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PROFITABILITY ASSESSMENT OF LATVIAN COMPANIES: EMPHASIS ON ROE

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Abstract

This paper examines the financial position of Latvian companies. The data set consists of 450 non-listed companies in Latvia over the period from 2004 to 2012 and covers three industries – agriculture, food production and retail. This study puts emphasis on profitability and in particular on return on equity (ROE). Firstly, the authors discuss the theoretical aspects of the return on equity. In the second step, empirical analysis of profitability is done by using correlation and regression analyses. Finally, the paper concludes with the summary and recommendations. Results show that the main driver of the increase in ROE in 2011 and 2012, compared to 2010, is the return on sales, which has become positive from negative. It means that companies were able to add a larger premium to the price of products. These trends have to be viewed in positive light since the increase in ROE has not happened due to borrowing but instead due to improvements in profitability and activity.

Key words

DuPont Analysis; Profitability; Return on equity; Return on sales; Return on assets.

INTRODUCTION

The business environment in Latvia is undergoing a strong transformation in recent years. On the one hand, it is slowly being put in order, while on the other hand, an ever more stark increase in competition is emerging. The market becomes more saturated, and there is an increasing difficulty to operate a company without the regard of the competition, and the activity and profitability of company operations. After the accession of Latvia to the EU, the competition has significantly increased in several sectors of industry. The stronger competition has had a larger impact on small and medium-sized enterprises. Due to the fact that these companies have the most difficulty in stabilizing their market positions and have the possibility to quickly become insolvent, more attention has to be turned towards the investigation and analysis of their financial activities, because financial analysis is one of the most important functions of financial management, which provides the assessment of company's financial position and competitiveness that has a special importance in successful functioning of the enterprises. At this moment, when the impact of knowledge-based and innovative business on the economic development of the country is ever increasing, financial statements are playing the role of the source of information on company financial indicators. The insertion of these indicators into different prediction models allows to evaluate the financial position of a company, as well as the prospects of future development.

Financial management as a science has a complicated structure. The main parts are financial accounting and analysis that is based on data from accounting and the probable estimate of future operating activity. From the perspective of the outlook, it is becoming more important to turn greater attention to the use of the results of financial analysis in the decision-making process, to the raising of its quality and to the economic interpretation of analytical data. In the changeable conditions of market conjuncture, it is topical to evaluate the profitability of Latvian companies with the emphasis on the ratio, which is the main indicator that company owners are interested in – the return on equity (ROE).

The aim of the paper is to assess the profitability and provide recommendations on the improvement of prediction of the return on equity in Latvian companies. The paper contains the financial analysis of Latvian companies with an emphasis on the profitability ratios (return on sales, return on assets, return on equity) because they provide the information on the earnings-generating ability of the company. For more detailed analysis of the influencing factors, the ROE ratio was selected. The paper also deals with the subject of regression and prediction of the return on equity.

The paper uses the database information of the Central Statistics Bureau of the Republic of Latvia on the financial indicators at the end of the respective year, as well as sales and earnings of non-finance companies for the period of 1995 to 2012, and the 'Lursoft' database on the financial position of Latvian companies. The paper has used the following general methods of scientific research: information analysis and synthesis, logical constructive methods, the grouping of data, and the methods of graphical description. Correlation and regression analyses are performed in SPSS software. The hypothesis of the research: the return on equity for the coming (current) financial period (year) can be predicted most precisely by using the return on equity of the previous (base) period (year).

THEORETICAL ASPECTS OF ANALYSIS OF THE RETURN ON EQUITY

There are several studies on the subject of the optimal level of company equity and the proportion of financing sources. Barton and Gordon (1988) have inferred that companies with higher level of diversification have a higher level of debt. Kochhar and Hitt (1988) have arrived at the conclusion that company's internal development usually happens thanks to the equity, and it is easier to predict and plan. Low et al, (1994) conducted research on the debt ratio, and inferred there is no regularity between the size of debt and the structure of enterprise. It is mainly the question of corporate management and business environment.

Booth et al, (2001) have studied the debt ratio and its impact on management decision-making. They stated that there is a relationship between debt maturity and management decisions. Allayannis et al, (2003) write in their paper that equity impacts the ability to raise foreign capital. Balakrishnan and Fox (1993) have discovered that the type and specific properties of business activity are able to impact the financial leverage of a company, while Berger and diPatti (2006) showed that the leverage has an impact on the size and efficiency of earnings, as a result of which it can be used in the planning process.

