEBT/ASSETS	15.17%	18.86%	17.14%	13.29%
LIABILITIES/ASSETS	41.33%	46.37%	44.28%	38.64%
OF THIS: <i>COMMERCIAL LIABILITIES</i>	15.22%	18.68%	17.73%	13.16%
2006				
DEBT/ASSETS	15.44%	19.86%	16.98%	13.56%
LIABILITIES/ASSETS	41.49%	47.25%	43.69%	38.94%
OF THIS: <i>COMMERCIAL LIABILITIES</i>	15.28%	17.62%	17.45%	13.65%
2007				
DEBT/ASSETS	15.38%	20.50%	17.72%	12.89%
LIABILITIES/ASSETS	39.73%	45.43%	41.77%	37.24%
OF THIS: <i>COMMERCIAL LIABILITIES</i>	14.51%	16.27%	15.78%	13.43%
2008				
DEBT/ASSETS	17.57%	21.14%	20.58%	15.38%
LIABILITIES/ASSETS	42.18%	47.76%	45.15%	39.50%
OF THIS: <i>COMMERCIAL LIABILITIES</i>	14.52%	16.83%	16.75%	12.99%



continued Table 3

	Total	Up to 49 employees	50-249 employees	Over 249 employees
2009				
DEBT/ASSETS	16.13%	20.24%	18.72%	13.93%
LIABILITIES/ASSETS	41.02%	32.89%	43.38%	38.05%
OF THIS: <i>COMMERCIAL LIABILITIES</i>	13.97%	16.05%	15.52%	12.76%

Source: Data by Poland's Central Statistical Office (*Bilansowe wyniki finansowe podmiotów gospodarczych* 2005, 2006, 2007, 2008, 2009)

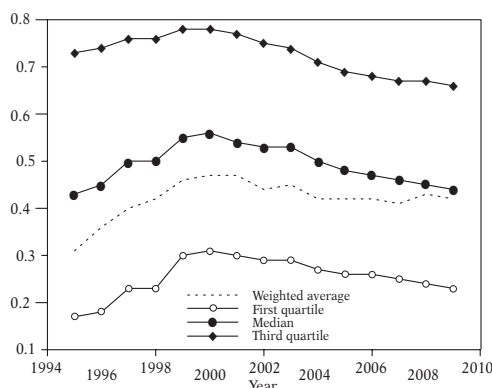
As can be seen from Table 3, Polish firms' own funds constitute almost 60% of their assets. The proportion of credit (both short- and long-term) rose from 15% to around 18% at a time of credit expansion from 2004 to 2008. The proportion of commercial credit is almost the same as that of bank credit. Leverage is apparently higher for smaller firms, but it seems to stem from the scarcity of their own funds, not from their preferences.

This aggregated picture is confirmed by the distribution of leverage for individual firms (see Fig. 1).

The degree of leverage<sup>2</sup> follows a stable path. It increased in the second half of the 1990s, but decreased later. The differentiation (difference between the median and the first and third quartiles) has shrunk slightly over the last 15 years. If we analyze groups of enterprises by size, it is clear that small firms (with fewer than 49 employees) have had the greatest leverage since 2002 and their gap to large firms (with more than 249 employees) is widening.

Figure 1

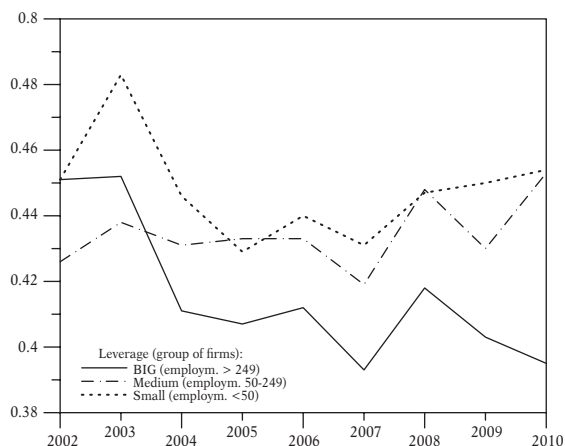
Leverage (long- and short-term liabilities to sum of liabilities and equity) and its distribution over 1995-2009. Firms with leverage greater than 1 are excluded



Source: own calculations based on GUS data

<sup>2</sup> In terms of total liabilities/assets (according to the F-02 GUS financial statement).

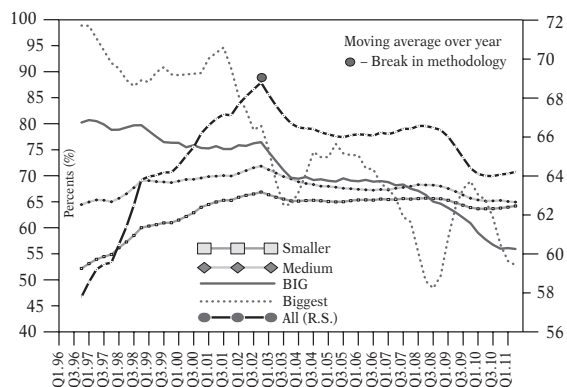
**Figure 2**  
**Leverage (long- and short-term liabilities to sum of liabilities and equity)**  
**and the size of enterprises – weighted average**



