

# Companies' financing structure in Poland 2006-2010

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## Abstract

This paper discusses changes in financing structure of Polish companies in the period 2006-2010. Results indicate differences between small, medium and large companies. Small companies are increasing debt financing while large companies are decreasing the share of liabilities in their financing structure. This can be explained by assuming that large companies are using "static trade off" theory, while small companies use "pecking order" theory. This conclusion however seems to encounter a serious problem. Small companies continue to increase their assets while profitability and asset turnover are decreasing. Investment and financing choices made by small companies may therefore result from a consumption spree fuelled by debt availability.

## Key words

Financing, structure, companies, risk, Poland

**JEL Classification:** G32

## 1. Introduction

Modern financial management theory offers many valuable, elaborate tools for assessment of effectiveness of managers' decisions. In periods of economic growth and stability the differences, changes and trends are difficult to spot and require long-term data sets. The effects of the economic crisis that started in 2008 provide for interesting data and research results. Managers faced with volatile competitive markets and unstable access to financing take bold decisions and act quickly, revealing interesting behavioural patterns.

The aim of this paper is to analyse changes in firms' financing structure in Poland during the period 2006-2010. The main question is whether and how managers apply available theory in their investment and financing decision making processes.

In this context it is important to keep in mind that most companies make money by creatively acquiring and managing assets, not by devising clever ways to finance these assets. This means that the focus of the financing decision should generally be on supporting the company's business strategy, and decreasing the financing costs. That is, management seeks the capital structure that minimizes the cost of capital and maximizes the firm's common stock price. Consequently, a company's financing decision is intertwined with its long-run competitive goals and the way it intends to manage growth.

In order to provide for an appropriate setting we need to assess the impact of the crisis on Polish companies. A simplified view implies that investments are undertaken in anticipation of future, increased revenues and potential profits. Companies will decrease capital expenditures if lower sales are expected and increase capital expenditures based on higher revenue forecasts. Change in sales can be calculated as:

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$$dS = S_t - S_{t-1}$$

Prior studies document that the Du Pont analysis, which decomposes return on net operating assets into profit margin and asset turnover, have explanatory power with respect to changes in future profitability and investor relations (Soliman 2008; Little, Little and Coffee 2009; Pomykalski, Bakalarczyk and Weiss 2011).

Using the standard Du Pont model (Erhardt, Brigham 2010, p.106), ROA can be presented as (Milbourn, Haight 2005):

$$ROA = ROS \times AT$$

, where: ROA – return on assets, ROS - return on Sales, AT – asset turnover.

This model is further developed to encompass Return on Equity (ROE):

$$ROE = ROA \times CM$$

CM – capital multiplier (assets divided by equity).

Investments can be measured by growth in assets (A) plus depreciation and amortisation:

$$dA = A_t - A_{t-1} + Depreciation$$

Capital structure of the firm refers to its mixture of long- term sources of financing. This mixture includes long-term debt, preferred stock, common equity and other long-term sources such as term loans, bonds and leases. In contrast to capital structure, firm's financial structure refers to its mixture of all sources of financing, both long- term and short-term.

Modgilani-Miller theorem states that capital structure decisions do not affect a firm's value (Modgilani, Miller 1958). In other words the company's financing and investment decisions are independent. Assumptions to this model limit its use in practical settings especially during financial crisis as financing is limited and risk aversion and information asymmetries dictate risk premiums. The problem of how managers actually shape the capital structure is still abstruse to researchers. Myers and Majluf distinguished two alternative theories "pecking order" and "static trade off" (Myers, Majluf 1984). Pecking order theory postulates that firms have no optimal debt ratio and prefer internal financing (retained earnings) to external financing. When external financing is needed they prefer to seek debt financing to equity. Under static trade off theory company's set a target debt ratio and gradually move towards it. This theory implies that firm's value can be maximized by minimizing external claims to its cash flow.

