

THE PROBLEM OF CHOICE OF LEVERAGE: EXAMPLE OF POLISH FIRMS

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Abstract

The purpose of this paper is to demonstrate the tendency to low leverage in Polish companies. We will indicate that it was a conscious choice by companies and that it was at the source of the robustness of the Polish economy during the crisis. This demonstration is based on the establishment of “stylized facts” from microeconomic data on companies, coming from their financial statements and from surveys carried out by the National Bank of Poland. The data covers the level of leverage, its frequency and duration, the declarations of firms themselves as to their preferred sources of funding and the relation between leverage and financial constraints and profitability.

This approach is limited by the scope of available data, and in particular by the period when it was gathered (16 years), by the inability to capture some elements of the history of each company (eg. whether they suspended activity or not) and by the unavoidable subjectivity of the replies to the survey. Further application of more formalized methods is possible, but the correctness of results would depend on clearing of data.

We confirmed that low leverage seemed to be the conscious choice of the Polish firms who could afford it, thus a preferred option according to the “pecking order” were own funds. Financially weaker or smaller companies could be constrained to rely on debt. The slow growth of loans to companies contributed to delay until late 2007 the moment when Polish banks exhausted internal deposits and were obliged to turn to external funding.

The paper reveals a new and until now unexplored layer of factors underpinning the robustness of national economies in the global crisis, namely company decisions.

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

1. INTRODUCTION

The global crisis which hit the world a couple of years ago is called a financial crisis because processes in the financial sphere played the crucial role in the run up to this crisis and in its development. The state and behavior of the financial sector made for the differences between countries. As to post-transition countries, as the European Bank for Reconstruction and Development underlines, their integration with the rest of the world played a major role in their exposure to the crisis, even if they neither issued nor kept toxic assets (Transition, 2009). Financial integration was one of the underpinnings of weaker or stronger exposure to crisis.

Poland is recognized as an outstanding case among post transition countries which in fact did not undergo recession during the global crisis. It is underlined by EBRD. The reports of the National Bank of Poland prove the sufficient stability of the banking sector and the relative robustness of Polish companies, except exporters and SMEs (Raport 2009a, Raport 2009b).

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However, among the different analyses and explanations of the crisis little is said about the role of behavior of companies and of their choices in the matter of leverage. In macroeconomic analyses they are often treated as automats reacting to the cost of capital and possible gains. At the microeconomic level the hypotheses are more sophisticated, claiming that companies either choose the financially determined optimum level of leverage, or they opt for the “pecking order” of funds, privileging their own sources, if available. Links between both these levels of analysis are lacking.

In the present paper we wish to explore the puzzle of Polish robustness in face of the crisis. We claim that the majority of Polish companies were reticent to contract debt and that their choices constituted the major reason of the robustness of the Polish economy in the crisis. This approach is novel, because low leverage is in principle not perceived as a positive feature of company strategy or of the structure of the economy as a whole.

The novelty of this research consists also in its methodology. Namely, it is based on microeconomic data (for companies) both from their financial reports gathered by the Central Statistical Office of Poland, and from the surveys carried out yearly with companies for the last 16 years by the National Bank of Poland.

2. THE ROLE OF CREDIT AND LEVERAGE IN THE RUN UP TO THE CRISIS

In the interpretations of the recent financial crisis the role of leverage and excessive credit taking has been underlined. According to the financial accelerator model of Bernanke et al.(1998) 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 these firms and makes banks speed up lending. When risk rises and the net worth of companies starts to decrease in the slowdown phase, both the cost of external finance rises and the value of collateral the firms could provide declines. Both factors limit the opportunity of contracting external finance. Thus the financial accelerator acts in a pro-cyclical manner. In this approach both demand for credit from companies and the propensity of banks to lend somehow follow mechanically the changes of price/reward.

Another insight into the role of credit decisions in economic cycles provides the Financial Instability Hypothesis of 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 that cannot meet either principal or interest payments (speculative and Ponzi borrowers). The major element driving the credit cycle upwards is that during periods of stability risk aversion lowers, both in terms of loosening credit standards by lenders, and of loosening the supervision and regulation requirements to the banks. This leads to excessive lending, and to a greater degree to speculative and Ponzi borrowers. Excessive demand created by credit implies an excessive rise in asset prices. Thus “stability inherently creates instability”, claims the first Minsky hypothesis.

Minsky’s second hypothesis states that the reaction of authorities to inflation by imposing money constraints puts a stress on speculative borrowers who find themselves unable to meet their commitments and forces them to sell assets. This leads to a collapse in asset values. Thus a point of flip between self-reinforcing expansion and contraction appears, a Minsky Moment.

