

Indebtedness of Polish enterprises compared to selected countries

Anna MOTYLSKA-KUŹMA

Wrocław School of Banking, Poland

Abstract: This elaboration aims to analyse and compare the debt of Polish enterprises compared to selected European countries which underwent (like Poland) a system transformation in 90s of the last century. The paper makes use of statistical comparable measures of basic indicators of corporate debt during the transformation up to 2012 and the analysis is based on official statistical data of the Central Statistical Office in Poland and EUROSTAT as well as bases published by OECD. Despite the fact that the system transformation proceeded in a similar way, Czech, Hungary and Poland struggled with much the same problems at the beginning of their „democratic” way, however basic behaviour in the economic sphere began to diverge. The differences translated, first of all, into an image of particular countries in view of potential investors. The way entrepreneurs behaved is not without significance as their activities in particular markets including the risk of doing business which involved applying financial leverage. The recent crisis revealed that Polish enterprise do much better than businesses in Czech or Hungary. One of the reasons might be the level of debt and the risk of conducting a business. It is worthwhile examining differences among the particular countries.

Keywords: finance management, capital structure, corporate debt, post-communist countries

JEL: G30, G32

1. Introduction

In the 1990s radical changes occurred in numerous economies of Central and Eastern Europe including Poland, Czech and Hungary. The political changes resulted in new trends in the economic development of these countries which led to accepting them by the European Union structures in 2004 and obliging them to enter the euro zone in the later perspective. This situation was reflected in financial decisions made by enterprises including strategies of financing

activities. However the differences in the „mentality and spirit of entrepreneurship” of particular societies caused acceptance of various models of financing business activities.

The elaboration aims to compare the debt of non-financial institutions in Poland, Czech and Hungary over the years 2004 – 2012. The paper is divided into two main sections. The first one concerns the notion of the capital structure in an enterprise and the related theories. The other, analytical one makes an attempt to compare indebtedness of selected post-communist countries: Poland, Czech and Hungary. The data used in the analysis came from statistical offices of these counties, EUROSTAT and OECD. Standard statistical measures were used for the purposes of comparison whereas conclusions were confronted with the previous research on the capital structure in particular countries. The conclusion pays attention to especially significant conclusions as well as gives directions for further research.

2. Financing economic activities – capital structure

2.1 The role of borrowed capital in an enterprise

Running business activities requires not only knowledge and time but first of all financial resources. From the point of view of managing corporate finance, fixed assets are called capital and their value is shown in the balance sheet as liabilities. That is why, we may speak about equity capital which in many cases is not sufficient as well as outside capital completing the gap in financing. Resorting to borrowed capital has advantages and disadvantages. The advantages are as follows:

- possibility of deducting the cost of borrowing from the taxable base which contributes to lowering fiscal burdens;
- lower costs of using it as compared to the equity capital mainly thanks to the so called *tax shield* which translates into the weighted average cost of capital (WACC) constituting the basis for making many decisions in an enterprise;
- owners of borrowed capital do not participate in profit division and do not have an impact on the process of making corporate decisions i.e. when lending the capital they do not take over control of an enterprise or its part;

- functioning of a rich offer of available financing sources provides opportunities of choosing the most appropriate financing source not only considering the nature of the mere investment but also the entire enterprise.

The disadvantages of borrowed capital mainly include its negative impact on financial liquidity and solvency as well as an increase of financial risk.

2.2 Capital structure

Based on the above considerations, the decision about using borrowed capital for the purposes of financing activities and developing an enterprise is connected to constant balancing between benefits and risk of such a solution. Proportions of making use of appropriate capitals are called the capital structure (Masulis 1988; Ross et al. 1996; Higgins 1992) and the basic aim of managing finance in this area consists in searching for an optimum level of relations. However, many theoreticians and practitioners (e.g. Baker and Martin 2011; Brigham and Houston 2009; Carey and Essasyad 2005; Frydenberg 2011; Siedlecki 2012) think that an optimum level of the capital structure is a utopia similarly to the price of balance in the economy. It first of all results from changes in time. An enterprise undergoes constant changes, it makes new investments and completes new development projects. The market does not remain motionless. Everything is of importance to „optimal” capital structure so the management may for a certain, short period of time achieve a better capital structure however maintaining it long-term is not possible. The next argument in favour of the “utopia” of the optimal capital structure consists in a limited access to capitals. This is not only about the amount of capital but also about time, costs and the source it originates from. Needless to say, there are numerous indicators and methods defining capital structure and they refer to “optimum” in absolutely different way.

