CONDITIONAL CONSERVATISM AND THE COST OF DEBT: EVIDENCE FROM CENTRAL AND EASTERN EUROPE

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Abstract

This study attempts to link the cost of debt to observed levels of accounting conservatism. Namely, conservative earnings reflect bad news more quickly than good news. Therefore, conservatism causes more timely recognition of losses than gains and improves quality of accounting information in context of corporate governance and loan agreements. Timely loss recognition increases efficiency of debt contracting and provides useful information to creditors. Further, conservative accounting limits the likelihood of inappropriate dividend payments and enables debt holders to use their control rights more quickly. Accordingly, lenders should reward companies that choose more conservative accounting with lower cost of debt. Level of conservatism is measured by asymmetric persistence of positive and negative earnings changes. Empirical evidence of the relation between conditional conservatism and debt cost is provided through the sample of listed companies from 17 Central and Eastern European countries in succession from 2003 to 2010, using panel data analysis.

Key words: *Conditional Conservatism, Earnings Quality, Cost of Debt, Financial Reporting*

1. INTRODUCTION

The aim of this paper is to examine the relation between companies' conditional conservatism and the cost of debt. According to Basu (1997), conservatism can be defined as accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. In accordance with principle of prudence, conservative accounting system recognizes potential decreases in income or assets well before they are realized, but postpones the recognition of income increase until it is realized or is sufficiently certain. Consequently, timely loss recognition and deferred gain recognition result in the lower persistence of earnings in bad news periods relative to good news period. Good news (gains) in earnings is more persistent because the capitalized value of good news is partially recognized in current earnings and partially is deferred in subsequent earnings.

In contrast, more timely recognition implies transitory time-series components of earnings because all revisions in expected future cash flows are immediately included in current earnings. Accordingly, level of conservatism can be measured as asymmetric persistence of positive and negative earnings changes.

Asymmetric timely recognition of losses relative to gains is often labeled as conditional conservatism, ex post conservatism or earnings conservatism. This paper focuses on conditional conservatism as it is considered to improve usefulness of accounting information, especially in the context of corporate governance and loan agreements. Namely, in accordance with postulates of positive accounting theory (Watts and Zimmerman, 1990), managers have incentive to increase level of reported earnings in order to maximize amount of their compensations. Conditional conservatism or timely loss recognition acts as an instrument of corporate governance in preventing management manipulations with reported earnings numbers. Kothari et al. (2009) point out three most important aspects of conservatism in reducing agency problems between shareholders and managers. First, as managers' compensations are related with current performance, they are reluctant to report bad news. Conditional conservatism introduces obligation for the management to recognize bad news as it becomes available even if it does not meet the objectivity and verifiability thresholds that otherwise apply. Second, timely loss recognition mitigates agency problems associated with managers' investments decisions. The ability to defer loss recognition provides managers an incentive to continue operating investments with negative net present values to avoid reported losses on sale or abandonment (Ball and Shivakumar; 2005). This agency problem is reduced by timely loss recognition. Third, by delaying bad news, managers could compensate themselves excessively, which implies significant cost for shareholders. On the other hand, application of timely loss recognition principle limits management overpayments.

Primary focus of this research is to analyze the implications of conditional conservatism on loan agreements and consequently on cost of debt. It is often considered that debtholders demand conditional conservatism as a precondition to lending. Namely, timely loss recognition improves debt agreement efficiency by sending a more timely signal of default risk to debtholders and by allowing them to take protective actions. Zhang (2005) states that examples of protective actions include: accelerate the debt, reduce the borrowing base, enhance the security and adjust the interest rate to reflect the underlying risk. Besides, conditional conservatism also mitigates the potential risk of wealth transfer by reducing a likelihood of inappropriate dividend payments. Therefore, this paper assumes that lenders will offer lower interest rates to those borrowers who have more conservative financial reporting.

This research contributes to the existing literature on conditional conservatism and debt cost by examining the benefits of conditional conservatism in bank-oriented code-law economies with inactive debt markets. So far, research in this area is mostly focused to market-oriented common law countries such as United States of America, Australia or United Kingdom. Moreover, no study was undertaken to examine the relation between debt cost and conservatism using asymmetric persistence of positive and negative earnings changes as a measure of conditional conservatism. Furthermore, in contrast to previous research this study uses panel data methods as they are more appropriate for cross-sectional time series structure of the data.