Source: own calculations based on GUS data

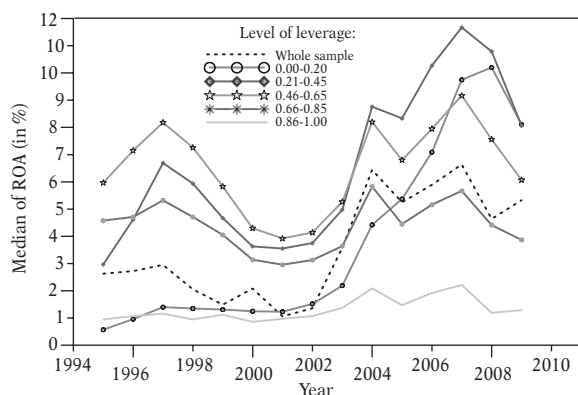
Further insight into the problem is offered by the comparison of the proportion of companies with outstanding debt (credit and loans) in different groups of enterprises classified according to the level of employment. As can be seen, the proportion of indebted companies was the highest in 2002 and then kept decreasing. It should be emphasized that this proportion is substantially lower for large firms compared with smaller ones (see Fig. 3). On the other hand, the propensity of smaller firms to take out loans has been relatively stable since 2002.

**Figure 3**  
**Percentage of firms with positive outstanding debt in the total population of medium-sized and large enterprises. Classification according to employment ("smaller" -enterprises with 50 to 60 workers; "bigger" -enterprises with 3,000 and more workers). Up to 2003 – credit and loans, from 2003 – long- and short-term credit**



Source: own calculations based on GUS data

**Figure 4**  
**ROA and leverage – medians in groups of leverage**



Source: own calculations based on GUS data

Roughly a third of the medium-sized and large enterprises in Poland have no outstanding debt in this sense.

It is interesting to compare these findings with the experience of some post-socialist countries. However, such a comparison is restricted by the availability of statistical data. Practically speaking, there is no widely accessible information on topics we are interested in. In such a situation, we have to use pragmatic approaches based on available samples – of course at the expense of lower quality and representativeness of such a comparison. Some results based on Coricelli [2010] are shown in Table 4. These statistics show that more than 25% of firms in Poland were zero-debt. This ranks Poland second in the EU after Romania in this area. As a result, the total-debt-to-total-assets ratio (TDTA) for all Polish enterprises in this sample was relatively low, at 10%. If we turn to more contemporary and aggregated data it is clear that between 2000 and 2011 the ratio of non-financial enterprises' debt to Poland's GDP ranged from 30% to 41% and was significantly lower than in Latvia, Slovenia, Estonia, Hungary or Bulgaria.

**Table 4**  
**Zero-debt firms and leverage – total liabilities to total assets (TLTA) and total debt to total assets (TDTA) – in some post-socialist countries, 2001-2005**

Country	Enterprises with zero debt (%)	TLTA		TDTA	
		All	Non-zero debt firms	All	Non-zero debt firms
Bulgaria	18.2	0.59	0.62	0.18	0.24
Croatia	7.3	0.39	0.37	0.06	0.13
Czech Republic	12.6	0.52	0.58	0.19	0.23
Hungary	16.4	0.40	0.43	0.09	0.13
Latvia	10.8	0.49	0.55	0.18	0.22

continued Table 4

Country	Enterprises with zero debt (%)	TLTA		TDTA	
		All	Non-zero debt firms	All	Non-zero debt firms
Poland	25.3	0.53	0.56	0.10	0.16
Romania	78.4	0.45	0.47	0.02	0.11
Russia	11.6	0.42	0.69	0.13	0.24
Serbia	13.7	0.37	0.39	0.12	0.14
Slovakia	6.9	0.60	0.59	0.12	0.13
Slovenia	0.9	0.34	0.40	0.07	0.07
Ukraine	17.0	0.42	0.45	0.13	0.15
All	21.6	0.49	0.52	0.14	0.18

Source: [Coricelli, 2010]

To sum up, one thing is evident: in Poland firms generally use a relatively low level of leverage and a large number of enterprises do without any banking credit or loans. If one agrees that an excessive leverage is an important factor that exposes the economy to financial shocks, this means that in Poland non-financial sector enterprises could be “naturally” immunized against such turbulence.

Such a conclusion is reasonable and logical but we have to realize that it is only true under specific conditions. One condition is a lack of such credit constraints imposed on enterprises that result in low (lower) “forced” leverage ratios while masking the real exposition of the sector to shocks in the availability of funds. Namely, we have to check if demand for credit among Polish enterprises is not suppressed by various forms of rationing and if the low leverage ratios or even reluctance to credit among a relatively large group of companies result from autonomous business decisions. If the opposite were true, the low leverages would have to be interpreted as a sign of financial system underdevelopment, a lack of external funds or another systemic weakness.

If we try to explain the objective behavior of Polish firms in terms of leverage, capital structure theories seem to be a natural platform for such considerations. Unfortunately, there is no unique and coherent theory in this field [Harris and Raviv, 1991], and taking into account different assumptions and arguments one may arrive at divergent conclusions. Despite this theoretical ambiguity, it is reasonable to outline the two main classic approaches to this problem.

