

Accounting conservatism in transitional economies

Evidence of the influence of institutional factors in Eastern Europe



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Abstract

Prior research show that accounting conservatism exists in mature economies. However there is not too much research about accounting conservatism in transitional economies. This paper analyses accounting conservatism in Eastern European countries which joined already European Union. Furthermore, the influence of institutional and political factors on the financial reporting is analyzed. I research the levels of unconditional and conditional conservatism in Eastern Europe and compare them with Western European results. I use the market-to-book ratio and Basu model in order to measure accounting conservatism. I did not found evidence that there is conditional conservatism in Eastern Europe. I analyzed the Czech Republic, Hungary and Poland separately, the result was that (at the 1% significance level) there was conditional conservatism only in Poland during the analyzed period. I found significant evidence proving my expectations regarding influence of quality of law, security law and risk of expropriation on conditional conservatism.

Key words: *accounting conservatism, institutional differences, transitional process*

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Chapter I. Introduction

Most of the post-communist European countries have already joined the European Union. What is important is that the European Union intends to harmonize accounting regulations across member countries by implementing International Accounting Standards. However, prior researches prove that the differences despite common regulations remain due to political and institutional factors specific to certain countries. The tradition of accounting in post-communist countries is different from that of free economies. The objective of that accounting was to deliver information to the state; however the focus was more on quantities than quality. The concept of true and fair view didn't take place (Martikainen and Tilli; 2007; 2). There is a conflict between the objectives of communist accounting (aiming to deliver information to a state administration) and the informational role of accounting on capital markets. Martikainen and Tilli (2007, 4) describe some characteristics of accounting under a communist regime like, that it had unimportant, unsophisticated role. It was a routine and administrative profession, where the accountant was more like a bookkeeper. Because there was no a free market but centrally planned regime, accounting was rather for recording in a very simple and inflexible way that reality for purposes of state and not market needs. Despite the legislative changes many aspects of that accounting still remains in the current accounting practices of transitional economies.

At present, all European Union countries including these with a communist past are using International Financial Reporting Standards. The objectives of financial statements are included in Framework for the Preparation and Presentation of Financial Statements. According to the framework "the objective of financial statements is to provide information about the financial performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions". The International Accounting Standard Board (IASB) in its Framework specifies qualitative characteristics, which determines the usefulness of financial statements. There are four principles: understandability, relevance, reliability and comparability. Understandability means that users even if they do not have professional knowledge they are able to understand financial statements if they study the information with reasonable diligence. It does not mean that companies can explain an exclusion of complex information which is relevant for economic decision-making due to the lack of professional knowledge of certain users. As for relevance, information which is not relevant to the decision-making process is also not useful for users. It is said that information is relevant if it helps to evaluate past, present or

future events or confirms, or corrects, their past evaluation. Information has to play a predictive and confirmatory role, what means that based on past and present information users are able to predict the future, at the same time these predictions can be confirmed later on by comparing them with present information. Reliability, information to be useful, has to be reliable which means that it is free from material error and bias and can be depended on by users to represent faithfully that which it either purports to represent or could reasonably be expected to represent. Even if information is relevant for decision makers but it is not reliable it means users can not use it in the decision-making process, so it is not useful. To consider information as reliable, it has to be faithfully represented, neutral, substantive over time, prudent and complete. The last characteristic of useful financial statements is comparability. Users must be able to compare financial information over time and compare different companies with each other. It means that financial statements have to be prepared in a consistent way throughout an entity and over time, but also in a consistent way for different companies. Users have to be informed by companies which accounting policy is used in preparing financial statements, any changes to this policy and the effects of these changes.

Conservatism in accounting has been researched for many years. The results regarding Western European countries and the United States prove the existence of conservatism in accounting. In contrast to the West, the research of Jindrichovska and McLeay (2005) shows that there is no conservatism in the Czech Republic. The explanations for this phenomenon can be compared to other post-communist countries. The recent research of Martikainen and Tilli (2007) shows the results of conservatism's analysis for 10 post-communist countries like Bulgaria, Croatia, the Czech Republic, Latvia, Lithuania, Romania, Russia, Serbia, Slovakia and Ukraine. They found that for Serbia there is no conservatism and the statistical result for the Czech Republic is not significant. The results show that conservatism exists in Bulgaria, Croatia, Lithuania, Poland, Romania, Russia and Slovakia, but in Latvia at a statistically significant 10% level. The conservatism coefficient is not significant in the Czech Republic and Ukraine. The results for Serbia were surprising, indicating not a lack of conservatism, but a very aggressive attitude towards loss recognition. Despite this research, many aspects are not yet elaborated. Not all post-communist countries were subjects of the research and institutional factors which can influence conservatism are not fully explored in the case of these countries.