This model explains well the situation on the American mortgage market in the first decade of the 21st century. The initial element was that of lowering interest rates by the FED in 2003-2004, implying credit availability and lowering credit standards. This led to a boost in demand for housing and housing prices. But an additional element was that of securitization, having decisive consequences for both increasing the availability of credit and lowering lending standards.

It should be underlined, that in some way, increasing the possibilities to extend loans thanks to securitization was at the origin of a supply pressure on crediting. When the prime borrowers sector became saturated, lenders turned to the subprime sector (Shin, 2009). Thus profit seeking enabled by rising leverage caused deterioration in the quality of assets which were the basis of securitization.

The hypotheses on the active role of credit in the business cycle (and in particular the risk implied by excessive borrowing) may be compared with what microeconomic theory of corporate finance says about the choice of leverage by firms. The fact that the latter approach is static and the former dynamic does not make comparison easy. Contrary to macroeconomic theories, the rise of leverage is not perceived in corporate finance theories as a mechanical process, but rather as subject to (often strategic) decisions of agents. Moreover, corporate finance theory does not look into macroeconomic conditions or consequences at this

level of companies' financial decisions. However, recent real experience enables us to find the links between both.

As a matter of fact, there is no unique and coherent theory of the capital structure of companies (Harris and Raviv, 1991). Taking into account different assumptions and arguments one may arrive at quite different conclusions. Despite this theoretical ambiguity it is reasonable to remember two main classical approaches to this problem: the theories making a claim for optimum leverage and those underlining the "pecking order" principle.

According to the initial version of the basic theory of Modigliani and Miller (M-M) if taxes are not taken into account then the value of a company does not depend on its debt level (Modigliani and Miller, 1958). This finding is based on a number of assumptions, for example that of equal access to credit for companies and individual investors (and at the same interest rate) thanks to which investors may execute arbitrage⁶. Nevertheless, the indebtedness of an enterprise raises the level of its risk and thus imposes a higher requirement on returns.

The principal orientation of firms in their choice of capital structure would be the fact that interest constitutes an eligible cost which cuts income tax. As such they constitute a tax shield. Thus, in a modified version of this theory (Modigliani and Miller (1963) (Miller, 1991)) when income tax on companies is taken into account the value of an indebted firm is higher than a non-indebted one by the present value of the stream of tax economies, according to the following formula:

$$VL = VU + TC * B$$

where:

VL – present value of an indebted firm

VU – present value of non-indebted firm

TC – income tax

B – indebtedness

According to this theorem companies should seek the maximum possible degree of indebtedness. Nevertheless, this is far from being the case. 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 a firm constituted 48 per cent in the United States, 49 per cent in Germany, 45 per cent in Canada, 58 per cent in France, 59 per cent in Italy and the highest 72 per cent in Japan.

Thus it is obvious that other factors discouraging the indebtedness of firms should exist. As already 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 cannot easily withdraw from the contract in case of an adverse movement of the conjuncture. Companies operating in sectors with unstable returns and those subject to high operating risks should avoid 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 seriously damage companies in financial distress. They arise from the necessity of costly adjustments of "rigid" contracts the firm cannot fulfill or missed sales or investment opportunities. It is also true that the management of firms in financial distress may more probably take irrational decisions (such as making risky investments or conversely restraining from profit-generating actions for fear of losing money which would otherwise be used to repay loans). If the lenders, being aware of such potential opportunism, include restrictions in credit contracts to reduce that risk (in the form of securities or different operating restrictions as refusal of further loans), it may greatly reduce the autonomy of the firm.

Moreover, even in quite stable situations managers are usually risk-averse for fear of losing their job and reputation after the bankruptcy of the company they managed. This is why they prefer less risky (and less profitable) investments to avoid applying financial leverage on a higher scale. Inciting them to take actions which 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). The agency problem, this time between borrowers and creditors, implies costs of monitoring which increases the required price of external finance.

As indebtedness generates both advantages and disadvantages a thesis of the existence of static optimum of indebtedness has been formulated (Myers, 1984). Besides potential bankruptcy costs decreasing the advantage of debt (tax shield), the influence of high debt on reducing the possibility of growth has been taken into account to assess the level of this optimum together with the features proper to a particular firm:

⁶ It also assumes perfect information on the market, homogenous assessment of firms by all investors and perpetual cash flows and debt of the company.

degree of operating risk (high – decreases the proportion of optimal debt) and the proportion of non-tangible assets (increasing sensitivity to the risk of falling value in the case of bankruptcy).

However, in the context of developed financial markets the choice of the level of leverage is subject to information asymmetry and strategic considerations. Financial leverage should bring about substantial benefits to the best performing firms (due to the positive difference between return on capital employed and the fixed cost of debt). Instead, weaker performing firms have lower benefits so tax shields may not be fully exploited and the outcome of leverage is less as well. High and growing indebtedness should be thus perceived as a positive signal to potential investors and lead to an increase in share price. Nevertheless, this is exactly the reason for the possible unfair behaviour of managers tending to manipulate signals to the market.

