Impact of Company’s Leverage on Financial Accounting Method Choice

Danutė Zinkevičienė¹, Kristina Rudžioniienė²

¹ Lietuvos žemės ūkio universitetas
Universiteto g. 10, Akademija, LT-53361 Kauno raj.

² VU Kauno humanitarinis fakultetas
Muitinės g. 8, LT-44280 Kaunas

One of the three main hypotheses of Positive Accounting Theory states “Ceteris paribus, the higher a firm’s debt/equity ratio, the more likely the firm’s manager is to choose accounting procedures that shift reported earnings from future periods to the current period”. This proposition is based on the statement, that a default on a debt contract is costly, so contracts that define a breach in terms of accounting numbers provide managers with incentives to choose accounting procedures that reduce the probability of a breach. They would like to choose procedures that increase assets, reduce liabilities, increase revenue, and decrease expense (i.e., are nonconservative). This hypothesis is being confirmed by empirical research conducted elsewhere, however, influence of leverage on accounting method choice has not been investigated in Lithuania. Correlation analysis indicated, that Leverage hypothesis was not supported in Lithuanian companies, because majority of firms independently from their debt/equity ratio choose income increasing accounting (depreciation of fixed assets and valuation of inventory) methods. Such a choice could be explained by unfavourable tax system for income decreasing accounting methods, also by companies’ attempts to minimise information production costs. While changing tax laws, increasing availability of companies financial accounting data, further research in this field is needed.

Keywords: accounting method choice, leverage, accounting policy.

Introduction

Financial accounting methods – the constituent of company’s accounting policy has a great impact on financial results and performance, therefore it is very useful for the users of accounting information to know which factors determine company’s accounting method choice. A big number of foreign authors investigated theoretically and empirically social, ethical and economic determinants of accounting policy choice: R. L. Watts, J. L. Zimmerman, R. L. Hagaman, M. E. Zmjewski, R. Bowen, E. Noreen, J. Lacey, E. Press, J. Weintrop, D. Skinner, A. A. Christie, L. DuCharme, D. Shores, G. L. A. Daley, R. L. Vigeland, C. J. Lee, D. A. Hsieh, V. Gopalan-krishnan, D. Stokes, T. K. LeongJ. C. Duke, H. G. HuntP. Caster, D. T. Simon, etc. Whereas, accounting methods as a part of accounting policy have been investigated by J. Mackevičius, D. Mačernienė, N. Stončiuvienė, G. Kalčinskas, G. Deveikis, K. Maniūšytė, R. Kanapickienė, V. Bružauskas, the impact of ethics on accounting policy choice has been examined by K. Maniūšytė, R. Kanapickienė. However, there are no theoretical and empirical investigations on the influence of economic determinants (e.g., company’s size, leverage, etc.).

The Law on Accounting (2001) requires the manager of each company to choose accounting policy. Whereas, accounting methods choice is very restricted by requirements of laws. Most of Lithuanian and Russian authors (J. Mackevičius, D. Mačernienė, N. Stončiuvienė, G. Deveikis, A. S. Bakaiev, L. Z. Šneidman, S. A. Nikolaieva, etc.), analysing accounting policy choice, limit themselves to practical advises trying not to depart from requirements of the laws.

Research objective: to analyse impact of company’s leverage on financial accounting method choice by testing the Leverage hypothesis.

Research object: financial accounting method choice in Lithuanian companies.

Research method: the research was performed with reference to publications. The main research method – logical analysis of scientific literature including comparison and synthesis. In order to investigate impact of company’s leverage on accounting method choice questionnaire and statistical analysis of empirical evidence were used.

Research findings are offered in the conclusions.

Assumptions of Company’s Leverage Impact on Financial Accounting Method Choice

Determinants of company’s rational accounting method choice are the main object of research in Positive Accounting Theory (further – PAT). In fact, the main purpose of the positive approach is to develop hypotheses about factors that influence accounting method choice in different companies and to test the validity of these hypotheses empirically.

PAT is based on these underlying assumptions, which form the hard core of the neoclassical economic theory:

(i) All decision-makers are motivated only by their narrowly defined self-interest and not by the public interest.
(ii) The firm is considered to be a nexus of contracts among self-interested parties.