The objective of research is

To analyze conservatism in accounting in post-communist countries of Central and Eastern Europe , which are members of the European Union and to identify institutional factors which have influence on conservatism in these countries*

The main research question is:

Is there accounting conservatism in Eastern Europe?

The research subquestions are following:

- Ⓢ Does accounting conservatism differ across Eastern Europe?
- Ⓢ Do institutional factors influence accounting conservatism in Eastern Europe?
- Ⓢ Does the transitional process influence accounting conservatism in Eastern Europe?

Institutional and political factors can impact the quality of information in financial reporting, what means that investors, regulators and other stakeholders can be misled, since they might assume, that a harmonization of regulations leads to delivering the same quality of information. However, it is more complicated since, political and institutional differences remain, and thus research of these issues in post-communist countries is relevant for stakeholders and policymakers. Research of these institutional factors is important in order to check if they can influence financial reporting approaches. Since, there is not too much research about post-communist countries, which seems to be even more interesting due to the transitional character of the economy, it is crucial to explore factors which have influence on their accounting approaches in financial reporting. Just recently the accounting conservatism in transitional economies like Eastern European countries started to be a subject of research. Still many countries are left without answer about existence of accounting conservatism. My research contributes to prior ones because of couple of reason. First of all the Eastern European countries were rarely the subject of an analysis, secondly I use a Basu model in my analysis, what was not done before for these group of countries (except for the Czech Republic in the paper of Jindrichovska and McLeay (2005)), third I explore the influence of institutional factors on accounting conservatism in this region (only

* For simplicity sake, I call the Central and Eastern Europe shorter as Eastern Europe. I also use sometimes exchangeable the term: post-communist countries. By all these terms I mean post-communist countries, which joined already EU

impact of transitional process was investigated by Martikainen and Tilli (2007)). The results of this paper are important for all users of financial reporting to give them the possibility to assess the quality of accounting figures, especially in debt and management employment contracts. Since debt and management employment contracts are based on accounting figures, the parties of contracts have to take into account that, despite having the same regulation, accounting numbers can be influenced by institutional factors. These results should be taken into account also by policy makers in order to create relevant regulation, which overcome the factors which bias the accounting despite of common regulations.

I expect to find evidence that accounting conservatism is higher in Western Europe than Eastern Europe for both unconditional and conditional conservatism. Further on I believe that institutional and political factors play a crucial role in determining the level of conditional conservatism in Eastern Europe. I expect that countries with higher progress in transitional process, higher equity market exposure, better quality of law and security law, as well higher risk of expropriation and tax burden encourage asymmetric timeliness of earnings in Eastern Europe.

In this paper I use two methods: market-to-book ratio and the Basu model, since Roychowdhury and Watts (2004), Ball and Kothari (2007) and Givoly and Hayn (2000) found that the resultant evidence can differ due to model used. Firstly, the research focus on the comparison between Western and Eastern European countries in the level of conservatism, then conservatism is measured individually for Poland, Hungary and the Czech Republic, lastly the institutional factors are embodied in the Basu model in order to check their influence on the accounting approach in financial reporting.

I found evidence that there is unconditional conservatism in both regions but it is higher in Western Europe than Eastern Europe. The results for conditional conservatism show that there is no conservatism in Eastern Europe but there is in Western Europe. Three Eastern European countries were analyzed in details and I found that only in Poland for whole analyzed period there is conditional conservatism. There is no evidence about existing conditional conservatism in Czech and Hungarian accounting was conservative in period 1999-2007. I found evidence proving my expectations regarding influence on conditional conservatism of quality of law, security law and risk of expropriation. I found significant evidence, which contradict my expectations regarding transitional progress and tax burden; however I found justifiable reasons for these outcomes. I did not find significant evidence regarding my hypothesis about influence of equity market exposure.