The relation between managers of firms and potential investors (buyers of shares) is subject to substantial information asymmetry: while managers possess full knowledge of the strengths and weaknesses of firms, the investors may rely only on scarce information and on the subjective interpretation of market signals (Bebczuk, 2003). Managers may thus be willing to adopt strategic behaviour. For example, one may suppose that shares are only issued when they are overvalued, acting to the detriment of investors (but to the advantage of the firm). If such behaviour may be supposed general, investors should treat the issue of new shares as a signal of their overvaluation and restrain from purchase, thus provoking a decrease in share price. If this kind of mutual game prevails on the market, it would be more in the interest of good firms to issue bonds of known price rather than shares.

But even when a firm with good perspectives wishes to finance its investment with debt, it may be confronted with the negative selection phenomenon. Namely the firm may issue debt to signal good prospects when this may not be true. As 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 risky firm is more likely to become indebted rather than a firm with possibly stable future returns (but not the matching required interest rate).

This behavioural framework is at the origin of the second main stream of theories of capital structure – the so called theory of “pecking order” (Myers and Majluf, 1984). The recommendations of this theory for a “good” firm are the following:

- The firm should use first non-distributed profits, thus 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, and especially those availing of only scarce internal sources may be forced to choose debt in the first place.

This conclusion goes against the recommendation coming from the tax shield assumption, according to which profitable enterprises should be the most indebted to be able to exploit tax economies. According to “pecking order” theory the firm making good returns should restrain both from debt and from issuing shares.

An additional argument for choosing lower rather than higher leverage could also be the preference of management for autonomy of investment decisions, when based on free cash flow and not constrained by creditors (Zwiebel, 1996).

The theories of capital structure of firms are to a large degree based on the assumption of asymmetric information on financial markets. They can be only being partly applied for the interpretation of the functioning of “young” market economies, such as the Polish one, with a capital market of still limited significance. However, the limits on leverage and the “pecking order” of financing may appear simply because of the fear of default linked to excessive debt.

The level of leverage in post-transition countries has recently been studied by Coricelli et al. (2010). They studied actual and optimum leverage in those countries. At company level they found that there are a large proportion of firms without any debt and, in parallel, also a big proportion of firms holding excessive debt. The likelihood of excessive leverage is closely linked to low bank efficiency and market capitalization in a country.

Moreover, analyzing company level data they found that only moderate leverage is beneficial for productivity growth, but leverage exceeding a particular threshold is rather likely to bring about financial stress and bankruptcy. They assessed this upper threshold limit both for debt and for liabilities to assets at around 40%.

The consensus that emerges in corporate finance theory on the risk of excessive leverage throws a new light on the theory of the pro-cyclicality of credit. It underlines that once the optimum level of the leverage of a company is exceeded in some phase of the business cycle, the risk of default rises. However, rising leverage is not a mechanical process, but subject to the decisions of agents in their particular macro- and

microeconomic conditions, and taking into accounts the information they have and their capacity to make use of it. Thus, in one country (or even sector) the choice may be for lower or higher leverage, with as a consequence more or less risk in the credit cycle. The level of leverage preferred by firms not only impacts on the sustainability of growth, but also on sensitivity to monetary policy through credit channels.

In the present paper we will focus on the behaviour of Polish firm with respect to leverage. We will argue that the low level of leverage chosen by Polish firms was the outcome of conscious choice of the firms, and not the result of changing crediting policy of banks or any external pressures. Further, we will underline that it was one of the important reasons for its robustness facing the crisis. It was also a reason for the difficulty of overcoming the recession.

3. DATA AND METHODOLOGY

Our methodology is based on revealing a number of stylized facts. We will show that the level of leverage of Polish firms did not substantially increase in the run up to the financial crisis in spite of lowering interest rates and a more expansive crediting policy of banks (clear with respect to mortgage loans). We will confirm our claim that firms opted for zero or low debt and adjusted their investment projects to the availability of internal funding by analyzing the declarations of firms who did or did not opt for optimum leverage and to their preferences in financing investment and other projects.