The paper proceeds as follows. Section 2 provides theoretical background for the research and the review of the previous relevant literature. Section 3 describes the sample, data and research design. Section 4 presents the main empirical results and the conclusions appear in the last section.

2. LITERATURE REVIEW

Since Basu (1997) introduced the concept of earnings conservatism, it has become the subject of an active field of empirical research in accounting. There is a variety of different measures of conservatism in existing accounting literature. Wang (2010) summarized the most frequently used measures of conservatism: Basu's (1997) asymmetric timeliness of earnings measure; Ball and Shivakumar's (2005) asymmetric-cash-flow-to-accruals measure; Penman and Zhang's (2002) hidden reserves measure; Givoly and Hayn's (2000) negative accruals measure; other measures (the Market-to-Book ratio, earnings persistence measure, VAR based measure, skewness of earnings, etc.).

Basu's reverse earnings-return regression is currently the most frequently employed measure of accounting conservatism in the accounting literature and has the greatest impact on the literature (Wang, 2010). He proved that, because of the conservative bias in accounting, negative stock returns, which reflect downward adjustment in economic income, have a higher association with earnings than positive stock returns, i.e. upward adjustment in economic income. Therefore, under conservatism economic losses are reflected in earnings faster than economic gains. Basu also found evidence that conservative principles in accounting cause asymmetric persistence of positive and negative earnings changes. Namely, more persistence means that less current value relevant news is reported in current earnings and more of it will be reported in future earnings. Consequently, conservatism results in the lower persistence of earnings in bad news periods relative to good news periods (Basu, 1997).

Many empirical studies have tried to quantify the extent of accounting conservatism and to identify the main benefits of conservatism. Watts (2003) concludes that existing evidence suggests how

accounting conservatism is most consistent with contracting or litigation explanations and in less extent consistent with tax and regulatory explanations.

Important stream of recent empirical studies tests whether conservatism is beneficial for debt contracting. These papers consider association between accounting conservatism and both the interest rate charged on the debt and the extent of debt in the capital structure. Thus, Ahmed et al. (2002) performed a research on the sample of US companies and proved that conservatism reduces the cost of debt, consistent to the debt-contracting hypothesis of conservatism. Zhang (2005) also conducted research on US companies and reported that conservatism benefits lenders because it accelerates debt covenant violations and provides a timely signal of default risk. Consequently, borrowers with more conservative accounting are rewarded with lower interest rates. Bauwhede (2007) examined differential impact of conditional and unconditional conservatism on company credit ratings using a large sample of American listed companies over the period 1999-2003. Results showed that credit ratings of companies in industries with more conditional conservatism are significantly more favorable and thus the costs of debt are lower. Li (2010) studied contracting benefits of accounting conservatism on international debt and equity markets. His results also proved that companies domiciled in countries with more conservative financial reporting systems have significantly lower cost of debt and equity capital.

To summarize, it can be concluded that majority of conducted studies about association of conditional conservatism and debt cost are performed in common law countries such as US, United Kingdom or Australia. Moreover, Giner and Rees (2001) and Lara et al. (2005) state that level of conservatism is significantly different between code law and common law countries. Also, there are no studies that explore association between debt costs and asymmetric earnings persistence as measure of conditional conservatism. Most of previous literature uses measures of conservatism that are based on data from stock markets such as Basu's earnings-returns reverse regression. As stock markets in Central and Eastern Europe countries are often inactive, market data can cause results to be biased. Further, Dietrich et al. (2007) argue that Basu's reverse regression measure is biased and that studies employing asymmetric timeliness tests cannot be interpreted as providing evidence of conservatism. Thus, this study uses earnings persistence measure of accounting conservatism instead of frequently used reverse regression measure.

3. DATA AND RESEARCH DESIGN

This section explains the sources of empirical data and estimation procedures in testing the association between level of conditional conservatism and debt costs. Conducted research is based on main

assumption that companies with low level of conditional conservatism will have high debt costs. Empirical verification of working hypothesis is provided by using panel data analysis techniques.