## 2. Data description

Dataset is based on survey data published by the Polish Central Statistical Office (GUS). The survey covers economic entities with 10 and more people employed. Manufacturing refers to Nomenclature statistique des Activités économiques dans la Communauté Européenne (NACE) section D. Manufacture of basic metals refers to NACE section D code 27 (Table 1). Dataset has been limited to include the period 2006-2010 in order to emphasize (rather than dilute) the effects of the current economic crisis.

Table 1. Number of entities covered by the dataset

	2006	2007	2008	2009	2010
	number of entities				
<b>Total</b>	47 048	48 165	53 148	53 847	53 220
<b>10-49 employed</b>	30 028	30 156	35 009	35 429	34 924
<b>50-249 employed</b>	14 007	14 733	14 861	15 273	15 103
<b>over 250 employed</b>	3 013	3 276	3 278	3 145	3 193

GUS divides its dataset by size of companies. Employment is used to distinguish between small (10-49 employed), medium (50-249 employed) and large enterprises (over 250 employed). The European Commission uses three parameters (employment, revenues and book value of assets). The approach taken by GUS is based only on one variable.

The dataset does not provide for depreciation and amortisation data. Asset growth is estimated on the basis that depreciation and amortisation  $\geq 0$ , therefore:

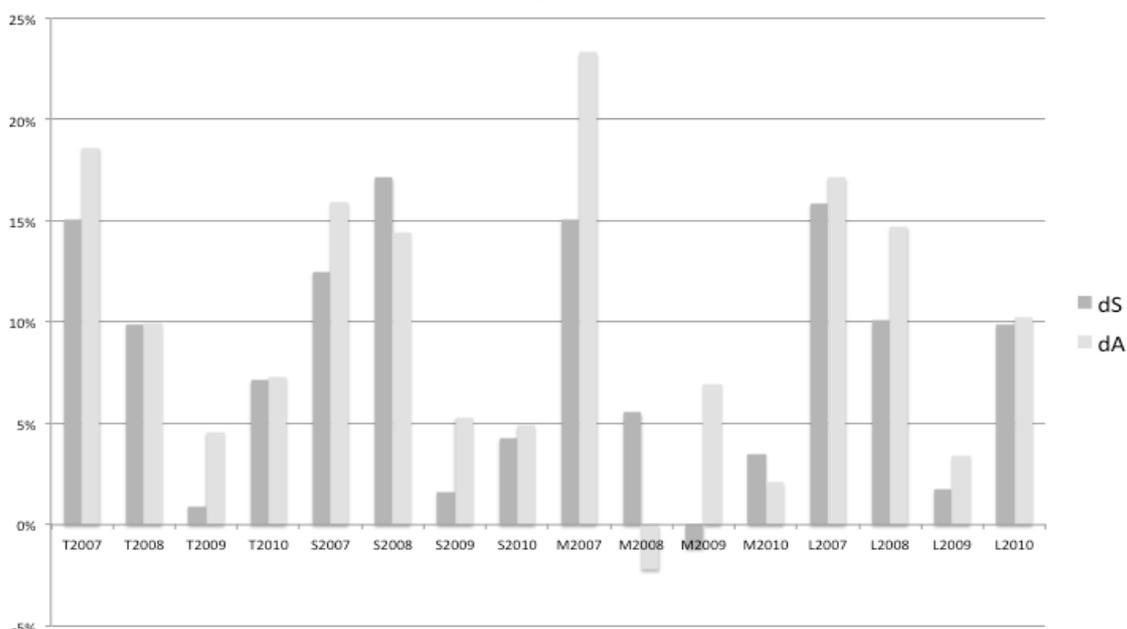
$$dA \geq 0 \text{ if } A_t - A_{t-1} \geq 0$$

Given the short period under analysis using quantitative methods would not be proper, therefore I am referring to graphical presentation of data.