This paper after an introductory chapter presents information about institutional settings. The reasons why Eastern European countries are different from Western European countries is explained in this part. The characteristics of communist accounting and the problems with which these countries had to struggle during the transformation process are introduced in this section. Third chapter deals with the theoretical background of conservatism. There are different types and definitions of conservatism, which were explained in this section. The measures and incentives for conservatism were also presented. Chapter IV gives a summary of important research in the field of conservatism. First of all, generalities about methods, trends and incentives for conservatism are mentioned. A major part of this section presents papers, which analyzed the influence of institutional and political factors on conservatism. This part had a significant influence on the development of the Chapter V and VI, where the hypothesis and research design are described. The hypothesis section is divided into two parts, which first focus on a comparison of the level of unconditional and conditional conservatism in Western and Eastern Europe. The second part deals with the influence of institutional factors on the level of conservatism in Eastern Europe. Chapter VI “Research design” develops methodology for the stated hypothesis in the previous part. The methods which I use in the paper are market-to-book ratio, Basu model and Basu model incorporating institutional variables. Chapter VII gives the outcome of my analysis. First of all, there are the results concerning unconditional and conditional conservatism in Western Europe, Eastern Europe, the Czech Republic, Hungary and Poland. The results show that the level of both conservatisms is higher in Western Europe than Eastern Europe. Further on, I found significant evidence that there is unconditional conservatism only in Poland, but not in the Czech Republic and Hungary for period 1994-2008. The last part of the paper is a Chapter VII “Conclusions and Summary”, where I regard to my research questions and objectives. I summarize the findings and conclude whether they confirm my hypotheses. In this chapter the limitations of research and the possibilities of further research are described.

Chapter II. Institutional settings

In this chapter I will give an introduction to the reality of a command economy and communist accounting. The major differences between a market economy and a command economy will be examined in detail throughout this chapter. The transitional process and the main problems which post communist countries had to overcome will also be described. In addition to these subjects I described the impact of the previous regime on current accounting practices in Eastern Europe.

After the II World War countries in Central and Eastern Europe implemented socialist principles in their economies. This situation lasted for a couple of decades until the late 80's, when a revolution took place and the Soviet Union was split into pieces. Since that time Central and Eastern European countries decided, that capitalism is a more efficient system than communism and they started to implement it in their economies. Countries which are considered post-communist countries, constituted the former Soviet Union itself (Russia, Ukraine, Belarus, Moldova and the Baltic States of Estonia, Latvia and Lithuania), in this group of post-communist countries are also states which were not part of the Soviet Union however they remained under Soviet influence (Poland, the Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Albania, Serbia, Croatia, Bosnia, Slovenia and Macedonia). The formal decision concerning reformation created the need for many reforms and fundamental changes in their institutional settings in order to become real capital markets.

II.1 Communist accounting

Accounting in former communist countries from Central and Eastern Europe was mainly based on the German system known as the Schmalenbach's chart. The characteristics of this system were that, the capital market was not developed and the main purposes of accounting were creditor protection and tax collection. Despite this, Schmalenbach's chart was dedicated for the market economy; it was possible to adapt it for a centrally planned economy in the 30's and 40's, Nazi Germany, Vichy France and the Soviet Union. Activities were regulated according to Commercial codes based on the German model, which was based on French Napoleonic Code (Nobes Parker, 2002, 322).

Communist accounting differed significantly from that of market economies. The main purpose was to reflect volumes in order to enable planning at a higher level of government and accountability (which means that managers are accountable for resources which are

under their control) was unimportant as opposed to market economies, where accountability is a basic principle of accounting. Traditionally, three elements of accounting are distinguished: bookkeeping, costing and financial reporting. In communist accounting the bookkeeping was the most important. The Central Statistical Office and Ministry of Finance were the bodies determining the accounting policy (form, content and frequency).

The financial reports basically had to fulfil the purposes of:

- Ⓢ macroeconomic control and statistics for the Central Statistical Office
- Ⓢ financial policies and control by the Ministry of Finance
- Ⓢ control by national banks
- Ⓢ control by supervisory state agencies (Garrod and McLeay, 1996, 15-16)

In a command economy there is no concept of true and fair value. The financial reporting outputs go to a higher level in the hierarchy instead of to outside parties. Because accounting had to only report to the state, it was restricted by many regulations and was inflexible, accounting was reduced, in fact more to bookkeeping, which was performed by clerks and not financial reporting typical for a market economy. It is important to mention that accounting in Hungary and Poland was relatively flexible (Nobes and Parker, 2002, 323). The reduction of accounting to only a bookkeeping role had important consequences. There was a lack of educated and knowledgeable accountants in post communist countries, who were aware of changes in accounting in Western Europe, and this was a reason why for these countries the change from a command economy to a market economy in terms of accounting was even more challenging (Bailey, 1995, 600).