Often, financing sources in particular are the reason for shareholder discord. Morellec (2004) proves that shareholder discord has a correlation with the level of debt in companies. Kochhar (1996) substantiates that capital financing is an important resource of management and planning.

Braun and Larrain (2005) have investigated the determinative factors of capital structure, and they have found a material relationship between company strategy and sources of financing. They have ascertained that capital has a decisive impact on company development.

Profitability of companies is a major objective the managers set, and is particularly watched by company stakeholders. That's why the rates of return are among the most important measures the companies target during a financial year. Profitability is influenced by a lot of factors, both internal and external. Simply by watching the dynamics of profitability, one cannot say for sure, which factors had a major impact on the return and in what proportion. Yet, by studying the levels of some important rates of return during a period of several consecutive years marked by a severe downturn in the economy, one can draw some useful conclusions regarding the impact of the crisis on the return of enterprises. The authors agree with the opinion of Berman et al, (2013) that ROE can be used to compare the company with its competitors. However, high level of ROE can also be in cases when the company is taking on more debt. Then, risk must be taken into consideration.

Warren Buffett points to the usage of ROE in investment decision-making. For example, in his annual letters to the shareholders, he mentions ROE 32 times during the last 20 years. At the same time, he states that ROE on its own is not sufficient for investment decision-making. Warren Buffett indicates that he is looking for companies with good return on capital, at the same time with small or non-existent debt (Price, 2012).

Circiumaru et al, (2010) have analysed the 2008 data from 73 manufacturing companies, and dealt with the impact of three factors – return on sales (ROS), asset activity ratio, and financial leverage – on ROE, using univariate regression analysis. A correlation was found between ROS and ROE, however, the impact of ROS on ROE was not identified. A linear relationship was not found between asset activity ratio, financial leverage and ROE.

Kabajeh et al, (2012) have looked at a small sample of companies (28 enterprises) in the period of 2002-2007. The results revealed a positive relationship between return on assets, ROE, return on investment and market price of shares. Kasilingam and Jayabal (2012), using the example of one company (time period 1996-2009), have analysed profitability and solvency. They have discovered that there is a positive relationship between ROE and assets-to-equity ratio, as well as the assets activity ratio.

Stocker (2005), by analysing ROE of companies in different countries, have concluded that return on equity is directly related with economic freedom. A recommendation was put forward that in order to receive a higher return on investment one must choose countries, where an increase in economic freedom is expected. As pointed out by Liesz (2002), the DuPont model is significant in order to illustrate the relationship of balance sheet and profit or loss account items, as a result of which it is possible to work out strategies for improvement of ROE.

Most authors agree that enterprise performance can be the best described by profitability ratios. In empirical research are used such profitability ratios as ROA (Berman et al, 1999; Choi & Wang, 2009), ROE (Preston & O'Bannon, 1997; Agle et al, 1999), ROS (Graves et al, 1999; Callan & Thomas, 2009).

Even though for the last couple decades there is a paradigm shift towards growth and value indicators as the best ones to use in order to describe the enterprise performance (Matsumoto et al, 1995), some studies still show the frequent use of profit and profitability ratios (Graham et al, 2005). The use of profitability ratios is justified using several arguments. Firstly, there are tremendous number of different ratios and indicators, however shareholders need a simple and clear ratio, which shows the enterprise performance and is easy to interpret and compare with other enterprises. Profitability ratios, in particular ROE, comply with the afore mentioned. Secondly, profitability ratios are widely covered in media. Thirdly, since the whole enterprise performance is described by one number, then it is relatively simple to perform forecasting.

EMPIRICAL ANALYSIS OF THE RETURN ON EQUITY

By using the database of the Central Statistics Bureau of Latvia (2013) one can calculate that the average level of the return on sales (ROS) in Latvian companies in 2012 was 2.89%, which means that a typical Latvian enterprise has earned 2.89 centimes from one lats of sales. Compared to other profitability ratios, in the majority of years, the return on sales has the lowest level of the ratio. The exception is three last years (2010-2012), when return on sales is higher than the return on assets. As an explanation one must mention the fact that the asset activity had fallen below 1. The only year when ROS was negative is 2009, when a typical Latvian company did lose 2.23 centimes from one lats of sales.

The return on assets ratio of an average Latvian company in 2012 was 2.84%, which testifies that a typical Latvian company has earned 2.84 centimes from one lats invested in assets. This ratio also was negative in 2009, when Latvian companies lost 1.63 centimes from one lats invested in assets. The lowest point of the crisis was reached in 2009.