As the capital structure as well as its optimal amount change with time and it cannot be actually attained, people in charge of managing finance should be mainly responsible for trying to comply with proportions of equity and borrowed capitals on the near optimal level. This task is not simple and it has evoked researchers’ interest all over the world for many years. Firstly, the subject was examined by F. Modigliani and M.H. Miller (1958). Their work called *The Cost of Capital, Corporation Finance and the Theory of Investment* began a discussion about the capital structure and motivated everybody to look for solutions in that area that would facilitate making

decisions about financing activities. The literature enumerates various theories arising from observations and the research. These are, among others, the *trade-off theory* (e.g. Modigliani and Miller 1958; Myers 2001; Opler and Titman 1994), the *pecking order theory* (e.g. Donaldson 1961; Myers 1984), the *agency theory* (e.g. Jensen 1986; Fosberg 2004) or the *life-cycle theory* (Mueller 1972; Bender and Ward 1993). Each method draws attention to different motifs of resorting to borrowed capital and consequences of using it in an enterprise and provides the basis for further research. The trade-off theory for instance pays attention to the correlation between the applied capital structure and the value of the enterprise, the pecking order theory shows the relation between the amount of profit generated and the choice of the way activities are financed.

Apart from theories of building the capital structure, a very common trend in research concerns identification of factors affecting this structure. The most frequently referred to are as follows (e.g. Dević and Krsitić 2001, Szemán 2011):

- macro-economic factors such as a banking system, exchange rates, GDP, accessibility of lending products and sources of external financing, legal regulations or fiscal burdens;
- micro-economic factors such as an investment policy and a policy of managing fixed assets, a tax shield, enterprise development (life cycle), the size of an enterprise, the value of cash flows, the probability of bankruptcy and its costs, profitability of an enterprise, product specialization, the ownership type or an organizational and legal form.

2.3 Measurements of capital structure

The *total leverage ratio* is the basic ratio illustrating the capital structure used by an enterprise.

$$\text{total leverage} = \frac{D}{A} \times 100\%, \quad (1)$$

where:

D – the value of total leverage, in other words the amount of borrowed capital,

A – the value of company assets namely the total of the balance sheet.

This ratio indicates what percentage of the total capitals of an enterprise is taken up by the borrowed capital, in other words, how much debt the entity incurred. The higher the percentage, the greater share of borrowed capital in financing the enterprise. Then we speak about a liberal

policy of financing activities which involves a greater financial risk. And *vice versa*, the lower the value of debt, the more conservative financing policy and the lower financial risk.

A *debt-to-equity ratio* is another measure of capital structure. It divides the value of corporate debt by equity capital informing how many units of debt there are per unit of borrowed capital. Both ratios mentioned above measure the same phenomenon, namely the extent of debt of an enterprise. Thus they can be used interchangeably.

The debt-to-equity ratio will be used for the purposes of this elaboration, measuring and analysing the capital structure. However to illustrate results in a better way, this ration will be broken up into long-term and short-term debts.

3. The debt of enterprises in Poland, Czech and Hungary

Poland, Czech and Hungary were chosen out of numerous countries undergoing system transformations in 90s of the last century. The main reasons, in the first place, involved differences in the initial situations of these countries but also the way and consistency in introducing changes. Poland started from a tough macro-economic situation and followed a path of radical changes and fast adjustments to pro-market behaviour. When commencing reforms, Czech (one year later than Poland) found itself in a much better macro-economic condition and was characterised by a higher development level. Hungary began to implement changes over 60s and their transformation took small steps. Gradual reformation of the economy gave rise to milder “shocks” for the society and their effectiveness may be evaluated years later. However, this is not the subject of this elaboration. Table 1 gathers basic macro-economic data characterising initial conditions for implementing changes in selected countries.

It is worthwhile mentioning that in 1989 Czech formed a common organism with Slovakia whose macroeconomic situation was equally good so out of the three countries selected for comparison it is Czech that was in the best shape at the beginning of changes. Poland was in the worst condition.