ISSN 1392-2785 ENGINEERING ECONOMICS. 2005. No 5 (45)
ECONOMICS OF ENGINEERING DECISIONS
The manager of the company who confirms accounting policy is motivated by selfish interests, therefore according to Agency Theory he chooses the most beneficial to him accounting methods. Determinants influencing this choice are generalised in PAT hypotheses. One of the three main hypotheses of PAT – Leverage hypothesis, which explains the impact of company’s leverage ratio on accounting policy, - argues that “Ceteris paribus, the higher a firm’s debt/equity ratio, the more likely the firm’s manager is to choose accounting procedures that shift reported earnings from future periods to the current period” (Watts and Zimmerman, 1986, 1990).

The reasoning is that increasing reported net income will reduce the probability of technical default. Most debt agreements contain covenants that the borrower must meet during the term of the agreement (L. A. Daley, R. L. Vigeland, 1983), for example, a borrowing firm may covenant to maintain specified levels of debt-to-equity, interest coverage, working capital, and/or shareholders’ equity. If such covenants are violated, the debt agreement may impose penalties, such as constraints on dividends or additional borrowing. Studies by G. Whittred and I. Zimmer (1986) and D. Stokes and T.K. Leong (1987) provide evidence on the use of accounting denominated restrictive covenants in the debt issues of Australian companies. They found the lending agreements generally did not impose restrictions on the choice of accounting methods. G. Whittred and I. Zimmer (1986), in their examination of the debt covenants of public debt issues expressed in terms of accounting numbers or ratios, found that the most commonly used covenant was a debt to asset ratio restriction. A study by D. Stokes and T.K. Leong (1987) confirmed this result for convertible notes. This suggests that management could manipulate accounting results through selective choice of accounting methods, and thus possessed the ability to relax constrictive debt covenants.

According to the Leverage hypothesis, the more company violates debt agreements the more likely management adopt accounting policies to raise current earnings, or at least postpone, such violation (Press E., Weintrop J., 1990). Also managers of a company may choose such accounting procedures that maximise net income inconsistently. Then probability of default in the future is high.

Empirical Tests of the Leverage Hypothesis


Lithuanian and Russian authors analysing accounting policy and determinants of its choice limit themselves to enumeration of those factors making logical assumptions that they should influence company’s choice of accounting method. But nobody indicate company’s financial leverage as an important determinant to accounting policy choice, there are no empirical investigations testing this hypothesis.

There are only few researches analysing portfolio of the main accounting methods choices. The result of foreign research suggests the theory be developed further to increase its predictive and explanatory power (Watts R. L., Zimmerman J. L., 1986).

Empirical Test of the Leverage Hypothesis in Lithuania

Leverage has been used as a proxy for proximity to and/or cost of violation of debt covenants. The problem is that economic literature presents some methodologies of estimation of financial leverage (J. Mackevičius, D. Poškaitė, 2003): 1) ratio of liabilities and owner’s equity shows the balance of company’s financial activity, i.e. ratio shows how much liabilities fall on one litas of owner’s equity; 2) ratio of long term liabilities and owner’s equity shows how much long term liabilities fall on one litas of owner’s equity; 3) common ratio of liabilities (total liabilities/ total assets) shows which part of liabilities is used forming company’s assets (J. Mackevičius, 1994; J. Mackevičius, D. Poškaitė, 1998).

Despite differences of methodology of estimation of financial leverage, the high financial leverage ratio shows that a company frequently uses borrowed equity. The analysis (1 table) shows that common ratio of liabilities frequently is used testing the second hypothesis of PAT.

It is widely accepted to investigate depreciation of fixed assets, valuation of inventory methods and/or the portfolio of these methods choice because these methods clearly indicate which strategy – income increasing or income decreasing – is adopted by the company. It is widely accepted that straight-line depreciation and FIFO inventory methods are income increasing, accelerated depreciation and LIFO inventory methods – income decreasing methods. In most of the research only one dependence between accounting method choice and company’s financial leverage is being analysed.