We opted for a simple approach of stylized facts although there are many analytical frameworks for testifying the pecking order hypothesis against alternative explanations of the capital structure (classical text: Shyam-Sunder, Myers, 1999). At first glance one may believe that the simple regression of changes in external sources on deficits of internal funds is a valid test of this hypothesis. But in fact it is obvious that such a simple framework delivers no information concerning the sequence of how different sources of funds are employed; despite the fact that such an order is crucial for pecking-order theory. Naturally, this drawback is noticed in the literature and some remedies are proposed. But we have to realize that all in all there is also a criticism of approaches based on hard financial data (Welch 2010). These doubts can be magnified in the case of “young” market economies, such as the Polish one, by the fact that their capital markets are of still limited significance. That is why we adopt here a parallel strategy using results based on qualitative data, coming from surveyed companies. We think the natural solution to these controversies is to ask companies directly about preferences regarding different sources of funds or practices of credit rationing. We use data collected by the National Bank of Poland within the so called yearly and quarterly monitoring of non-financial companies. These surveys have been conducted since the mid of 90s’ on the sample of approx. 1200 small, medium and large firms, representing different sectors of the Polish economy. Very small firms (employing fewer than 9 people) are not present in this sample. Maybe it is worth adding that in this paper we bring up some of these results only indirectly because better documentation of these topics can be found in our earlier work (Boguszewski, Lissowska, 2012).

This choice doesn’t mean that we have neglected the role of hard data – we have utilized such information where possible and reasonable. In such cases we operate on companies’ costs-benefits statements and balance sheets, collected by Central Statistical Office. The strength of such an approach rests in the panel data at our disposal. Thus we are able to analyze the behaviour of individual firms in a historical perspective. In the context of leverage determinants it seems to be especially valuable. There are of course some limitations in such a solution. The main problem is that we have only financial data for 1995-2011. On this basis we have tried to reconstruct some demographic parameters of population but it is clear that this leads to censored results – in our population firms “live” no longer than 16 years.

4. LEVERAGE IN POLISH FIRMS – SOME STYLIZED FACTS

To start, we will illustrate the evolution of loans to companies as compared to the general dynamics of crediting by banks and to the changes in interest rates.

Throughout the first decade of the 21st century the growth of credits for households was much faster than that for companies. Companies did not react to the radical decrease in interest rates (following the substantial reduction of referential rates). While clearly a loosening of the crediting policy of banks is revealed by the fast growth of credits for households, it impacted less and with delayed credits for companies.

Table 1

Evolution of interest rates and of loans in Poland

Year	Nominal referential rate	Growth of credits for companies	Growth of credits for households	Out of which: mortgage credit
2000	19,0	110,0	132,9	163,4
2001	11,5	103,2	114,5	146,9
2002	6,75	100,3	113,6	142,3
2003	5,25	102,1	117,4	147,8
2004	6,50	96,3	114,6	121,2
2005	4,50	102,7	129,4	140,9
2006	4,00	114,2	138,2	154,0
2007	5,00	123,4	141,8	150,3
2008	5,00	128,7	149,3	164,7
2009	3,50	96,0	112,4	111,7
2010	3,50	98,0	114,8	122,8

Source: *Należności i zobowiązania banków*, www.nbp.pl

Thus the credit boom in Poland had two very different pillars:

- moderate growth and mostly granted in PLN credits to companies,
- rapid growth in mainly foreign currency housing credits to households.

If leverage ratios are analyzed two main regularities are typical for Polish enterprises: the relatively low level of leverage measures and the significant ratio of firms with no outstanding debt. Starting with the first issue it is clear (see Table 2) that such a specific measure of leverage – debt to assets - ratio at aggregated level was rather stable after the Polish accession to EU in 2004 and fluctuated between 15-16%. In the case of euro area countries the similar ratio is higher and reaches 45% in 2009 - after monotonic growth from 1999 (Corporate Indebtedness, 2012). For this group of economies we observe the visible drop of this ratio as a consequence of the financial crisis. For Poland changes in 2009 were rather cosmetic.

To be precise we have to point out some differences in leverage patterns after the decomposition of the total according to the size of firms and whether different measures of leverage are considered. For example, it is obvious that smaller firms turned out to be keener on external financing than bigger ones and this resulted in higher liabilities/assets ratios in 2010 than in 2005. On the other hand it is striking that the biggest Polish firms seem to follow the policy of deleveraging – the drop of leverage in this group is significant. In practice this means that very “credit-dependent” firms in the first half of the 90s are now more willing to use their own funds.

The second interesting feature we have mentioned is the high proportion of enterprises without any outstanding credit. We estimate that in 2011 approx. 1/3 of firms belonged to this category. Since Polish accession to the EU we have observed a systematic (almost monotonic) drop in the ratio of firms with any kind of credit. If all medium and large Polish enterprises existing between 1995 and 2011 are considered it turns out that more than 45% of them “consequently” used zero-leverage policy during their lifetimes. In this sample we have only 20% firms that always relied - during the time of their existence – on some form of banking credit. The rest adopted a mixed policy with some periods of zero-leverage and years with outstanding debt. If we extend our analysis by including periods of low leverage (smaller than 5%) one half of enterprises followed a policy of zero or near-zero leverage during their existence. It is thus undisputable that a large portion of Polish medium and big firms are not engaged in credit relations.