According to the initial version of the basic capital structure theory by Modigliani and Miller (M-M), if one does not take into account taxes, the value of the firm does not depend on its indebtedness [Modigliani and Miller, 1958]. This finding is based on a number of unrealistic assumptions, for example that of equal access to credit (extended under the same terms: interest rate, collateral, etc.) for companies and individual investors and negligible costs of bankruptcy

thanks to which investors may execute arbitrage<sup>3</sup>. A modified version of this theory – Modigliani and Miller [1963], Miller [1991] – applies to a situation in which corporate income tax is taken into account. Under such circumstances, the value of an indebted firm is higher than that of a non-indebted business by the present value of the stream of tax economies. In light of this approach, profit-making companies should seek the maximum possible level of indebtedness. However, according to OECD data quoted by Ross, Westerfield and Jaffe [2005, Fig. 16.6, p. 576], the ratio of financial debt to the total value of the firm is 48% in the United States, 49% in Germany, 45% in Canada, 58% in France, 59% in Italy, and 72%, the highest figure, in Japan.

Then, it is obvious that such a theory should be modified. As underlined by Modigliani and Miller, indebtedness may be a source of risk. The risk is amplified by the fact that debt is usually contracted for a long period of time and the firm can have a problem complying with the credit contract in the event of a downturn in the economy. **Thus especially firms in sectors with unstable returns and those subject to a high operating risk should avoid a high debt ratio.**

Possible bankruptcy costs may partly offset the tax shield advantage [Altman, 1984]. Besides the obvious direct costs of legal and administrative procedures, different indirect costs and lost opportunities may heavily hurt a firm in financial distress. These stem from the need to make costly adjustments in contracts as well as missed sales and investment opportunities. It is also true that the managers of firms in financial distress may be prompted to make irrational decisions, such as risky investments or, just the opposite, refrain from potentially profitable activities for fear of losing money. The creditor, aware of such potential opportunism, may be tempted to include various restrictions in the credit contract to reduce his risk (collateral or different operating restrictions such as refusal to grant more loans), which may greatly reduce the autonomy of the firm.

Moreover, even if the situation is relatively stable, managers are usually risk averse for fear of losing their job and reputation in case their firm goes bankrupt. This explains why they prefer less risky (and less profitable) investments and tend to avoid excessive financial leverage. Encouraging them to make moves that better reward the owners (and, in some situations, better protect the lenders) implies stricter control and in general higher agency costs [Jensen and Meckling, 1976]. Moreover, the agency problem between the creditor and the borrower in the presence of an information asymmetry implies monitoring costs that add to the overall cost of external financing [Bernanke et al., 1996].

As indebtedness generates both advantages and disadvantages, a hypothesis that there is a static optimum of indebtedness has been formulated [Myers, 1984]. Besides potential bankruptcy costs, which decrease the advantage of debt (tax shield), the influence of high debt on reducing the possibility of

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<sup>3</sup> This also assumes perfect information on the market, absence of agency costs, homogenous assessment of firms by investors, perpetual cash flows, and company debt.

growth has been taken into account to determine the level of this optimum together with features typical of a particular firm: degree of operating risk (high risk decreases the proportion of optimal debt) and the proportion of intangible assets (increasing sensitivity to the risk of a reduced value in the event of bankruptcy).

Despite differences between representatives of this stream of capital structure theories, one thing is common for them – for each firm there is an optimal or targeted value of financial leverage. However, the risk and reward optimization approach may be irrelevant due to other considerations. In the context of developed financial markets, the choice of the level of leverage is subject to an information asymmetry and strategic considerations. It may be assumed, under the approach explained above, that financial leverage should bring about substantial benefits for the best performing firms (due to a positive difference between the return on capital employed and the fixed cost of debt). On the other hand, a weaker performing firm has lower benefits so the tax shield may not be fully exploited and the outcome of leverage is smaller as well. High and growing indebtedness should thus be perceived as a positive signal by potential investors and lead to an increase in the prices of shares. Nevertheless, this is precisely the reason for possible unfair behavior on the part of some managers tending to manipulate signals sent to the market.

The relationship between firm managers and potential investors (buyers of shares) is subject to a substantial information asymmetry. While managers are fully knowledgeable on the strengths and weaknesses of their firms, the investors must rely on fragmentary information and on their subjective interpretation of market signals [Bebczuk, 2003]. The managers may thus be prompted to adopt a strategic behavior model. For example, the investors may suspect that companies issue shares only when these are overvalued. Such a policy benefits the firm but is detrimental to investors. If such behavior is widespread and dominating investors should treat the issue of new shares as a sign that these shares are overvalued and consequently refrain from purchasing them until their price drops. If this kind of mutual game prevails on the market, it would be in the interest of the firm to issue bonds with a known price instead of shares.

But even when a firm with a good standing wishes to finance its investment with debt, it may be confronted with the so-called negative selection phenomenon. Namely the firm may issue debt to signal that it has a good standing while this may not be true. As the lenders are unable to distinguish *ex ante* between good and poor borrowers, they quote the same (high) price on debt. In such a situation a risk-oriented firm would be more likely to decide to get indebted than one expecting stable future returns (though not matching the required interest rate including a high risk premium).