The authors of this article investigate depreciation, inventory evaluation methods and the portfolio of these methods choice dependence on company’s financial leverage. Principal scheme of the research is shown in Figure.
Table 1

<table>
<thead>
<tr>
<th>Methodologies of estimation of financial leverage used in empirical research</th>
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<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Ratio of long term debt and assets</td>
</tr>
<tr>
<td>Ratio of short term debt and market value of owner’s equity</td>
</tr>
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</table>

It is a logical hypothesis that the larger the Lithuanian firm’s financial leverage ratio, the more likely the company’s manager is to choose straight-line depreciation and FIFO inventory methods.

**Company’s financial leverage** = total liabilities / total assets

**Accounting methods:**
1. Inventory evaluation method;
2. Depreciation method;
3. Portfolio of methods.

**Income increasing:**
- Straight-line depreciation method;
- FIFO inventory method.

**Income decreasing:**
- Accelerated depreciation methods;
- LIFO inventory method.

**Figure.** The Impact of Company’s Financial Leverage on Accounting Results

Foreign scientists take necessary data for analogous research from certain widely available databases (e.g., in U.S. – Compustat database), which reflects financial reporting information, accounting policy and other information related to large companies. Weakness of such research is that small firms, which do not publish publicly their financial results are not included into inquiring sample. There is no such database in Lithuania and therefore the authors selected other method of data reception – questionnaires.

Having examined the questionnaires about 2002 financial accounting data of 162 (55 micro, 52 small, 23 middle and 32 large) profit seeking limited and unlimited responsibility legal entities (sole proprietorships, limited joint stock companies and joint stock companies), the following correlation coefficients between depreciation of fixed assets, inventory methods and the portfolio of these methods and determinants of company’s financial leverage were received (2 table).

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Common correlation</th>
<th>Correlation in</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Small and medium companies</td>
</tr>
<tr>
<td>Inventory evaluation method</td>
<td>0.14</td>
<td>0.15</td>
</tr>
<tr>
<td>Depreciation method</td>
<td>-0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>Portfolio of methods</td>
<td>-0.05</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*Level of significance more than 5%*

It appeared that there was a weak correlation (0.14 and -0.04) between income-increasing inventory evaluation and depreciation methods and financial leverage ratio in Lithuanian companies, but correlation is statistically insignificant (level of significance more than 5%), so financial leverage didn’t seem to be associated with
the choice of depreciation and inventory methods and the portfolio of these methods.

There was not found statistically significant correlation between leverage and income-increasing accounting methods in small and medium Lithuanian companies and in large companies. Therefore, it showed no support for the Leverage hypothesis.

Even 91% of sample companies choose straight-line depreciation method. This is consistent with the evidence reported in Hagerman and Zmijewski (1979) and Press and Weintrop (1990). The percentage of sample companies choosing FIFO was 78%. It is considerably more (about 30-40 points) than in foreign large corporations, but it is similar to the results of Gopalakrishnan’s (1994) empirical research of small unlevered firms. Independently from company’s financial leverage, the most of Lithuanian companies choose income increasing depreciation and inventory methods (3 table).

<table>
<thead>
<tr>
<th>Accounting Methods in Lithuanian Companies</th>
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</thead>
<tbody>
<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>Number</td>
</tr>
<tr>
<td>Income increasing methods</td>
</tr>
<tr>
<td>Income decreasing methods</td>
</tr>
<tr>
<td>Other methods or/and combinations</td>
</tr>
<tr>
<td>N.a.</td>
</tr>
</tbody>
</table>

n.a. – not available.

The findings above do not support the hypothesis that the higher company’s financial leverage, the more likely the company’s manager is to choose straight-line depreciation and FIFO inventory methods. This result is not surprising for the following reasons:

1. **Lithuanian tax system** is not favourable to apply income decreasing accounting methods, i.e., *The Law on Income Tax (2001)* states that “calculating profit tax inventories are deducted using “first to – first from (FIFO)” method”, and a big number of fixed assets’ groups are allowed to use straight-line and only some of them - straight-line or declining balance depreciation methods. Additionally, up to the end of 2001 it was allowed in calculation of Income tax to use only straight-line or units of production depreciation methods. Therefore, a big number of companies choosing financial accounting method follow the requirements set up in the tax law. It is not likely that such situation will change from 2002 when in exceptional cases for tax administration purposes companies by the *Order of the Head of State Tax Inspectorate (2003)* were allowed to apply LIFO, weighted average, concrete prices or other inventory method, because they would need permission from State Tax Inspectorate and indicate reasons why they want to apply this method.