It is important from a practical point of view to explain these two characteristics of the financial leverage policy of Polish enterprises. It is obvious that this problem is very complicated and many different instruments could be utilized to try to explain these anomalies. We are able to pick up only on selected issues. Here we lean on a methodology based on surveys conducted among the owners and top managers of enterprises supplemented by analysis based on hard financial data, collected by the Polish CSO. In literature we can find the opinion that such an “eclectic” approach could be better for our goals than that based on hard

financial data (Meier and Tarhan, 2009). Such surveys have been conducted by the National Bank of Poland since 1995 and have covered relatively wide groups of firms, representative in some respects of the general population.

Table 2

Evolution of leverage in Polish firms (to 31 December)

	Total	Up to 49 employees	50-249 employees	Above 249 employees
2005				
DEBT/ASSETS	15,17%	18,86%	17,14%	13,29%
LIABILITIES/ASSETS	41,33%	46,37%	44,28%	38,64%
IN 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%
IN 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%
IN 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%
IN THIS: <i>COMMERCIAL LIABILITIES</i>	14,52%	16,83%	16,75%	12,99%
2009				
DEBT/ASSETS	16,13%	20,24%	18,72%	13,93%
LIABILITIES/ASSETS	41,02%	32,89%	43,38%	38,05%
IN THIS: <i>COMMERCIAL LIABILITIES</i>	13,97%	16,05%	15,52%	12,76%
2010				
DEBT/ASSETS	15,24%	20,93%	18,80%	12,39%
LIABILITIES/ASSETS	44,75%	51,96%	48,97%	41,25%
IN THIS: <i>COMMERCIAL LIABILITIES</i>	14,31%	16,40%	16,25%	13,00%

Source: Data of the Polish Central Statistical Office (*Bilansowe wyniki finansowe podmiotów gospodarczych 2005, 2006, 2007, 2008, 2009, 2010*)

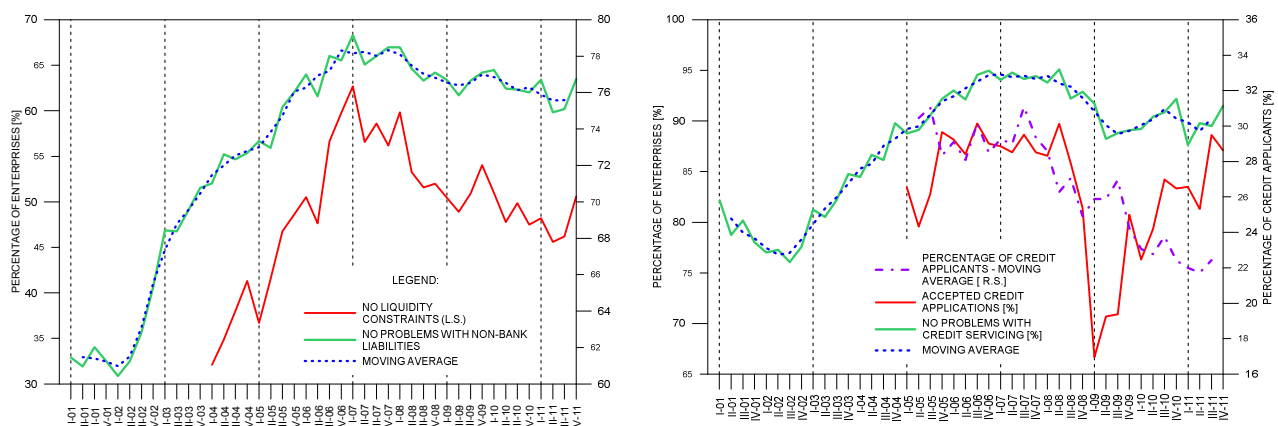


Figure 1. Firms with no liquidity constraints and no problems servicing non-bank liabilities (left panel). The level of acceptance of credit applications and the quality of banking-debt servicing (right panel).

Source: own computations based on monitoring the data of the National Bank of Poland.

The limited access to credit due to low creditworthiness, credit rationing and the unhealthy relationship between commercial banks and enterprises are popular explanations of the low level of leverage. It is not the only explanation and probably not even the dominant one in the decisions of Polish enterprises investigated by NBP.

Closer inspection of Figure 1 (right panel) leads to the conclusion that only a small percent of enterprises (1/4 of population) apply for new credit. On the other hand the rejection ratio is relatively low: reaching - after significant improvement since 2009 - 10-15% of applicants. At the same time the quality of credit servicing by enterprises should be assessed as a good one – the ratio of firms with no such problems is high and rather stable since Polish accession to the EU. At the same time we see (left panel) that general liquidity in this sector is still good although we see a worsening trend since 2008. Summing up in the light of these data there are no indicators that the leverage policy of Polish firms is rather a result of necessity than of free choice. Now we propose some additional steps for verifying or supplementing this hypothesis.