Table 1. Macro-economic data in 1989

Specification	Poland	Hungary	Czech
GDP dynamics [%]	0.2	0.7	4.5
Dynamics of industrial production [%]	-0.5	-2.1	1.7
Unemployment rate [%]	0.0	0.5	0.0
Inflation rate [mid-year %]	251.1	17.0	1.4
Balance of the budget [%PKB]	-3.0	-1.2	-1.2
Reserves of foreign currencies (excluding gold) [USD billion]	2.31	1.25	5.74
Foreign debt/GDP [%]	49.3	65.8	11.4
GDP <i>per capita</i> according to PPP ¹ [USD]	8038.0	12399.0	16211.0
Share of the industry in generating GDP [%]	44.1	43.7	no data
Share of agriculture in generating GDP [%]	11.8	15.6	6.3
Share of the private sector in generating GDP [%]	30.0	5.0	5.0

Source: Kowalski (2009), p.7

3.1. Economic situation over the years 1989 – 2004

The initial transformation process, regardless of a country, may be divided into two stages. The first one occurs in late 80s and mid 90s of the last century. It was the time of fundamental changes also called „the phase of destroying and building from the scratch” (Kowalski, 2009). The other stage begins mid 90s and ends with the European Union expansion in 2004. This is the phase of stabilising free market principles and a very rapid economic growth in the surveyed countries.

The first stage of economic transformations was characterised by a massive privatization and dominance of corporate capital. According to Szemán (2011) the most important changes affecting the capital structure in enterprises concerned introduction a dual banking system with a broad access to credits and loans. Not only principles of granting finance but first of all evaluation of creditworthiness were introduced based on the assets owned as well as development perspectives etc. not limits and party membership as it used to be.

The next milestone was reached by changing the ownership structure of enterprises mainly thanks to privatisation. This enabled gathering not only new capital but also opened wide possibilities of reorganization and development. Table 2 presents basic characteristics of implemented stabilization programmes in Poland, Czech and Hungary.

¹ Purchasing Power Parity (PPP). Estimates in USD 2005 constant prices.

Table 2. Characteristics of stabilization programmes

Specification	Poland	Hungary	Czech
Starting the programme	01.1990	continuation	01.1991
Monetary policy	restrictive	adaptation	restrictive
Fiscal policy	restrictive	expansive	restrictive
Payroll policy	restrictive	moderate	restrictive
Exchange rate policy	devaluation	Creeping devaluation	devaluation
Nominal anchor	Rigid exchange rate and „control” of payroll	Exchange rate (periodic)	Rigid exchange rate and „control” of payroll
Nominal anchor	Interest rate	Money supply	Money supply and interest rate
Internal convertibility (companies)	Yes	Yes	Yes
Internal convertibility (households)	Yes	limited	limited
External convertibility ²	limited	limited	limited
Main method of privatization	direct	direct	coupon
Date of commencing privatization	1990	1990	1992
Starting up a stock exchange	1991	1989	1992
Year of the lowest product	1991	1993	1992-1993
Scale of decline (1989=100)	82.2	81.9	84.6-75.0

Source: Kowalski (2009: 9).

The other stage consisted in developing previously implemented solutions and changes. Excellent market conditions and perspectives increased a demand for investment capital. Due to a voracious investment appetite accompanied by a growing demand for money, banks and other financial institutions tried to meet new market requirements by launching newer products. Whereas enterprises undergoing constant development had to fill in gaps in financing by increasing their debts. The possibility of securities trading as well as starting up stock exchanges belong to big events during that period.

3.2. Economic situation after 2004

Actions undertaken in the initial phase of transformations were coherent in particular countries and were carried out in a similar way however the moment Poland, Czech and Hungary

²² External convertibility within the meaning of Art. VIII of the IMF

joined the European Union commenced a series of long-term transformations. Their consequences as well as never ending actions may be observed on every stage. Before the crisis (namely before 2009) they were focused on fulfilling conditions imposed by the Monetary Union in order to implement the common currency – the euro. Nevertheless, recent 5 years have been spent on fighting the world crisis and changing priorities. The observed crisis in the euro zone and the entire European Union does not encourage to intensify actions and efforts in order to accelerate adoption of the common currency. It can be observed in Hungary which initiates actions not convergent with the general policy of the European Union and the agreed joint stand.