In a typical Latvian enterprise, return on equity in 2012 was 6.78%, which means that the owners of an average Latvian company earned 6.78 centimes from one lats invested. The volume of this ratio has varied to a greater degree than the other two profitability ratios. As a reason one must mention the fact that companies use debt to increase their financial leverage, and in the years of economic growth, it gives a positive effect for ROE compared to ROA and ROS. In turn, during crisis, financial leverage inflicts a negative influence on ROE in comparison to the other profitability ratios. In 2009 and 2010, as well as in 1996, the return on equity was negative, which testified that company owners had suffered losses from the capital invested.

In 2012, all three profitability ratios have increased.

It is possible to analyse the factors influencing ROE using the instrument of DuPont analysis. It expresses the return on equity as a multiple of return on sales (calculated by the use of net profits), asset activity and an indicator of capital structure (equity multiplier).

$$ROE = (\text{net profit}/\text{sales}) * (\text{sales}/\text{average assets}) * (\text{average assets}/\text{average equity}) \quad (1)$$

$$ROE_{2012} = (758.1/35898.7)*(35898.7/((35768.4+37213.3)/2))*(((35768.4+37213.3)/2)/((10580.8+11780.6)/2)) = 2.1\% * 0.984 * 3.264 = 6.8\%.$$

$$ROE_{2011} = (673/31971.3)*(31971.3/((34878.9+35768.4)/2))*(((34878.9+35768.4)/2)/((9623.3+10580.8)/2)) = 2.1\% * 0.905 * 3.497 = 6.6\%.$$

$$ROE_{2010} = -0.01\% * 0.816 * 3.758 = -0.03\%.$$

The main driver of the increase in ROE in 2011 and 2012, compared to 2010, is the return on sales, which has become positive from negative. It means that companies were able to add a larger premium to the price of products. Also, the asset activity has improved in 2012 and 2011. The equity multiplier has continued to decrease, both in 2011 and 2012. These trends has to be viewed in positive light because the increase in ROE has not happened because of borrowing but instead because of improvements in profitability and activity.

The following data in this section have been obtained from the 'Lursoft' database of Latvian companies (2013) in the following three sectors of industry: agriculture, food production, and retail sector. Each sector is represented by 150 companies (total number 450) for the time period 2004-2012. The pooled correlation coefficient were calculated of all three industries for the return on equity with the factors influencing it. Out of the ten analysed years, in nine a significant correlation was detected with (net profit/sales) ratio, while in seven – with (sales/assets) ratio, as well as with (assets/equity) ratio. In the concluding year of the study, 2012, the only significant correlation is with the ratio of (sales/assets) (correlation coefficient of 0.141).

If one conducts the analysis for separate industries in 2012, the return on equity in agriculture has a significant correlation with all three ratios of the DuPont system of analysis. The opposite is true in food production, where none of the variables has a correlation with the return on equity. It means that, in food production, it is harder to predict ROE. Like in agriculture, in retail sector ROE has a significant correlation with all three variables in the DuPont system. From the three coefficients, the highest correlation is observed for the ratio of (net profit/sales) – 0.716 in agriculture and 0.334 in retail.

REGRESSION AND PREDICTION OF THE RETURN ON EQUITY

In addition it is necessary to examine, which indicator can serve as the best predictor of the return on equity. The hypothesis of the research is that the best predictor of the return on equity one year ahead is the return on equity itself.

In order to examine the hypothesis, the correlation coefficients were calculated that show the strength of the relationship between the return on equity in year 1 (ROE_1) and return on equity in year 0 (ROE_0), return on assets in year 0 (ROA_0), financial leverage at the beginning of year 1 (FL_b), return on sales in year 0 (ROS_0), assets activity in year 0 (AA_0), current ratio at the beginning of year 1 (CR_b), as well as sales growth rate in year 0 (SGR_0). The results of correlation analysis are displayed in Table 1.

The results of the correlation analysis are really surprising. Contrary to the expected and to the hypothesis that the ROE of year 1 can be best predicted by ROE_0. The highest correlation coefficient by absolute value is with ROA of the previous year (0.617). The strength of the relationship with asset activity in year 0 (0.592) is also stronger than with return on equity in year 0 (0.583). Therefore, the hypothesis of the research must be rejected.