If we switch our attention to hard financial data from company income statements collected by the Polish Central Statistical Office for 1995-2011, there is some information concerning the level of leverage chosen by individual enterprises in consecutive years during their “lifetimes”. We use the last term rather figuratively because these data are not demographic in the strict sense. As already mentioned we have such information for 1995-2011 only. This approach is not perfect but can be treated as a first impression of the true situation. In practice it means that our estimates could be censored. But keeping this in mind we can formulate some important remarks which – of course – should be further proved with full demographic data.

What can be found on this basis? Namely, if we restrict our interest to firms living (existing) longer than 14 years we see that the distribution of variables indicating the year at which firms reach maximal leverage ratio we see that this distribution is close to uniform (Figure 2). It could indicate that firms from this subsample are not very sensitive to business condition fluctuations – with some more visible and unambiguous signs of such impact during the period of heavy economic problems in Poland at the beginning of this century. In opposite cases one could expect that during exceptional years firms had to adjust leverage ratios. It especially seems to be irrational to keep high leverage during the risk of downturn or another negative shock. Of course, in some cases it is probable that those firms had no room for adjustment and maximal leverage was reached “involuntarily” - as a result of unpaid debts. But in the group of long-living firms such situations are probably not prevalent – in the case of strong budgetary constraints resulting in debt problems the risk of bankruptcy and shorter life expectancy is higher.

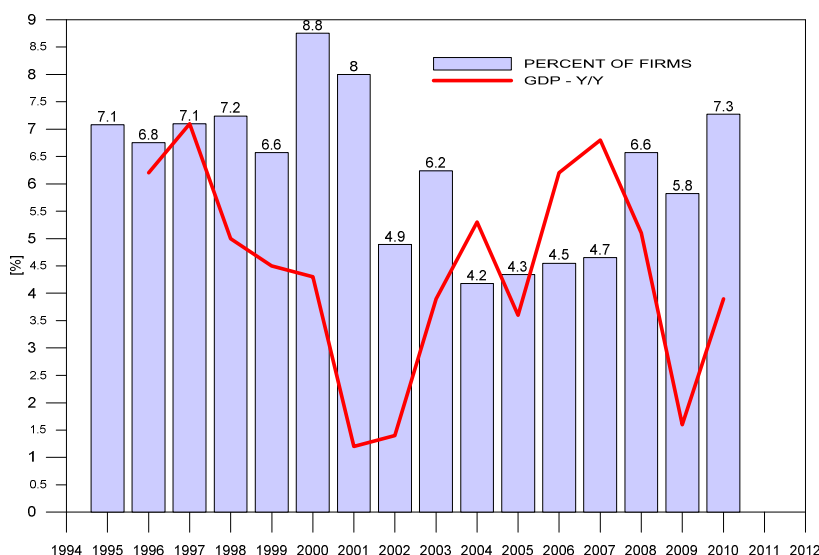


Figure 2. Year of maximal leverage ratio during firms history and the distribution and dynamics of GDP.

Source: own calculation on CSO data. Firms with zero leverage and operating less than 14 years are excluded.

Our data enables us to analyze some additional aspects of persistency in leverage strategies adopted by enterprises. Looking at Figure 3 we see that firms existing in the database during shorter periods of time are using mainly own funds. On the other hand in the case of enterprises “living” longer than 5 years the ratio of

firms with no or low leverage is very stable and fluctuates around 20%. It is interesting that within the group of enterprises with no outstanding credit or with low leverage and conducting such a policy during their lives that 20% of such items practiced such rule for 5 or more years (see - Figure 4). Special attention should be paid to enterprises that followed this policy of low or zero leverage for 15-16 years. These firms account for approx. 4, 5% of all these enterprises.

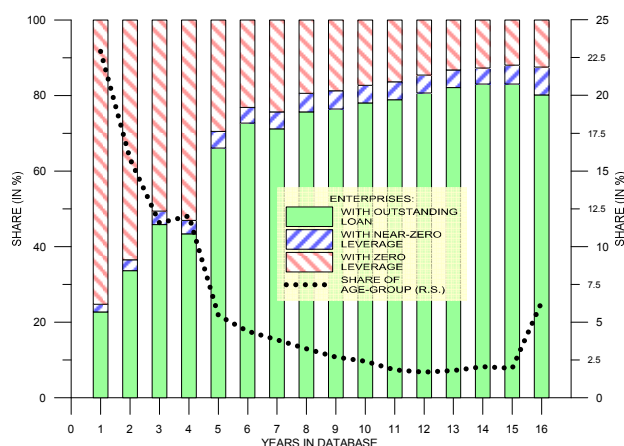


Figure 3 Firms with zero leverage, near-zero leverage and with outstanding credits – the structure according to age-groups (total population=100.0).