3.3. Debts of enterprises- a comparative analysis

Changes occurring in financing business activities of enterprises are striking features of the economic transformations (Dević and Krstić 2001). The comparative analysis of the corporate debt in Poland and Hungary carried out by Dević i Krstić (2001) before accession to the European Union showed that borrowing money to fund a business is much preferred by Hungarian entities. This interdependency concerns both long-term as well as short-term liabilities. According to authors, the differences mainly came from an uneven level of development of relevant institutions in particular countries as well as from the capital market. The above research also proved that both in Poland as well as in Hungary the dominant borrowed capital comprised short-term liabilities. This directly resulted from a high inflation rate which discouraged both enterprises as well as other financial institutions from involving the capital long-term.

Other research conducted by Jindřichovská et al. (2011) shows that the debt among small and medium enterprises running their businesses in Czech is exceptionally high whereas theories concerning the capital structure do not sufficiently explain causes for such state of affairs. When compared, big production companies have a decisively lower debt according to Svedik and Tetrevova (2013). The two studies share the fact that banking loans have the biggest share in the borrowed capital which is also characteristic to enterprises in Poland and Hungary. These trends have been subject to minor changes in recent years due to enhanced interest from corporate investors (also individual ones) in debt securities however a lot of entities cannot afford to use such a source of financing their activities.

Table 3. Debt of enterprises in Poland over the years 2004 - 2012

Year	Total leverage	D/E ratio	Long-term debt ratio	Short-term debt ratio
2012	49.2%	0.97	13.5%	27.4%
2011	50.2%	1.01	13.7%	28.7%
2010	48.5%	0.94	12.8%	28.0%
2009	48.4%	0.94	13.0%	28.0%
2008	49.5%	0.98	12.1%	30.1%
2007	46.8%	0.88	11.5%	28,2%
2006	48.9%	0.96	12.3%	29.2%
2005	48.8%	0.95	12.4%	28.9%
2004	50.5%	1.02	no data	no data

Source: author's own elaboration based on data from GUS (Central Statistical Office), www.stat.gov.pl

Observing the situation in Poland over the years 2004 – 2012 (Table 3) we notice that the total leverage of enterprises as a share in total assets in the surveyed period ranges from 46.8% in 2007 to 50.5% in 2004. The average debt amounts to 49% with a standard deviation equal to 0.98pp. So variation of the debt is on the level pf about 2%. This shows that enterprises in Poland, regardless of the market situation, accessibility of financial products (both traditional as well alternative ones) as well as longer experience in running a business still follow the same policy of financing. This was not changed by the impressive boom over years 2004 – 2007, the crisis that began in 2007 nor lowering interest rates translated into cheaper borrowed capital. This does not mean that the value of the debt did not increase. The data of the Central Statistical Office shows that the dynamics of the debt from 2012 to 2004 as at the level of about 300%. It is worthwhile mentioning that after 2007 changes to the time structure of the debt were made. Enterprises began to resort to long-term liabilities decreasing their engagement in short-term instrument at the same time. This trend was caused by the search for safer and cheaper capital in line with the world trends and development of trading in corporate debt securities. This is proved by the fact that according to the data published by the Central Statistical Office, the share of debt securities in long-term liabilities increased from about 4% over the years 2004 – 2010 to 11,5% in 2011, and in 2013 its reached 15,5%. Also dynamics of the value shows a greater engagement into long-term capitals (dynamics ratio 2012/2004 for short-term liabilities $\approx 100\%$, whereas for long-term liabilities $\approx 400\%$)

Czech is the next country that has been researched. In Table 4 we notice that the debt of enterprises ranges from 44.3% in 2004 to 48.7% in 2011. The average share of the borrowed capital in total assets in that period amounted to 46% with a standard deviation at the level of

1.5pp. According to the data the variation of debt is at the level of 3.3% which is by almost 1/3 higher than in case of enterprises from Poland. Also in Czech enterprises use short-term capital though its share in the total assets is almost twice higher than in Polish Companies.