The level of leverage and its outcomes in post-transition countries have been recently studied by Coricelli et al. [2010]. The researchers studied the actual and optimum leverage in these countries<sup>4</sup>. At the level of firms, they

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<sup>4</sup> However, the analysis does not cover the crisis period.

found that there is a big proportion of firms without any debt and, on the other hand, a large percentage of firms with excessive debt. The likelihood of excessive leverage was found to be closely linked to low bank efficiency and market capitalization in a country.

Moreover, analyzing firm-level data, Coricelli *et al.* found that only moderate leverage is beneficial for productivity growth, while **a leverage exceeding a certain threshold is likely to bring about financial stress and bankruptcy**. They put this upper threshold for debt to assets at around 40%<sup>5</sup>.

This behavioral framework is at the source of the second main stream of capital structure theories, namely those of the so-called “pecking order” [Myers and Majluf, 1984]. The recommendations of this theory with respect to financing the firm are the following:

- The firm should primarily use non-distributed profits, while avoiding both shares and debt issuance.
- If non-distributed profits are exploited, the least risky sources of capital should be made use of first (thus debt before shares).
- Less well performing firms, especially those that have scarce internal sources (non-distributed profits), may be forced to choose debt in the first place.

This conclusion goes against the recommendation coming from the tax shield assumption (modified, but present in the “optimum leverage” approach), according to which profitable enterprises should be the most indebted to exploit tax economies. According to the “pecking order” theory, a firm making a good return should refrain from both incurring debt and issuing shares. Under these theories, there is no such thing as optimal leverage ratios.

The above clearly shows that, for the assessment of the objectiveness of leverage chosen by Polish firms, it is important which pattern of capital structure policy they follow. Especially if we prove that the natural consequence of the “pecking order” is that, in the presence of high liquidity, it is impossible for firms to be in an involuntary financial position. In such a situation low leverage means that the firm is resistant to financial shocks rather than exposed to a lack of external funds. Furthermore, there is a belief that lower leverage offers additional opportunities to managers making investment decisions (free cash-flow story – [Zwiebel, 1996]). If so lower leverage leads not only to lower probability of bankruptcy but also greater flexibility of the enterprise due to the effects of the investment. **Below we will show that the level of leverage of Polish firms is low and differentiated, which clearly indicates that they tend to adhere to “pecking order” considerations rather than strive to optimize the tradeoff between the risks and the rewards.**

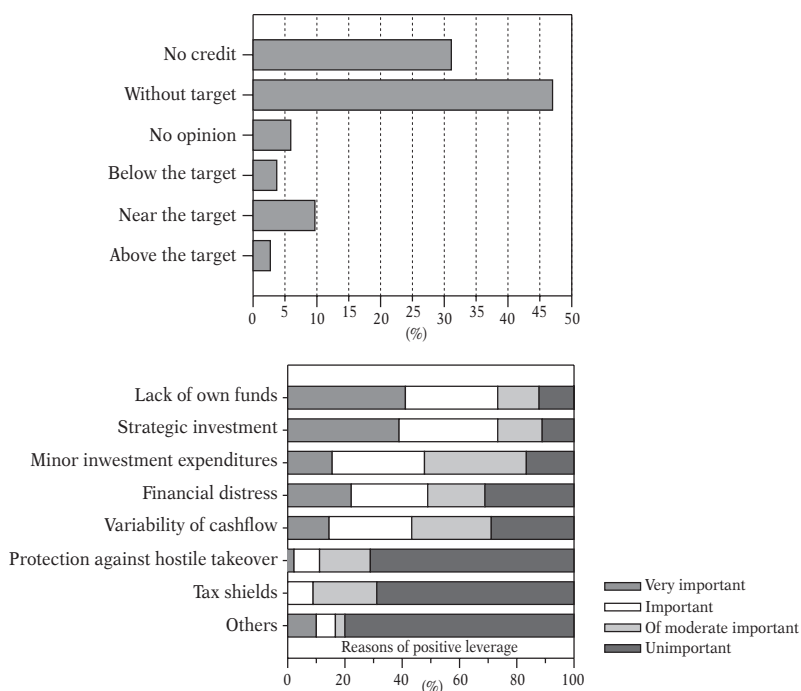
There are many analytical frameworks for checking the pecking order hypothesis against alternatives [cf. Shyam-Sunder, Myers, 1999]. There is criticism about approaches based on financial data [Welch, 2010]. In the case of newly established market economies such as Poland, these doubts could be

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<sup>5</sup> As a matter of fact, the same threshold was obtained from the model for debt to assets and for liabilities to assets, thus making the results less reliable.

magnified by the fact that the significance of capital markets in these countries is still limited and in the case of many firms we have no hard financial data or existing data are distorted. This explains why we adopt a different strategy here based on qualitative data from surveyed companies. We use data collected by Poland's central bank, the National Bank of Poland, during its yearly and quarterly monitoring of non-financial companies. The survey is conducted on a sample of around 1,200 large, medium-sized and small firms representing different sectors of the economy.