3.1. Sample selection

Empirical research is conducted on the sample of public listed companies from 17 Central and Eastern European countries during the period from 2003 to 2010. Data set necessary for the research is collected from Amadeus database (Bureau van Dijk). Banks, investment funds and other financial institutions are not included in the sample.

Table 1: Sample selection process

Steps	Criteria	Number of companies
1.	Legal status: Active companies	16,116,651
2.	Legal form: Public	883,425
3.	Region: Central and Eastern Europe	217,832
4.	Listed companies	6,802
5.	Category of companies by size: Very large & large companies	6,010

Source: estimated according to data from Amadeus Bureau van Dijk (2012)

Table 2: Sample structure by country

Country	Company-year observations
Bosnia and Herzegovina	4,350
Bulgaria	2,253
Croatia	1,224
Czech Republic	69
Estonia	89
Latvia	193
Lithuania	241
Macedonia	100
Moldova Republic	2,808
Montenegro	173
Poland	2,670
Romania	6,237
Russian Federation	4,620
Serbia	10,102
Slovakia	515
Slovenia	281
Ukraine	1,712
Total	37,637

Source: estimated according to data from Amadeus Bureau van Dijk (2012)

The beginning sample consists of 16,116,651 active European companies in Amadeus data base. In the first step of sample selection process, we chose only the public companies, because the previous research (Ball and Shivakumar, 2005) found evidence of significant difference in level of conservatism between public and private companies. After that, we restricted our sample only to listed companies from Central and Eastern Europe. Final criterion in the sample selection was the company size. We included only the large and very large companies because a number of previous studies identified size of company as the important factor that affects level of conditional conservatism (e.g. Ball and Shivakumar, 2005; Zhang, 2005; Amort-Tapia et al., 2009; Ball et al., 2011; Khan and Watts, 2009). Complete sample selection process is presented in Table 1.

The final sample consists of total of 6,010 companies or 37,637 company-year observations. Detail structure of selected sample by 17 Central and Eastern European countries is presented in the table 2.

Selected companies are observed over the time period from 2003 to 2010 and distribution of observations by each year is show in the table 3 below.

Table 3: Sample structure by year

Year	Company-year observations
2003	4,763
2004	4,848
2005	5,052
2006	5,120
2007	5,598
2008	5,736
2009	5,309
2010	1,211
Total	37,637

Source: estimated according to data from Amadeus Bureau van Dijk (2012)

It can be seen from the table 3 that a number of selected companies is relatively equal over the observed time period with only exception of 2010. Also, there is a steady decrease in number of companies after 2007, probably caused by global financial crisis.

3.2. Model specification

To test the main hypothesis that companies with low level of conditional conservatism have high debt costs, this study extends Basu's (1997) and Ball and Shiavakumar (2005) approach in measuring the level of conditional conservatism by asymmetric persistence of earnings changes. Namely, Basu (1997) argues that under conservative accounting, bad news is recognized in earnings immediately,

contrary to good news. Consequently, it causes increase in earnings due to good news to be more persistent. Further, for companies with conservative accounting decrease in earnings in current period due to bad news is less persistent and more likely to reverse in future periods. So, negative correlation can be expected between decrease in earnings in the current and future periods. This asymmetric persistence of earnings changes is expressed in the following model (Basu, 1997):

$$\Delta NI_t = \beta_0 + \beta_1 * NEG_{t-1} + \beta_2 * \Delta NI_{t-1} + \beta_3 * NEG_{t-1} * \Delta NI_{t-1} + \varepsilon_t \tag{1}$$

Where ΔNI_t is change in net income from year *t-1* to *t*, scaled by beginning book value of total assets, ΔNI_{t-1} is change in net income from year *t-2* to *t-1*, NEG_{t-1} is a dummy variable that takes the value of 1 when ΔNI_{t-1} is negative and zero otherwise and ε_t is unobserved zero-mean error term.

According to Ball and Shivakumar (2005), positive changes in net income are persistent and tend not to reverse, so the implication is $\beta_2 = 0$. Also, application of conservative accounting causes income decreases to be transitory or to reverse, which implies $\beta_2 + \beta_3 < 0$. Finally, if economic losses are recognized in more timely manner than gains than it should be $\beta_3 < 0$.