A good overview of the differences between accounting in capital markets and command markets in terms of objectives, rules and other characteristics is shown in the table below.

Table 1. British, German and Soviet-influenced accounting model

	British model ‘First wave’ industrial nation; e.g. Britain	German model ‘Second wave’ industrial nation’; e.g. Germany	Soviet-influenced model
<i>Macro- vs. micro orientation</i>			
State Policy	Laisses faire (Adam Smith)	Protectionism (Friedrich List)	Accelerated industrial development (Stalin)
State role	Elimination of monopoly Preservation of competition (accounting a private affair)	Promotion of industry (accounting of state interest)	Management of industry (accounting determined by state)
Financing of industry	Private investors	Banks	State budget
Regulation of accounting	Private (no chart of accounts)	Law (state) (chart of accounts)	State (law) (plan of accounts)
<i>Accounting Policy choices</i>			
Accounting Policy	Business community considerations	Public policy considerations	Central authority needs
Profit	Available for dividend	Available for taxation	Appropriated to state budget
Financial statements	Private investor needs	State and banks’ needs	Central planning and control needs
Equity capital Policy	No secret reserves	Supplementary capital creation (creditor protection)	Assets matched to funds
Aim	Assessment of useful economic life, straight-line	Tax-advantageous router (entourage investment) Reducing balance	Cash outflow from enterprise to state budget
Rubric	True and fair for private investors	Legal compliance	Custodianship of state resources
General goal	Economic	Legal	Patriarchal

Source: Garrod and McLeay (1996, 62, 66)

II.2 Command economy and market economy

In a command economy, the majority of the companies were state-owned enterprises and private entrepreneurship played an irrelevant role. The state was the central body of the economy, by controlling every decision of companies. On the other hand, private ownership constitutes the market economy and the state has a side role, creating frameworks for the economy like regulations, laws, standards and taxes. The main change, which post-communist countries had to make, was privatizing state-owned enterprises. On top of that, institutions typical for market economies had to be established from scratch, as there were no

capital markets; banks were not developed and the ones that existed were owned by the state, there was no adequate regulation in the area of commercial law. The characteristics of a command economy meant that there were no incentives for conservatism in financial reporting. State-owned companies were financed by the state in the previous regime, however after changing they had to find financial sources in banks or the capital market.

Bailey (1995) has aptly described the situation of post communist countries at the beginning of the reform period. One of the most important characteristics of communist countries was that prices were controlled and dictated by the state; this was also the reason why in accounting, the volumes and production quantities played the primary role and not values. The transitional process allowed prices to be dictated by demand and supply. Due to this rapid process, these countries faced a very high rate of inflation at the beginning of 90's. Another problem was that the institutional settings (commercial banks, financial institutions, stock exchange, trading and communication networks) were absent or inefficient. The main reason for inefficient markets was state ownership of enterprises. In a command market major ownership was in the hands of the state. High level of corruption was characteristic for the beginning of this period where institutional frameworks were defective. There was a lack of skilled and experienced personnel, with knowledge of the market economy, the same applied to the auditing and accounting professions. Accounting which was, in the previous system, a tool of direct control over companies, became a tool of indirect control for tax purposes and the collection of national statistics. Copies of required financial statements were sent to institutions like the tax office, national statistical office and the court of registration. There was no requirement at the beginning to make information available to the increasing number of shareholders (Bailey 1995, 603-604).