**Figure 5**  
**Reasons for positive leverage (bottom panel) and opinions on its optimality (top panel)**  
**among Polish firms**



Source: *Informacja o kondycji sektora przedsiębiorstw niefinansowych ze szczególnym uwzględnieniem stanu koniunktury w II kw. 2011 oraz prognoz koniunktury na III kw. 2011*, National Bank of Poland

The main findings are depicted in Fig. 5. The first conclusion (top panel) is that only 22% of the surveyed enterprises defined a target level of financial leverage. Only 10% of respondents reached that target. The data confirmed that tradeoff mechanisms are not dominant among Polish firms when it comes to capital structure.

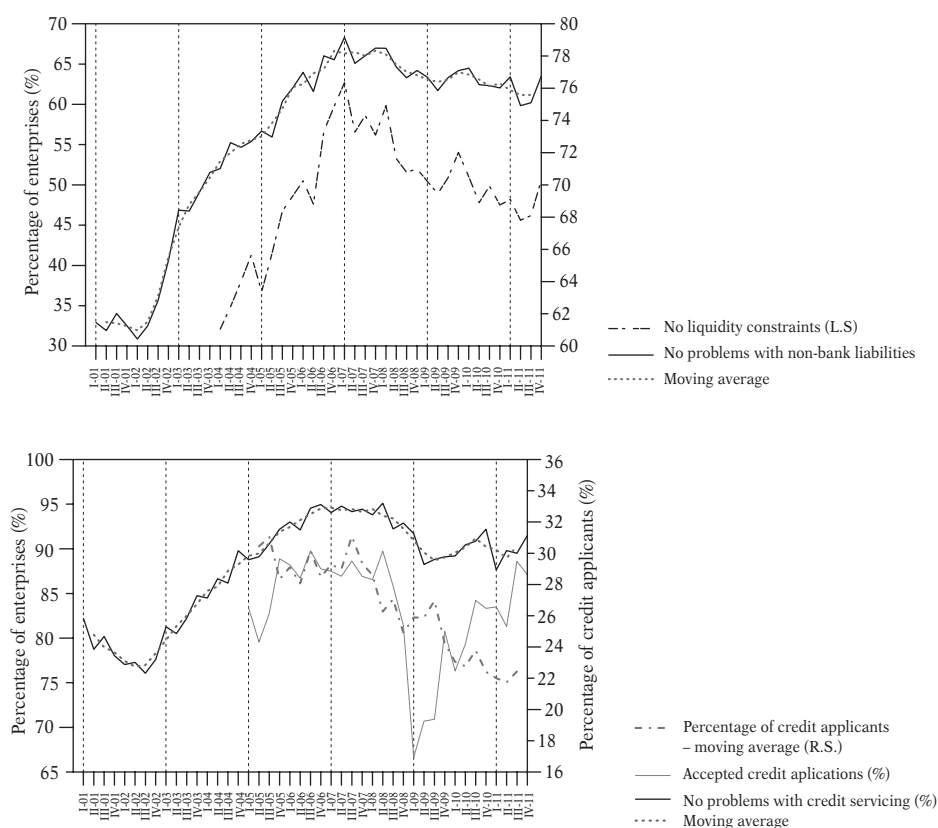
This becomes more obvious if we analyze the reasons for using leverage in these firms (bottom panel). First of all, it is striking that the tax shield is a rather unimportant motive for external financing. This is in stark contrast to



the findings of Myers and Majluf. Another conclusion is that the main purpose of external financing is to cover shortages of one's own funds or supplement them in the case of intensive investment processes.

**Figure 6**

**Firms with no liquidity constraints and no problems with servicing non-bank liabilities (top panel).  
The level of acceptance of credit applications and quality of banking-debt servicing (bottom panel)**