This study extends the previous model by including debt cost variable, considering the examination of level of conditional conservative for companies with high debt costs. Thus, the following version of the model (1) is modified to allow differences between high debt cost companies and other companies:

$$\Delta NI_{it} = \beta_0 + \beta_1 * NEG_{it-1} + \beta_2 * \Delta NI_{it-1} + \beta_3 * NEG_{it-1} * \Delta NI_{it-1} + \beta_4 * HDC_{it} + \beta_5 * HDC_{it} * NEG_{it-1} +$$
$$\beta_6 * HDC_{it} * \Delta NI_{it-1} + \beta_7 * HDC_{it} * NEG_{it-1} * \Delta NI_{it-1} + a_i + \varepsilon_{it} \tag{2}$$

where:

ΔNI_{it} is change in net income from year *t-1* to *t*, scaled by beginning book value of total assets;

ΔNI_{it-1} is change in net income from year *t-2* to *t-1*;

NEG_{it-1} is a dummy variable that takes the value of 1 when ΔNI_{t-1} is negative and zero otherwise;

HDC_{it} is a dummy variable that takes the value of 1 if company's debt cost[1] is higher than debt cost of 75% observations in the sample and zero otherwise;

a_i is individual firm-specific effect which is assumed to be time invariant;

ε_{it} is unobserved zero-mean error term.

Predictions concerning the level of conditional conservatism for the whole sample are based on evidence from previous research (Basu, 1997; Ball and Shivakumar, 2005; Amor-Tapia et al., 2009).

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[1]Debt cost is calculated as the ratio of company's paid interest to interest-bearing debt (loans and long term debt from BvD Amadeus data base) similar to previous relevant research (e.g. Li, 2010).

So, this study predicts persistent positive changes of accounting income ($\beta_2 = 0$) and timelier recognition of economic losses than gains, i.e. transitory negative changes of net income ($\beta_3 < 0$ and $\beta_2 + \beta_3 < 0$). Further, in accordance with stated hypothesis, it is expected that companies with high debt costs will have lower level of conditional conservatism. Companies with high debt costs are expected not to have timelier recognition of losses than gains and not to have transitory decreases of net income. The implication is $\beta_7 \geq 0$. No predictions are offered for differences in gain recognition between high debt cost companies and low debt cost companies (β_6), nor for intercept and incremental intercept coefficients (β_0, β_1, β_4, β_5).

Estimation of proposed model and verification of stated hypothesis is provided by using panel data analysis techniques. Most of the previous research on accounting conservatism employs ordinary least squares estimator and treats observations as being serially uncorrelated with homoscedastic errors for companies across time. Recent literature (Grambovas et al., 2006; Huang et al., 2011) emphasizes the importance of allowing for company heterogeneity in measuring accounting conservatism and the fact that panel methodology can provide more reliable estimates for dataset that contains company-year observations. Huang et al. (2011) point out that pooled OLS regression model ignores company heterogeneity which can cause an omitted variable bias in the parameter estimates of the regression model and thus lead to an inaccurate conclusion about the extent and trend in accounting conservatism.

4. EMPIRICAL RESULTS

This study adopts a panel-data methodology to estimate the relation between level of accounting conservatism and debt costs. Fixed-effects (FE) estimator, random-effects (RE) estimator and Arellano-Bond estimator are compared in order to identify the most appropriate panel method for the estimation of the research model.

Estimated model with Arellano-Bond dynamic panel GMM estimator is considered inappropriate because results prove that dependent variable does not depend on its own past realizations. Performed postestimation specification tests (Sargan test and Arellano-Bond test) also indicate that dynamic panel model is not suitable. Finally, after estimation of FE and RE model, Hausman test is conducted in order to examine the appropriateness of a FE and RE models. The Hausman test compares two estimators assuming RE estimator is fully efficient under null hypothesis. Results from performed test (χ^2=105.42; p=0.00) lead to strong rejection of the null hypothesis that RE provides consistent estimates and indicate that FE estimator is the more appropriate to use. Table 4 presents estimated results from FE model.

Performed model uses robust standard error clustered by company to control for heteroskedasticy because the modified Wald test for heteroskedasticity in fixed effect regression model provided evidence on presence of heteroskedasticity (p=0.00).