### 3. Results

Changes in revenues (dS) and total assets (dA) indicate that large companies recovered relatively quickly (Figure 1). Small and medium size companies were slower to recover in terms of sales growth. What's more, medium size companies recorded a decrease in revenues (in 2009).

Figure 1 Year to year (YTY) change in Sales (dS) and change in total assets (dA) in Polish companies (2007-2010)

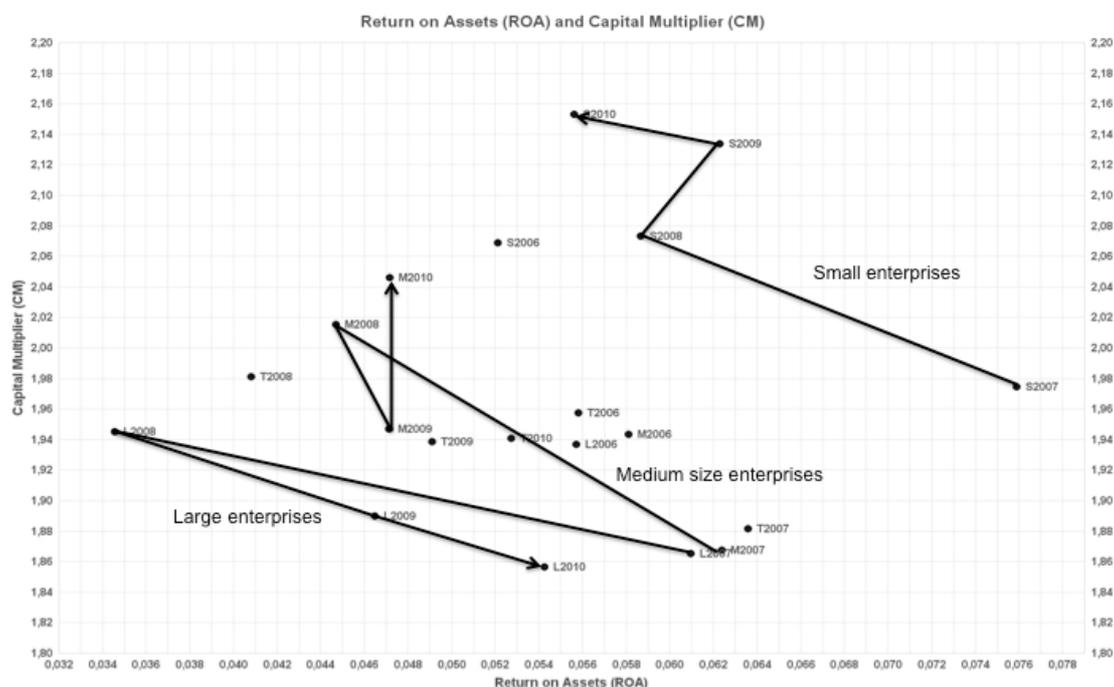


T-Total, S-Small, M-Medium, L-Large, L2010 stands for large companies in 2010.

Small and medium size companies adjusted growth in assets to lower sales forecasts already in 2008. Large companies were slower to adjust. All groups however show signs of optimism with asset growth exceeding growth in revenues (the only exception being medium size companies in 2010).

Financing sources differ. Small and medium size companies increased the share of total liabilities in their financing (capital multiplier), while large companies decreased the share of debt financing (Figure 2). This is surprising as we might expect that small companies would suffer from limited access to debt financing, especially while reporting deteriorating profitability (ROA). It is also important to note that capital multiplier (and debt ratio) in small size enterprises in Poland was higher than in large companies even before the crisis. The decrease in debt financing of large companies can hardly be explained by issuing new equity as the local stock market reports low activity in this area.

Figure 2 Return on Assets (ROA) and Capital Multipliers (CM) in Polish companies 2006-2010



T-Total, S-Small, M-Medium, L-Large, L2010 stands for large companies in 2010.