2. **Inexpensive methods.** The information production costs are likely to be important, therefore companies may be motivated to choose accounting methods that are inexpensive (such as straight-line depreciation and FIFO inventory method) to implement. Whereas, LIFO inventory and other depreciation methods are considered complex and expensive, consequently, adoption of these methods increases information production costs.

**Limitations of Research:**

Data receiving from questionnaires is not objective due to possible mistakes made while filling in the forms, and probability of ignorance. On the other hand – at this moment it is the only way to receive accounting data from small firms in Lithuania.

The bigger credibility of results would require examining accounting data and accounting methods applied not from one year but number of years as it is done elsewhere. On the other hand 61% of sample companies indicated that during past five years they did not change accounting policy and therefore additional data might have little influence to the results of this research.

**Conclusions**

This article examined company’s financial leverage ratio impact on accounting method choice and the research conducted allows formulating the following conclusions:

1. Most debt agreements contain additional covenants, for example, to maintain specified levels of debt/equity, interest coverage ratios, working capital, and/or shareholder’s equity. If such covenants are violated, the debt agreement may impose penalties. This suggests that management could manipulate accounting results through selective income increasing accounting methods, and thus possessed the ability to relax constrictive debt covenants.

2. Most of empirical research confirmed Leverage hypothesis, but there are considerably fewer scientists received contradictory results or rejected the hypothesis. Lithuanian and Russian authors have not investigated empirically the Leverage hypothesis. Nobody indicate company’s financial leverage as an important determinant of accounting method choice.

3. One of the main research limitations is the difficulty to define income increasing and income de-
creasing accounting methods unambiguously. Very often researchers use depreciation of fixed assets and valuation of inventory methods or their portfolio, because it is obvious that straight-line depreciation and inventory FIFO methods are income increasing.

4. Correlation analysis showed weak statistically insignificant relationship (about 0.14 and -0.04) between company’s financial leverage with accounting method choice in all Lithuanian companies. All correlation coefficients were not statistically significant, therefore, it showed no support for the Leverage hypothesis neither in small and medium Lithuanian companies nor in large Lithuanian companies.

5. Independently from company’s financial leverage, most Lithuanian companies choose income increasing depreciation and inventory methods: 91 % of sample companies choose straight-line depreciation and 78 % - FIFO inventory method.

6. Such accounting method choice of Lithuanian companies may be explained by several reasons: unfavourable tax system for income decreasing methods, companies’ efforts to minimise information production costs, i.e., by choosing inexpensive (straight-line depreciation and FIFO inventory) methods. While changing tax laws, increasing availability of companies financial accounting data (coming more objective data gathering ways than questionnaires), further research is needed determining influence of company’s financial leverage and other economic determinants on the accounting method choice.

References


Finansinio svporto hipotezės empirinis tyrimas Lietuvos įmonėse

Teoriniu požiūriu Lietuvoje finansinio svporto hipotezė turėtų pasitvirtinti, t.y. kuo didesnis įmonės finansinis svporto rodiklis, tuo labiau tikėtina, kad ji pasirinks tiesinį nusidėvėjimą ir FIFO atsargų įkainojimą metodą.

Keblu tai, kad ekonominėje literatūroje pateikiamai įvairių finansinių svporto apskaičiavimo metodų. Nėra aiškų, kuriame įmone pasirinktų finansinius svportus. Tai yra svarbu finansinė apskaitos politikos formulavimui, o tai reiškia, kad įmonės turėtų mokėtis savo pasirinkimo rezultatais.

Labai dažnai finansinių svporto apskaičiavimo metodų aiškinami kaip apskaitos metodų gaminiai ir jiems įgyvendinti įmonei reikalingas teikiant efektyviausias rezultatus.

Vadovai varžosi su tai, kad finansinis svporto reikšmę gali turėti įtakos įmonės pajamoms, o tai reiškia, kad įmonės turėtų turėti įspėjimą, kad jos pasirinkto metodui reikalingas ilgas laikotarpis.

Pasirašius šį straipsnį, norėčiau pateikti įdomu pavyzdį. Įmonė, kuri dažnai pasirinko finansinius svportus, turėjo įsitikinti, kad jos pasirinktas metodas yra tinkamas įmonės reikalavimams.


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