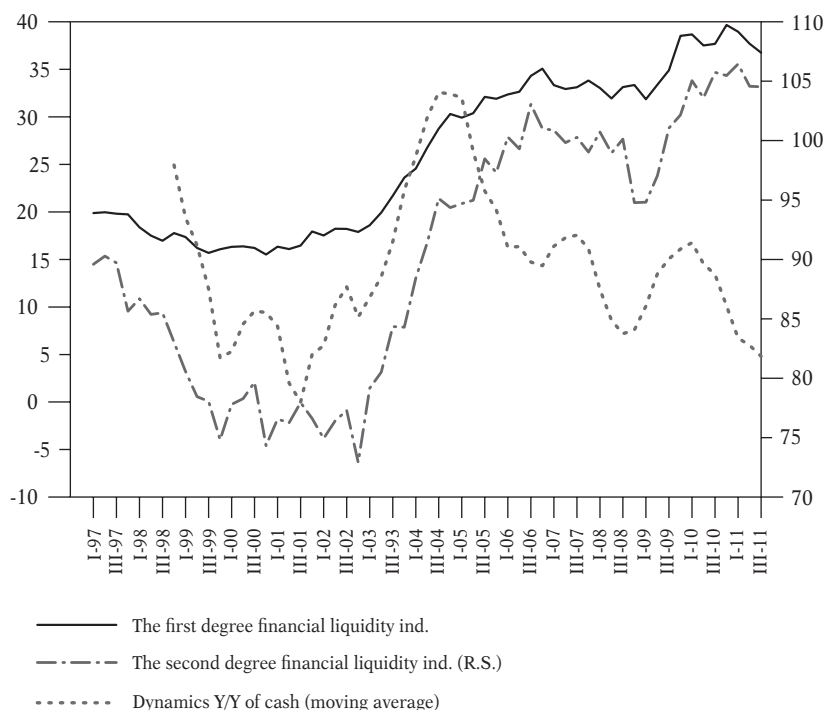


Source: own computations based on National Bank Poland data

The NBP surveys also confirm that Polish firms ensure good service of their liabilities (bank and non-bank – see Fig. 6). Now, after the drop related to the financial crisis, the ratio of accepted credit applications is high again. The refusal rate is about 10%. What is impressive is a quick return of this acceptance ratio to the pre-crisis level after the trough in 2009. All these facts testify to a strong financial position of Polish firms in the two last years and to a relatively small deterioration in debt servicing during the crisis. One could point to a negative trend in the ratio of companies with no liquidity constraints since 2007, but this criterion is so demanding that it is reasonable to expect such a trend after one of the best financial years for Polish companies.

We have to emphasize that this picture is confirmed by financial data from the cost-benefits statements of non-financial enterprises (see Fig. 7). As we can see, the liquidity ratios have stayed at their peak levels since the mid-1990s.

**Figure 7**  
Financial liquidity ratios and yearly dynamics of cash in Polish enterprises



Source: own calculations based on GUS data

In the context of liquidity, it should be added that it was growing revenues that boosted investment activity, according to macroeconomic data and company balance sheets analyzed by the National Bank of Poland [Ocena, 2009, 2010], supplemented by the replies of firms to National Bank of Poland questionnaires [Informacja, 2009, 2010]. Gross spending on fixed assets grew 14.9% in 2006 and 17.6% in 2007. However, firms clearly adapted their development plans to their internal financial resources. Due to the strong growth of revenues (mostly due to booming exports), companies accumulated substantial profits. The average value of the first-degree liquidity ratio was 30%, above the standard requirement, testifying to conservatism in financial management. Even when credit became more accessible as a result of lower interest rates, the number of credit requests did not rise substantially. Only 30% of firms applied for credit each quarter until the end of 2008. However, the falling credit concentration shows that credit is increasingly accessible to less profitable firms as well.

The percentage of credit refusals was also stable at between 10% and 13%, proving that, contrary to declarations, the banks did not substantially relax their lending policies<sup>6</sup>.

While analyzing company balance sheets, the National Bank of Poland has found that firms with poorer financial results tend to be more indebted. This further proves that Polish firms' reliance on their own resources is a conscious choice rather than merely an outcome of credit rationing. While the general tendency of ROA in time depended on the macroeconomic cycle, there is a substantial difference between the least indebted firms (with the highest ROA) and those most indebted (with the lowest ROA). This also addressed the situation of SMEs for which leverage was higher while the accessibility of credit was lower than for other companies.

The low accessibility of credit for SMEs was described by Akiba and Lissowska [2006a, 2006b] and further highlighted in recent research by the Polish Ministry of the Economy [Trendy, 2010], according to which small (and especially the smallest) firms were much more frequently refused credit.

We can go even further. According to Nikolas [2002], profitability is negatively correlated with leverage. For Poland, this is confirmed by Fig. 4, which illustrates the level of ROA for groups of companies with different leverage. The figure shows that firms choosing low leverage when profitable are not "forced" to adopt such a strategy because they lack their own funds (due to unsatisfactory profitability). This is yet another argument that most Polish enterprises have had a wide margin of financial decisions during the last five to seven years.

### **Policy of Polish banks before and during the economic slowdown**

This section aims to answer the question of whether or not Polish banks consciously limited the credit supply in the pre-crisis phase and whether they were constrained by demand for credit.

To understand the situation and policy of Polish banks, it is helpful to see how their liabilities and dues from the non-financial sector have evolved over the last decade.

Table 5 and Fig. 8 show that until mid-2007 the Polish banking sector as a whole had excessive liquidity. While this was not the case for all the banks, those without sufficient deposits could draw liquidity from the interbank market.

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<sup>6</sup> It was more the case of mortgage lending where banks accepted high loan-to-value ratios (while real estate was overvalued) and low requirements as to income. The banks were also massively providing cheaper, but more risky loans denominated in foreign currency [Główka, 2010].

**Table 5**  
**Dues and liabilities of Poland's banking sector (millions of Polish zlotys)**

	Dues from resident non-financial sector	Index of growth	Liabilities to resident non-financial sector	Index of growth	Liquidity gap*	Liabilities to foreign financial sector
Dec 00	189 473,5		250 785,8		-61 312,3	19 147,1
Dec 01	203 076,1	1,072	284 058,2	1,133	-80 982,1	19 262,0
Dec 02	209 752,8	1,033	277 430,9	0,977	-67 678,1	21 238,2
Dec 03	224 438,4	1,070	288 030,7	1,038	-63 592,3	33 209,8
Dec 04	232 626,4	1,036	302 183,8	1,049	-69 557,4	34 167,4
Dec 05	261 507,3	1,124	328 871,6	1,088	-67 364,3	35 364,9
Dec 06	325 182,7	1,243	374 136,8	1,138	-48 954,1	49 877,2
Dec 07	429 962,3	1,322	416 937,3	1,114	13 025,0	81 926,0
Dec 08	595 273,4	1,384	493 394,2	1,183	101 879,2	158 865,6
Dec 09	631 889,2	1,062	557 560,5	1,130	74 328,8	156 193,1
Dec 10	687 830,5	1,088	610 876,4	1,095	76 954,1	178 362,4