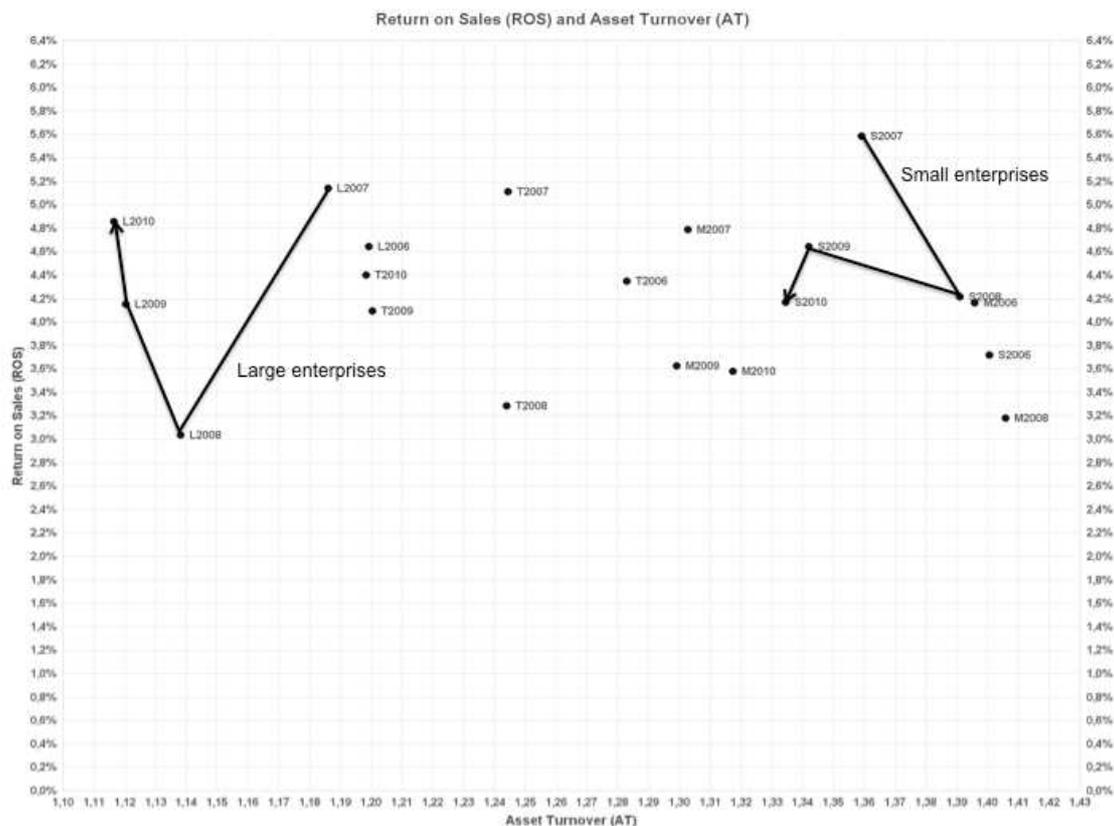
Referring to Meyer and Majluf (1984) theories: small and medium size enterprises seem to be applying “pecking order” theory - preference of external, debt financing over equity, while large companies seem to be applying “static trade off “ theory (decreasing debt financing, targeting a desired debt ratio). This explanation may however be overly simplistic as decreasing ROA indicates that small and medium size companies are decreasing their return on investment, provoking a question: why are these companies continuing to invest in asset growth?

Using the classic Du Pont model analysis ROA is decomposed into Return on Sales (ROS) and Asset Turnover (AT). In 2008 lower sales and profits in large companies decreased both ROS and AT (Figure 3). The situation improved in 2009 and 2010. In small companies both ROS and AT continue to slide.

In small companies access to external equity financing is limited so changing the financing structure may be difficult and would require generating operating cash flows that exceed cash flow investing activities.

Small companies seem to indicate inertia in investment activities (contrary to large companies). It seems that small companies that are known for their flexibility and fast reaction to changing environment are not flexible in changing their investment and financing patterns. This raises an interesting question: are small companies applying “pecking order” theory or are their decisions based on behavioural patterns related to spending habits as described by Starr (Starr 2010)?