TABLE 1. THE RELATIONSHIP OF THE RETURN ON EQUITY (ROE_1) OF LATVIAN COMPANIES WITH OTHER FINANCIAL INDICATORS

	ROE_0	ROA_0	FL_b	ROS_0	AA_0	CR_b	SGR_0
Correlation coefficient	0.583	0.617	-0.095	0.537	0.592	0.123	0.583
Regression coefficient	0.557	1.634	-0.011	1.813	0.210	0.055	0.304

Note: Database of the Central Statistics Bureau of the Republic of Latvia

Then, seven regression coefficients were calculated (Table 1). For a model with ROA_0 as the independent variable and ROE_1 as the dependent variable (the closest relationship), regression coefficient is 1.634, which means that when the return on assets increases by one unit the return on equity will grow by 1.634 units. The only relationship, which is negative, is with the financial leverage at the start of year 1. This means that if financial leverage (debt to equity ratio) increases by 1 unit, the return on equity will decrease by 0.011 units. Next, it is topical to conduct the analysis of equity, as well as balance sheet assets and liabilities, since they influence the level of the return on equity.

By analysing the assets structure data from the 'Lursoft' database on Latvian companies one can conclude that in all years of the study (2004-2012) the proportion of long-term investments to assets is the lowest in retail companies, compared to other branches of industry. This testifies that the risk of assets is the lowest in the retail industry from, the three analysed sectors. In most of the periods, the highest proportion of long-term investments and the highest assets risk is in the agricultural sector, while the proportion in food production industry is an average one among these three sectors. At the end of 2012, the average proportion of long-term investments in agricultural enterprises is 63.1% of assets, while in food production industry it is 48.95%, and in retail – 43.45% (Fig.1). During the last four years, substantial changes in agricultural and food production industries can be observed with regard to the proportion of the long-term investments. It has significantly increased in agriculture, while in food production it has substantially decreased.

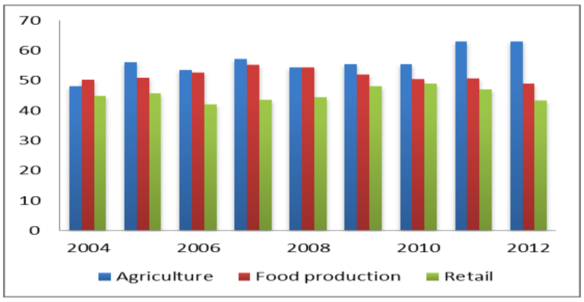

FIG. 1. THE PROPORTION OF LONG-TERM INVESTMENTS TO ASSETS IN THREE INDUSTRIES OF LATVIAN ECONOMY, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

Next, after analysing the structure of assets, one must turn the attention to the opposite side of the balance sheet. Therefore, the proportion of debt will be investigated in more detail (Fig.2).

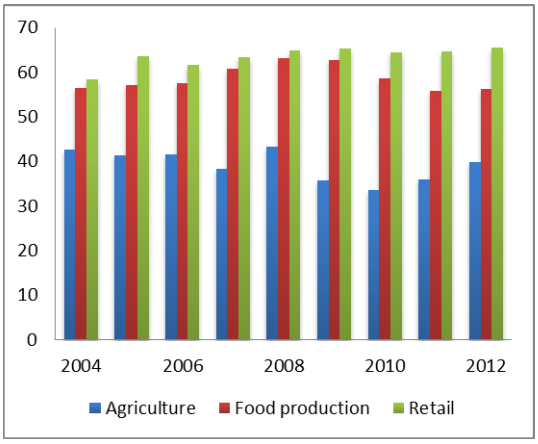

FIG. 2. THE PROPORTION OF DEBT TO ASSETS IN THREE INDUSTRIES OF LATVIAN ECONOMY, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

In all years of the study, the highest proportion of debt is in the retail sector, while the lowest – in agriculture. Therefore, one can conclude that the highest risk of the right side of the balance sheet is in retail, while the lowest risk is in the agriculture industry. The proportion of debt to assets and the risk of the right side of the balance sheet of the food production industry is between two afore mentioned industries.

One can conclude that the recommendation in the theory of financial management is almost completely fulfilled. It states that if the risk of assets is high, then the company can afford to work only with a low risk of the opposite side of the balance sheet, and reversely, if the risk of the right side of the balance sheet is high, the risk of assets must be low. There is a comparatively low risk of assets (the proportion of long-term investments) in the retail industry, and that is why it can operate with a comparatively high risk of the right side of the balance sheet (the proportion of debt). On the contrary, the agriculture industry operates with a low level of debt and high proportion of long-term assets, which it can afford.