Table 4: Estimation results for fixed effect regression model

$\Delta NI_{it} = \beta_0 + \beta_1*NEG_{it-1} + \beta_2*\Delta NI_{it-1} + \beta_3*NEG_{it-1}*\Delta NI_{it-1} + \beta_4*HDC_{it} + \beta_5*HDC_{it}*NEG_{it-1} + \beta_6*HDC_{it}*\Delta NI_{it-1} + \beta_7*HDC_{it}*NEG_{it-1}*\Delta NI_{it-1} + a_i + \varepsilon_{it}$

Variable	Predicted sign	Coefficient	t-stat	p-value
Intercept (β_0)	?	-0.019***	-3.81	0.000
NEG_{t-1} (β_1)	?	0.024*	1.67	0.095
ΔNI_{t-1} (β_2)	0	0.000	1.12	0.263
$NEG_{t-1}*\Delta NI_{t-1}$ (β_3)	< 0	-0.502***	-3.14	0.002
HDC_t (β_4)	?	0.019*	1.81	0.070
HDC_t*NEG_{t-1} (β_5)	?	-0.052**	-2.52	0.012
$HDC_t*\Delta NI_{t-1}$ (β_6)	?	-0.300***	-4.00	0.000
$HDC_t*NEG_{t-1}*\Delta NI_{t-1}$ (β_7)	≥ 0	0.074	0.24	0.814
R-square (%)	2.10			
Number of obs	11,210			

*Notes:*statistically significant at the 0.1 level; ** at 0.05 level; ***at 0.01 level respectively*
Source: estimated according to data from Amadeus Bureau van Dijk (2012)

The results from Table 4 report the existence of asymmetric persistence of positive and negative net income changes. There is a clear evidence of transitory loss but not gain components for all companies in the sample. The β_2 coefficient on changes of net income from previous period is not significantly different from zero, as predicted. According to Ball and Shivakumar (2005) this indicates an absence of either continuation or reversal of income increases. Therefore, level of income is considered to be persistent because positive changes in income have no momentum. On the other hand, there is statistically significant negative coefficient β_3 on negative changes of net income from previous period. Also, the sum of β_2 and β_3 is negative as expected ($\beta_2 + \beta_3$ = -0.502). Thus, it can be concluded that negative changes of net income are transitory or tend to reverse. Further, this suggests that economic losses are recognized in more timely manner than economic gains and can be seen as an evidence of accounting conservatism.

Main research hypothesis expects that companies with high debt costs will have less conservative accounting. Namely, conservatism causes more timely recognition of losses than gains which improves the quality of accounting information in context of corporate governance and loan agreements. So, debtholders are likely to reward borrowers with more conservative accounting by reducing the interest rates (debt costs), and *vice versa*. Therefore, coefficients on changes of net income are expected to be substantially different for high debt cost companies than for the whole sample. Presented results show

that coefficient β_7 is not significantly different from zero. This means that decreases of net income are more persistent. Also, negative sign on β_6 coefficient suggests that high cost companies have transitory income increases. Overall, these findings are consistent with hypothesis that higher debt cost is related with lower level of accounting conservatism.

5. CONCLUSION

This paper investigates the benefits from conditional conservatism for lenders and for borrowers in debt contracting process. It is assumed that debtholders will reward more conservative borrowers with lower interest rates and reduced debt costs. Namely, lenders prefer conservative accounting and timely loss recognition because it improves debt agreement efficiency by sending a more timely signal of default risk and allows them to take protective actions. Empirical findings in this paper prove that companies with higher debt cost have lower level of conditional conservatism, as it is expected in hypothesis.

Contribution of this study to accounting literature can be found in several different aspects. First, to the best of our knowledge this is the first research that analyzes the relationship between debt costs and conditional conservatism measured by earnings persistence measure. Prior studies generally use market-based measures of conditional conservatism. Also, research in this area is mostly limited to market-oriented common law countries and this paper is focused on the sample of companies from code law bank-oriented countries of Central and Eastern Europe. Moreover, recent studies emphasize the importance of allowing for firm heterogeneity in measuring accounting conservatism. Therefore, this paper uses panel data analysis methodology as it is more appropriate for cross-sectional time series structure of the data. Results of this paper could be of interest not only to academics but also to standard setters and regulators in the process of improvement of financial reporting quality.

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