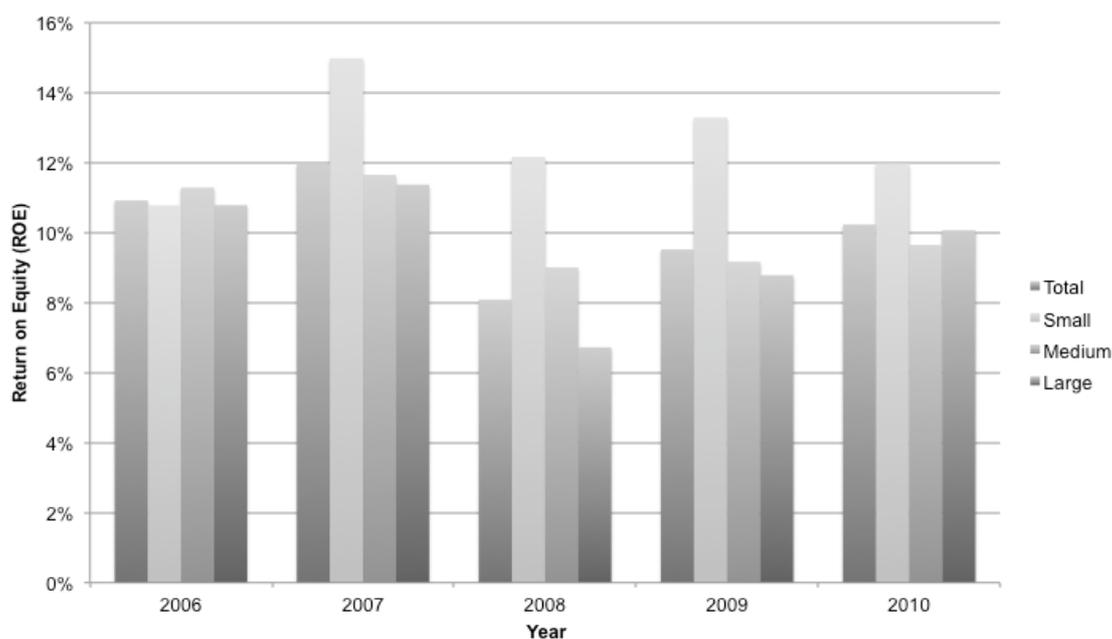
Figure 3 Return on Sales (ROS) and Asset Turnover (AT) in Polish companies 2006-2010



T-Total, S-Small, M-Medium, L-Large, L2010 stands for large companies in 2010.

The impact of those decisions is visible when comparing ROE (Figure 4). Investors may expect size and liquidity related premiums when investing in small companies. The premium offered by small companies has decreased in 2010, while risk of default has steadily been rising. What’s more, increasing this premium may be difficult without improving profitability of sales (measured by ROS) and asset utilization (measured by AT).

Figure 4 Return on Equity (ROE) small, medium and large enterprises in Poland, 2006-2010



#### 4. Conclusions

Small companies during crisis can react faster than large enterprises (fast cuts in asset growth in 2008) yet are less flexible in size of the cuts spending more in subsequent periods (2009). This optimism comes at a high price as return on sales and asset turnover are falling. Small companies seek debt financing, increasing the capital multiplier. The difference in financing sources between large and small companies can be explained by referring to “static trade off” and “pecking order” theory (respectively). This conclusion may however prove to be a simplification as continuing investment optimism of small companies does not transform into higher revenues and profits.

The increased debt financing (financial leverage) is insufficient to maintain size and liquidity related premiums in ROE. Taking into consideration the fact that small companies may have difficulties in attracting equity investments, long-term crisis may cause further deterioration in financial standing of small companies. This further implies that behavioural aspects should be taken into account when analysing financial risk.

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