Table 4. Debt of enterprises in Czech over the years 2004 - 2011

Year	Total leverage	D/E ratio	Long-term debt ratio	Short-term debt ratio
2011	48.7%	0.99	21.2%	27.5%
2010	47.5%	0.94	20.1%	27.4%
2009	44.9%	0.87	19.0%	26.0%
2008	46.6%	0.88	15.9%	30.7%
2007	44.5%	0.82	15.4%	29.2%
2006	44.5%	0.83	18.6%	25.9%
2005	44.9%	0.83	17.5%	27.4%
2004	44.3%	0.82	17.3%	27.0%

Source: author's own elaboration based on Svedik and Tetreva (2013).

Table 5. Debt of enterprises in Hungary over the years 2004 - 2012

Year	Total leverage	D/E ratio	Long-term debt ratio	Short-term debt ratio
2012	40.7%	0.69	no data	no data
2011	41.3%	0.70	no data	no data
2010	40.6%	0.68	no data	no data
2009	42.9%	0.75	no data	no data
2008	41.9%	0.72	no data	no data
2007	39.5%	0.65	no data	no data
2006	40.8%	0.69	no data	no data
2005	39.8%	0.66	no data	no data
2004	41.5%	0.71	no data	no data

Source: author's own elaboration based on www.knoema.com

According to Table 5 the share of the borrowed capital in total assets in enterprises in Hungary over the year 2004 – 2012 ranges from 39.5% in 2007 to 42.9% in 2009. The average debt amounts to 41% with the standard deviation of 0.9pp. The variation is about 2%. Unfortunately due to the lack of data, an analysis cannot be made into the time structure. Needless to say, the interdependency will be similar to Poland and Czech.

As the above information about particular countries come from various sources, their comparison may lead to conclusions that are affected with a big error. Despite this fact, it is worthwhile noticing that enterprises in every analysed country show a comparatively low level of debt as compared to the European mean of 62.6% (Demodoran on-line). This confirms a

conservative approach towards finance management and funding a business. The most conservative attitude is taken by Hungary and the least conservative by Poland. Recent years have witnessed a growth in debt in Czech enterprises which diminished differences between Poland and Czech.

It is worthwhile observing that the structure of financing in the surveyed countries does not significantly change (fluctuations of 2-3-%) even in case of a market crisis or low interest rates. This was caused by constant lack of „financial culture” among managers or in other words the lack of knowledge necessary for making rational and effective decisions.

4. Concluding remarks

While looking at changes that have occurred in Central and Eastern Europe over recent 25 years, we can certainly say that it has been the time of great hope and intense work directed at achievement of standards presented by highly developed countries. Enterprises mainly focused on production, the market and investments. Decisions concerning the way of financing were rather of secondary nature resulting from primary activities. According to Judit Szemán (2011) this fact originates from poor financial culture in countries undergoing transformation in 90s last century. The development of capital markets is not satisfactory too. All above factors make companies prefer internal sources of financing activities to credits and loans, debt securities or shares. Moreover, when looking at situations in particular countries especially after joining the European Union, the countries do not differ much when it comes to financial decision making so we cannot say that unequal starting point affected development paths for borrowing capital.

Bibliography

Backer H.K., Martin G.S., et.al (2011), Capital structure and corporate financing decisions, John Willey & Sons.

Bender R., Ward K. (1993), Corporate financial strategy, Butterworth-Heinemann, Oxford.

Bilansowe wyniki finansowe podmiotów gospodarczych, Raport GUS, www.stat.gov.pl.

Brigham E.F., Houston J.F. (2009), Fundamentals of financial management, South-Western Cengage Learning

Carey O.L., Essasyad M.M.H. (2005), Essentials financial management, Research and Education Association
Damodaran, <http://pages.stern.nyu.edu/~adamodar/> [10.01.2015].

Dević A., Krstić B. (2001), Comparatible analysis of the capital structure determinants in Polish and Hungarian enterprises – empirical study, “Facta Universitatis”, Series: Economics and Organizations, vol.1, no. 9, pp.85-100.

Dudycz T. (2011), Analiza finansowa jako narzędzie zarządzania finansami w przedsiębiorstwie, Wydawnictwo Indygo Zahir Media, Wrocław.

Fosberg R.H. (2004), Agency problems and debt financing: leadership structure effects, “Corporate Governance”, vol. 4 no. 1, pp.31-38.