\* defined as the difference between dues and liabilities from/to resident non-financial sector

Source: *Należności i zobowiązania banków* at: [http://www.nbp.pl/home.aspx?f=/statystyka/pieniezna\\_i\\_bankowa/nal\\_zobow.html](http://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/nal_zobow.html)

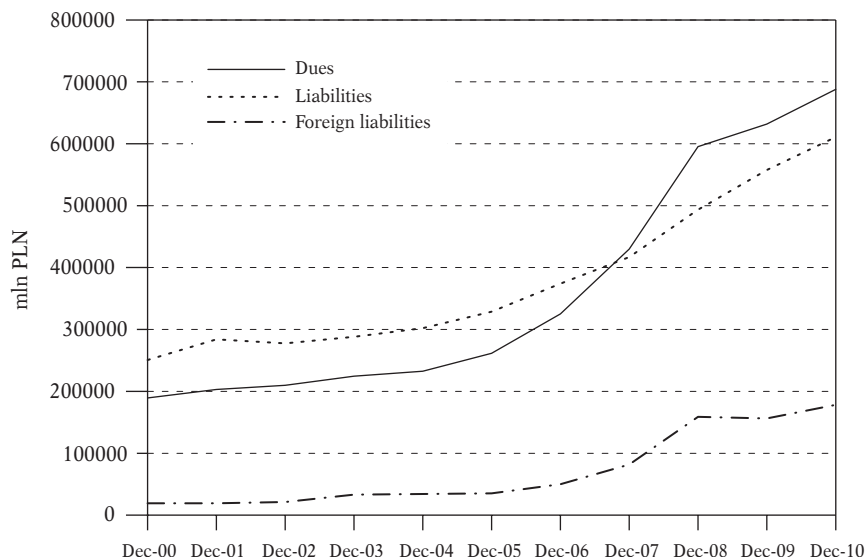
The abundance of liquidity made banks apply a soft crediting policy. In particular, banks were eagerly granting mortgage loans (as illustrated by Table 2). This is not surprising considering the housing gap, estimated at more than 1 million dwellings (the difference between the number of households and the number of housing units). But even with soft creditworthiness criteria, mortgage loans could not be extended to more than 3% of the population [Główka, 2010, p. 5]. Also, the majority of conservative households in Poland were hesitant to take out mortgage loans with a long repayment period. As said above, companies tended to adopt a conservative approach to the choice of leverage. Credit to firms grew the most when faster economic growth opened new investment opportunities and not when the interest rates decreased. The credit policy of banks had a limited impact on the demand for credit among relatively conservative firms.

However, from 2005 onward the liabilities of the banks grew much faster than deposits. In particular, the increased popularity of investment funds soaked up some of the population's savings. In mid-2007 the Polish banking sector, after a phase of credit growth, faced a lack of liquidity. It should be underlined that prior to that the reliance of Polish banks on foreign loans was low. The financial conservatism of firms, which delayed the time when interbank borrowing became insufficient, was one of the reasons why the Polish banking sector remained almost independent of external financing for a long time. It should also be underlined that securitization, while theoretically possible in Poland, never developed to an extent sufficient for it to become a source of

financing for banks. When the demand for extra liquidity emerged, there was not enough time to develop securitization.

**Figure 8**

**Liabilities and dues from non-financial sector and liabilities to foreign financial sector**



Source: Table 5

The pressure stemming from insufficient liquidity brought about a veritable deposit war between banks in 2008 and 2009. All the banks, even those traditionally focusing on serving companies and financed from the interbank market, offered high interests on deposits, even at the expense of endangering their future profits. Also, as shown in the table and the graph above, liabilities to the foreign financial sector increased. According to the National Bank of Poland, in March 2009, the majority of Polish banks (accounting for 64.5% of total banking-sector assets) relied mostly on deposits, while a minority (holding a combined 9.7% of total assets) relied on foreign loans and others applied a mixed strategy [Raport, 2009a, p. 60].

However, it was already a period of rising costs of foreign borrowing and Polish banks were rather reticent to use this source. As Polish banks are 70% owned by foreign capital, in late 2008 there were even fears that their parent organizations would withdraw funds to use them at home [Przegląd, 2008]. Eventually this risk did not materialize. Just the reverse, Polish subsidiaries were funded by their parent institutions [Raport, 2009a]. But the perception of the situation was unfavorable for excessive borrowing abroad and lending at home.

In 2008, there were also other factors that had an impact on bank lending policies. The housing cycle, after a period of rising demand and booming prices, came to a stage of high supply, which made prices fall. This halted speculative

demand and delayed buying decisions among those waiting for the prices to fall even more dramatically. A number of developers found themselves in trouble and were hard pressed to sell finished apartments. Meanwhile, the banking supervision authorities issued recommendations for more cautious lending to households<sup>7</sup>.