Source: calculation on CSO data

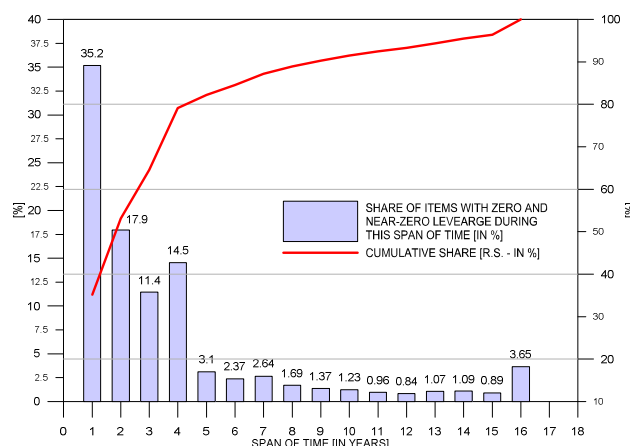


Figure 4 Distribution of time of keeping zero or near-zero leverage among Polish enterprises.

Source: calculation on CSO data

This information is informal proof of the voluntary decisions of these firms - it is practically impossible to operate during such a long period of time and at the same moment to be in such a poor financial position that no credits are available. We can add that these facts also contradict the versions of trade-off theory with dynamic adjustment to optimal leverage. It is clear that adjustment is a time-consuming process. But it is obvious that 5 and more years should be treated as a sufficient period of time for full adjustment. It is confirmed by Figure 5 which indicates that on average the time passing between the moment of maximal and minimal leverage is relatively short.

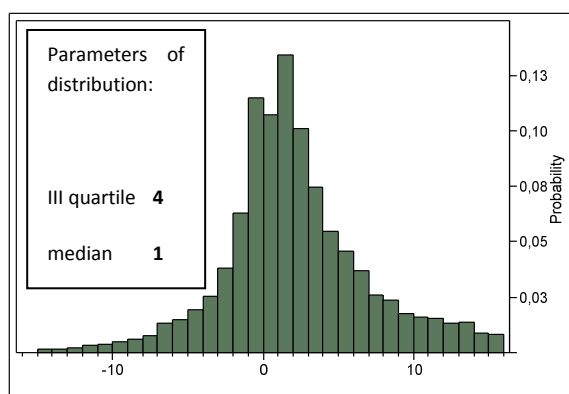


Figure 5 Histogram of the time (in years) between the year of maximal leverage and minimal leverage (for enterprises with non-zero leverage). Negative numbers mean that the minimum occurs after the maximum.

Source: own calculations on CSO data

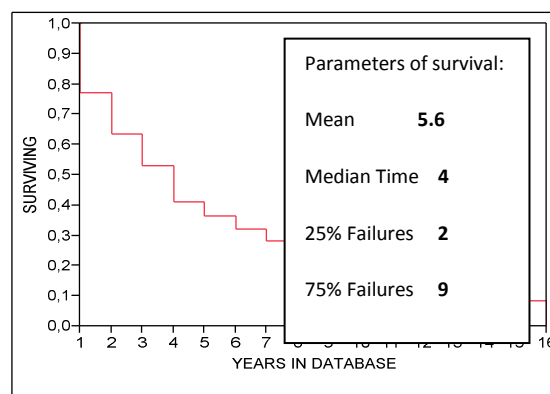


Figure 6 Survival plot for variable: the number of years enterprises are observed (in database).

Source: own calculations on CSO data

One interesting feature is the skewness of this distribution indicating that more frequent is an upward way of achieving optimal leverage than the process of reduction towards such an optimum. Of course, precise analyses require information on the “time-structure” of this distribution for different age-groups of firms and some additional statistical work but it is beyond the scope of this paper.

If the process leading to the observed distribution of leverage in single years wants to be replicated then information concerning the demographic characteristics of the sample we are interested in and especially - survival patterns in this population can be utilized. Provisional characteristics of this distribution could be found in Figure 6. Interpreting this result we should remember that presented data is biased upward. Additionally we adopt specific concept of survival time - we define this variable as the difference between the first and last occurrence in each enterprise (plus one) ignoring the fact that in the case of many firms there are periods of inactivity. Despite being aware of these weaknesses we can find that our population is dominated by firms living not longer than 4-5 years. It means that leverage policy is influenced mostly by these groups of enterprises. According to the characteristics shown in Figure 3 it is clear why zero-debt policy is so popular among Polish companies. Of course the reason for such a policy in these groups of newly-established firms is interesting and important. One potential explanation is a: "too young to go to the bank" syndrome. Bearing in mind the good liquidity of Polish enterprises up to 2011 and rather favorable conditions on the credit market (see Figure 1) we may suppose that for some representatives of this subpopulation the particular arguments of Kon and Storey (2003) could be relevant. Especially the lack of short credit history could be an obstacle if applying for credit. Young companies usually have a weaker financial position and smaller financial assets too. In practice they could be insufficient from the point of view of collateral requirements.