Frydenberg S. (2011), Theory of capital structure – a review, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=55663 [10.03.2015].

Higgins R.C. (1992), Analysis for Financial Management, Irvin, Homewood.

Jensen M.C. (1986), Agency cost of free cash flow, corporate finance and takeovers, “The American Economic Review”, vol. 76 no. 2, pp.323-330.

Jindřichovská I., Ugurlu E., Kubičková D. (2013), Changes in capital structure of Czech SMEs: A dynamic data approach, The 7th International Days of Statistics and Economics, Prague, September 19-21.

Kowalski T. (2009), Polska transformacja gospodarcza na tle wybranych krajów Europy Środkowej, Ruch Prawniczy, Ekonomiczny i Socjologiczny, Rok LXXI – zeszyt 2.

Masulis R.W. (1988), The debt/equity choice, Ballinger Publishing Company, Cambridge.

Modigliani F., Miller M.H. (1958), The cost of capital, corporate finance and the theory of investment, “The American Economic Review”, vol. 48 no. 3, pp.261-281.

Mueller D.C. (1972), A life cycle theory of firm, “Journal of Industrial Economics”, vol. 20 no. 3, pp.199-219.

Myers S.C. (1984), The capital structure puzzle, “The Journal of Finance”, vol. 39 no. 3, pp.575-583.

Myers S.C. (2001), Capital structure, “Journal of Economic Perspectives”, vol. 15 no. 2, pp.81-102.

Opler T.C., Titman S. (1994), Financial distress and corporate performance, “The Journal of Finance”, vol. 49 no. 3, pp.1015-1040.

Ross S.A., Westerfield R.W., Jaffe J. (1996) Corporate Finance, Irvin, Chicago.

Siedlecki R. (2012), Teorie struktury kapitału a cykl życia przedsiębiorstwa, „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu”, nr 261, pp.381-389.

Svedik J., Tetrevova L. (2013), The capital structure of Czech industrial enterprises, 5th International Conference; Applied Economics, business and development; Recent Researches in Applied Economics and Management, vol.1, pp.28-33.

Szemán J. (2011), An analysis of the capital structure of the Hungarian corporate sector, “Club of Economics in Miskolc TMP”, vol.7 no. 2, pp.61-68.

www.data.oecd.org

www.knoema.com

Zadłużenie polskich przedsiębiorstw na tle wybranych krajów

Streszczenie:

Celem niniejszego opracowania jest analiza i porównanie zadłużenia polskich przedsiębiorstw na tle wybranych krajów europejskich, które przechodziły (podobnie, jak Polska) transformację ustrojową w latach 90-tych ubiegłego stulecia. Do porównania wybrano Czechy i Węgry. Artykuł wykorzystuje statystyczne miary porównawcze podstawowych wskaźników zadłużenia przedsiębiorstw w okresie od transformacji do roku 2012, a analiza opiera się na oficjalnych danych statystycznych GUS i EUROSTAT, a także bazach publikowanych przez OECD. Pomimo tego, że transformacja ustrojowa przebiegała w podobny sposób a Czechy, Węgry i Polska zmagaly się na początku swojej „demokratycznej” drogi z podobnymi problemami, to jednak podstawowe zachowania w sferze gospodarki zaczęły z czasem znacznie od siebie odbiegać. Różnice te przełożyły się przede wszystkim na wizerunki poszczególnych krajów w oczach potencjalnych inwestorów. Nie bez znaczenia było samo zachowanie przedsiębiorców i ich aktywność na poszczególnych rynkach, w tym również ryzyko prowadzonej działalności, którego jednym z podstawowych czynników było stosowanie dźwigni finansowej. Ostatni kryzys wykazał, że polskie przedsiębiorstwa radzą sobie o wiele lepiej niż podmioty gospodarcze w Czechach lub na Węgrzech. Jednym z powodów może być poziom zadłużenia, a zatem ryzyko prowadzenia działalności. Warto zatem zbadać różnice w tym zakresie pomiędzy poszczególnymi krajami.

Słowa kluczowe: zarządzanie finansami, struktura kapitału, zadłużenie przedsiębiorstw, kraje postkomunistyczne
JEL: G30, G32