FIG. 3. THE RETURN ON EQUITY IN THREE INDUSTRIES OF LATVIAN ECONOMY, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

By analysing the dynamics of the return on equity of the three industries (2004-2012) in Figure 3, it can be inferred that the most stable indicator was in agriculture enterprises – it even did not suffer during the recent financial crisis. However, one must note that the ROE of agricultural companies before crisis was in third place among the three sectors. During the crisis it took the lead but slipped to second place in 2012. As a result of the financial crisis, the return on equity of retail and food production industries was reduced significantly, even becoming negative. In the majority of years of the study, one can observe that the changes of ROE of the retail industry lag behind the return on equity of the food production.

In 2012, the owners of a typical agricultural enterprise in Latvia earned 11.94 centimes from one invested lats. In turn, the shareholders of a company in the food production sector earned 4.85 centimes, while in retail owners earned 17.43 centimes from one invested lats. It points out the fact the food production provides the lowest profitability among these three sectors of industry.

As shown in Figure 4, in the last three years, the ratio of return on sales (ROS) is bigger than the return on assets (ROA) and even the return on equity (ROE). It means that, despite the high premium on the produce, there is a low asset activity, as well as low proportion of debt. In 2006 and 2007, the ROS is negative, which attests that prices of agricultural produce have fallen in these years. Beginning from 2008, the profitability of agriculture has remained high. In 2012, a typical agricultural enterprise has earned 6.94 centimes from one invested lats in assets, while earnings were 16.94 centimes out of one lats of revenues.

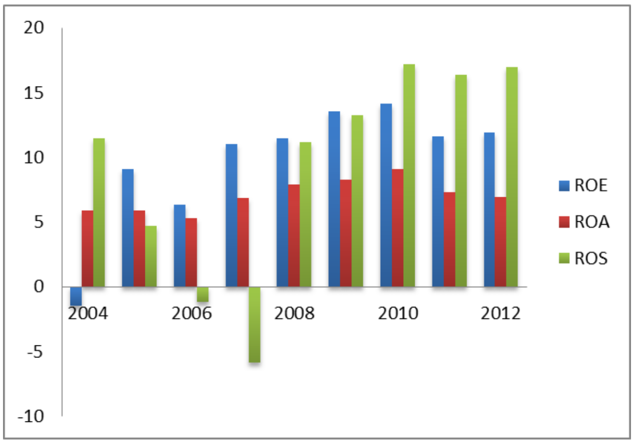

FIG. 4. THE PROFITABILITY RATIOS OF AGRICULTURE INDUSTRY IN LATVIA, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

In 2012, the food industry still has not recovered from its experience in the years of the financial crisis (Fig.5). In the last year of study, a typical food production enterprise has earned 4.99 centimes of profit from one lats invested in assets. In turn, the ROS is -5.7%, which means that, in 2012, a typical food production company has lost 5.7 centimes from one lats of sales.

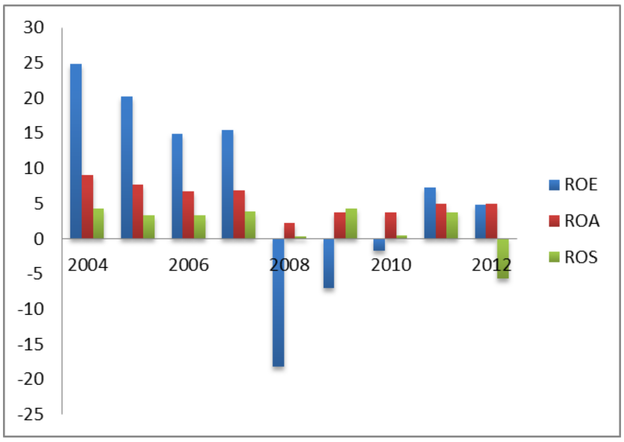

FIG. 5. PROFITABILITY RATIOS OF FOOD PRODUCTION INDUSTRY IN LATVIA, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

It is the return on equity that has the most variation in dynamics. It is logical and can be expected because it is the owners, who are taking on the highest risk (and are hoping to earn the most profits) in a company. This kind of dynamics has been set by the financial leverage, when utilisation of debt in the years of economic growth provides high returns to owners, but during crisis it causes substantial losses.

In 2012, for the first time in the period of study, the average return on sales of food production companies has become negative, which testifies that the food producers did not want or were unable to raise the premium on their produce in the changing market conditions.