Returning to Figure 3 and Figure 4 it is striking that these outcomes are very similar to the results obtained by Strebulaev and Yang (2006). This paper confirmed that the policy of permanent (during 5 years or longer) low leverage is followed by 22% of US companies. Additionally, they suggest that "managerial and governance characteristics are related to the zero-leverage phenomena in an important way". Intuitively one can assume that firms with smaller personal "turnover" within boards are more inclined to use a trade-off approach and to reach and keep optimal (for such unchanging boards) capital structure. For Polish firms investigated by NBP in 2010 this explanation seems not to be so relevant. Data of the NBP show that there is no direct relation between the frequencies of board reconstructions in firms and grounded in the trade-off paradigm preferred capital structure in companies. The same is true if we analyze the relation between voting and decision procedures in companies and models of the capital structure choice. In both cases it stands out that most companies preferred policies are based on using their own funds as a primary source of financing. It is in line with the pecking-order approach. This rule is proved by another survey of the NBP addressed to enterprises. In the light of these results it is clear that firms are seldom able to identify optimal levels of leverage and to follow policies of achieving and keeping such goals.

One more argument for the hypothesis that low (or zero) leverage was a conscious choice of Polish firms is the negative correlation between leverage and ROA – more indebted firms tended to be less profitable as reported in previous work (Boguszewski, Lissowska 2012). While the general tendency of ROA over time depended on the macroeconomic cycle, there was a meaningful difference between the least indebted firms (with the highest ROA) and the most indebted (where ROA is the lowest). It addressed also the situation of SMEs for which leverage was higher while the accessibility to credit was lower than for the others.

Summing up we see that among Polish enterprises many elements of the behavior of those groups which points to the pecking order approach as a main driver of their capital structure. On one hand there are many such declarations by company representatives while on the other, in this empirical material, there are no signs that managerial aspects are important in this context. There is also no support for availability hypothesis. Of course, our considerations are preliminary in their nature. This subject needs further investigation and we know that the situation in smaller enterprises could be different. It is also interesting to note that in some cases there is no contradiction between pecking order and trade-off theories – in some circumstances optimal – from the point of view of trade-off theory - level of leverage could be the same as the ratio of debt chosen according to the preferences imposed by pecking order approach (Figure 7).

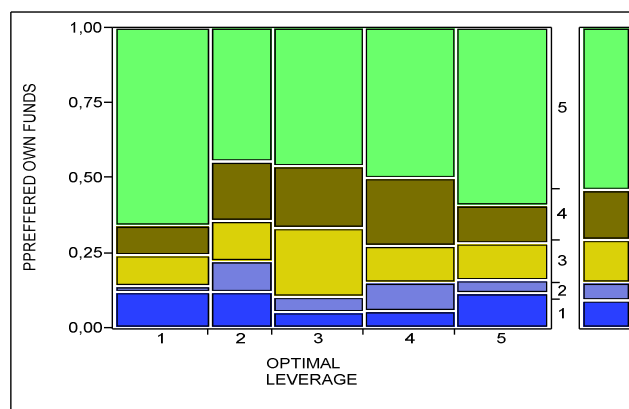


Figure 7. Relation between own-funds policy and optimal leverage

(1 – smallest importance, 5- greater importance).

Source: NBP non-financial enterprises surveys, own calculation.

5. CONCLUSIONS

The present paper clearly shows that the preference for low leverage was a conscious choice of Polish firms. It narrows the relevance of tax shields or optimum leverage considerations in the choice of first applying for any loan, and then for choosing leverage levels. It shows also that rather less well performing or smaller firms were more indebted, the reason being mostly lack of funds for investment. Companies with sufficient internal financial resources were reticent to take loans and preferred to adjust their investment projects in respect to their own liquidity and not to the availability of bank credits. This clearly proves the relevance of “pecking” order hypothesis.

While the strictness of the crediting policy of banks was changing, it did not have a major impact on the choice of leverage by firms.

The preference for low leverage by firms could have positively contributed to the relative robustness of the Polish economy in time of crisis. First, the limited speed up of crediting companies delayed the moment when banks could no longer match credits with deposits from the non-financial sector. Taking place only in late 2007, so on the eve of the financial crisis, this discouraged excessive borrowing by banks from abroad, when it was necessary to fill the liquidity gap. Next, it reduced the adverse effects of the policy of tightening credit to companies, limiting it mostly to small firms with the strongest relying on credit. This relative insensitivity of firms and in particular of their investment decisions, to the availability of credit did not adversely affect economic recovery primarily because of the large margin of spare capacities.

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