As said before, exporters faced problems stemming from a strong zloty and falling demand. For these reasons the value of non-performing loans increased although it continued to fall in relative terms, in proportion to the overall volume of loans, which kept rising. Moreover, new capital adequacy regulations took effect at the beginning of 2008, making lending in foreign currency and credit with a high loan-to-value (LTV) ratio less comfortable.

All these factors made Polish banks adopt a more conservative approach and tighten their lending policies. In 2008, the ratio of credit request refusals among companies grew (as shown in the previous section, Figure 6, right panel) and interest margins on loans increased.

However, firms displayed a certain level of insensitivity to the changes in the stringency of bank lending policies. The number of loan applications began to fall in early 2008 when lending standards were still relatively soft. Demand for credit did not pick up in 2010 even though banks softened their lending standards. These stayed at a low level, reflecting the still relatively weak propensity to invest and the corporate sector's reliance on its own funds.

The question is to what extent tighter bank lending policies contributed to the slowdown in the Polish economy in 2009. The generally accepted opinion is that the principal reason behind the slowdown was insufficient demand for exports [Raport, 2009a]. This view is confirmed by the fact that the slowdown in exports started in early 2008 when banks were still pursuing soft lending policies. Also non-performing loans were concentrated in specific sectors (exporters, developers, construction companies) without affecting the economy as a whole, unlike in the case of a general halt of lending under high credit reliance. Although small companies more heavily dependent on credit were more frequently defaulting [Raport, 2009b], the proportion of non-performing loans increased only moderately. In the case of corporate borrowers, the increase was from 6.9% at the end of 2007 to 10.8% in the third quarter of 2009, and for households the rise was from 4.1% to 4.9% over the same period. Thus, the low leverage of the majority of firms contributed to the robust performance of the Polish economy in a time of crisis.

## Conclusions

This paper clearly shows that the preference for low leverage was a conscious choice for Polish firms. Our research refutes the relevance of the tax shield and optimum leverage considerations – both in the case of a decision to apply for

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<sup>7</sup> In 2006, the so-called Recommendation S imposed additional requirements on those lending to households in foreign currency. In turn, Recommendation T, introduced in 2010, limited the maximum debt ratio for borrowing households.

a loan and when choosing the leverage level. The paper also shows that less well performing and smaller firms tend to be more indebted, mainly because they do not have enough funds for investment. Firms with sufficient internal financial resources were reticent to take out loans and preferred to adapt their investment plans to their own liquidity rather than the availability of bank credit. This clearly proves the relevance of the “pecking” order hypothesis.

The firms’ preference for low leverage could have positively contributed to the relative robustness of the Polish economy during the crisis. First, it delayed the moment when deposits started to be insufficient to cover loans. This did not happen until the eve of the financial crisis when banks became cautious not to excessively borrow funds abroad to fill their liquidity gaps. Moreover, the low leverage ratio reduced the adverse effects of tighter lending policies for companies. Practically speaking, only small firms with the strongest reliance on credit were affected. This relative insensitivity of firms – in particular in their investment decisions – to the availability of credit did not adversely affect economic recovery because there was a large margin of spare capacity.

Of course, there are also other factors that make the Polish economy resilient to such negative shocks [cf. Cuaresma, Feldkircher, 2012], but their relative importance is an open question.

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## **NISKA ZALEŻNOŚĆ OD KREDYTU W POLSKICH FIRMACH – BŁOGOSŁAWIEŃSTWO W OKRESIE KRYZYSU FINANSOWEGO?**

### **Streszczenie**

Celem artykułu jest wyjaśnienie nieoczekiwanej odporności gospodarki polskiej na skutki globalnego kryzysu finansowego, mimo jej silnej integracji z gospodarkami innych krajów. Stawiamy tezę, że jedną z ważnych przyczyn tej odporności była niska zależność polskich firm od kredytu (niskie wykorzystywanie dźwigni finansowej).

Dla wykazania tej tezy posługujemy się zarówno danymi makroekonomicznymi (stan i zmiany udziału kredytu i zobowiązań w bilansach firm o różnej wielkości), jak i danymi pochodzącymi z badań ankietowych przeprowadzanych corocznie na reprezentatywnej próbie firm przez GUS i NBP.

Z badania wynika, że duża część firm w ogóle nie posługuje się kredytem. Nie są to jednak firmy o złej kondycji, którym odmówiono kredytu. Biorąc pod uwagę również dobrą kondycję finansową przedsiębiorstw w Polsce w ostatnich kilku latach należy zatem wnioskować, że mały zakres posługiwania się dźwignią finansową był świadomym wyborem przedsiębiorstw o lepszej kondycji finansowej które, zgodnie z teorią „pecking order”, posługiwały się w pierwszej kolejności środkami własnymi. Taka struktura finansowania powodowała ich relatywną odporność na okresowe zacieśnienie polityki kredytowej przez banki i, w konsekwencji, słabszą reakcję na warunki kryzysu finansowego.

**Słowa kluczowe:** gospodarki post-transformacyjne, kryzys finansowy, dźwignia

**Kody JEL:** G01, G32, P34

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