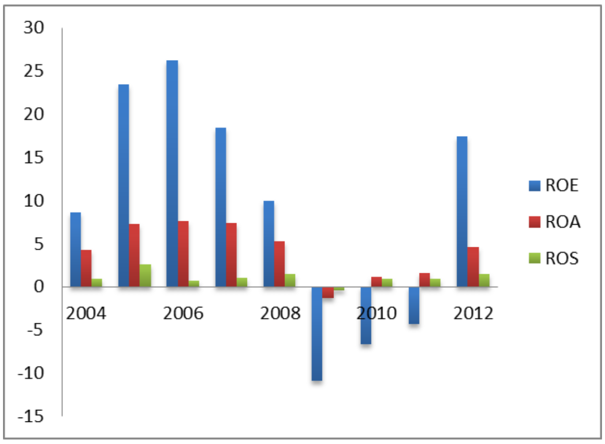

FIG. 6. THE PROFITABILITY RATIOS OF RETAIL INDUSTRY IN LATVIA, 2004-2012,%

Source: 'Lursoft' database of Latvian companies

Figure 6 shows the financial leverage in action. If in 2004-2008, as well as 2012 it is the ROE that is the highest (and positive) of the profitability ratios, ROE is the largest in absolute terms (while being negative) in 2009-2011. This once again affirms the fact that there is correlation between high earnings and large losses. Historically, the highest profitability in retail sector was in 2006. In the other two industries of the study, years with the highest profitability were different (in agriculture companies it was 2010, while in food production 2004).

CONCLUSIONS

The paper contains the financial analysis of non-financial Latvian companies with an emphasis on return on equity because this ratio is of most interest to company shareholders. The authors agree with the opinion that ROE can be used to compare the company with its competitors. However, high level of ROE can also be in cases when the company is taking on more debt. Then, risk must be taken into consideration.

The volume of the return on equity has varied to a greater degree than the other two profitability ratios – return on assets and return on sales. As a reason one must mention the fact that companies use debt to increase their financial leverage, and in the years of economic growth, it gives a positive effect for ROE compared to ROA and ROS. In turn, during crisis, financial leverage inflicts a negative influence on ROE in comparison to the other profitability ratios. In 2012, the owners of an average Latvian company earned 6.78 centimes from one lats invested.

A typical Latvian enterprise has earned 2.89 centimes from one lats of sales. The return on assets of an average Latvian company in 2012 testifies that a typical Latvian company has earned 2.84 centimes from one lats invested in assets.

In 2012, all three profitability ratios (ROS, ROA, and ROE) have increased. The main driver of the increase in ROE in 2011 and 2012, compared to 2010, is the return on sales, which has become positive from negative. It means that companies were able to add a larger premium to the price of products. These trends has to be viewed in positive light because the increase in ROE has not happened because of borrowing but instead because of improvements in profitability and activity.

In order to conduct the regression and correlation analysis, a particular and specific attention has been turned to three very important industries of the Latvian economy – agriculture, food production and retail (the total number of observations is 450). It is harder to predict ROE in food production industry because none of the variables has a correlation with the return on equity.

In the agriculture and retail sector, the impact of all factors of the DuPont system on the return on equity is significant. The ratio of net profit to sales has the strongest impact on ROE. However, a significant impact on the ROE is generated also by the ratio of sales to assets, as well as the ratio of assets to equity.

Analysing the pooled data of the three sectors of industry, one must conclude that the only driver, whose influence on ROE has an adequate level of validity, is the sales to assets ratio. The fact that net profit to sales has the most significant correlation observations with the return on equity is not a surprise, since both ratios are part of one group of financial analysis ratios.

Contrary to the expected and to the hypothesis that the ROE of the next year can be best predicted by ROE of the base year, the highest correlation coefficient by absolute value is with return on assets of the previous year. It means that it is recommended to conduct the prediction of the return on equity by using the return on assets. When the return on assets increases by one unit, the return on equity will grow by 1.634 units.

One can conclude that the recommendation is the theory of financial management is almost completely fulfilled. It states that if the risk of assets is high, then the company can afford to work only with a low risk of the opposite side of the balance sheet, and reversely, if the risk of the right side of the balance sheet is high, the risk of assets must be low. There is a comparatively low risk of assets (the proportion of long-term investments) in the retail industry, and that is why it can operate with a comparatively high risk of the righ side of the balance sheet (the proportion of debt). On the contrary, the agriculture industry operates with a low level of debt and high proportion of long-term assets, which it can afford.

As a result of the financial crisis, the return on equity of retail and food production industries was reduced significantly, even becoming negative. In the majority of years of the study, one can observe that the changes of ROE of the retail industry lag behind the return on equity of the food production. The food production provides the lowest profitability among the three sectors of industry.

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