The beginning of 90's was the time when most of the reforms were conducted and the prices started to be dictated by the market (in Poland prices increased five fold in 1990, and 60% in 1991)*. Many of the basic structural foundations of market economies have been put in place in most countries. These include bankruptcy procedures, competition policy and anti-monopoly regulations, improvements in accounting standards, and legislation for regulating financial markets. (International Monetary Fund, *Transition Economies: AN IMF Perspective on Progress and Prospects* (2000)). At the beginning of the period most firms were state-owned but thanks to the reforms conducted then, a majority of companies are

* www.stat.gov.pl

privately owned entities in Central and Eastern Europe (in Poland there was more than 8000 state-owned companies in 1990, while in 2007 only about 600). The Czech Republic was seen as the most successful in conducting the privatization of state-owned enterprises. However after a couple of years it seemed that the gradual method of privatization, which was implemented in Poland, was more successful, because first the regularity had been put in place and then the process of privatization was implemented (Schroder 2001). The important reform regarded the establishment of a banking system and capital market, which are the source of capital (either equity or debt). The banking system in the analyzed countries was state owned and did not fill the function which is assigned to them in the market economy. Because banks were difficult to establish by domestic entities due to high capital requirements, most banks there are foreign banks. For example in Poland at present there are no more state-owned banks, almost 90%* (December 2008) of financial activities are conducted by commercial banks, and 5% by cooperative banks. 60% of the activities of commercial banks are conducted by banks controlled by foreign investors.

II.3 Capital markets

At the beginning of the 90'ies capital markets were established in post-communist countries; in 1991 the Warsaw Stock Exchange was established in Poland, in Romania in 1995, in the Czech Republic 1992 (trading since 1993), in Slovakia in 1991 (trading since 1993), and in Hungary (1990). In the Warsaw Stock Exchange at the beginning of the period there were 9 entities (1991) in 2008 there was already 374, still comparing it to e.g. the London Stock Exchange (with more than 3000 companies in all markets) the Warsaw stock exchange seems to be a very small one.

Poland, Hungary and the Czech Republic were able to attract foreign investors, which delivered capital to their economies. However the high dependence on foreign capital causes that these countries are very vulnerable on capital outflow and any events causing capital outflow results in turbulences in capital markets. These turbulences depend also on the view of investors about emerging markets, which changes very rapidly (Schroder (2001)). The research of Schroder et al. (2001) shows that the Czech Republic among other Eastern European countries struggled with establishing a stable capital market which results in obstacles for attracting foreign investors. The problems of capital markets in these countries regard to low managerial qualification, low productivity and low stock market capitalization.

* www.stat.gov.pl

Some country-specific regulations were also problematic like weak protection of minority shareholders and unfair treatment of domestic and foreign investors. Hungary and Poland were considered as these countries where problems are the smallest, contrary to the Czech Republic. The problems took place also regarding to enforcement which was especially problematic in the Czech Republic and Slovakia. Table 2 shows the summary of capital market regulations at the beginning of the transitional process.

Table 2. Securities market regulation in chosen Eastern European countries

Country	Market regulations	
	Insider Laws and Investor Protection Enforcement	Disclosure and Compliance Regulation and Enforcement
Czech Republic	Contained in security law	Enhancement of standards and strengthening of enforcement needed
Hungary	Legal provisions and regulation converging towards IOSCO standards	Standards well developed
Lithuania	Yes, Law on Public and Trading in Securities	Standards implemented
Poland	Legal provisions and regulation converging into IOSCO standards	Standards well developed
Slovak Republic	Securities law setting standards on investors protection and disclosure	
Slovenia	Provisions exist in Law on Securities Market, legislation in line with EU, except for investor protection	Standards developed and enforcement capabilities being strengthened

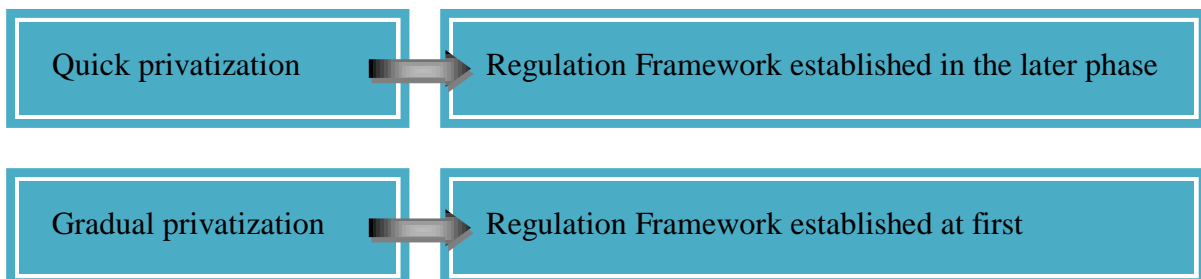
Source: Blommestein (1998)

Schroder (2001) explains that the problem of Eastern European countries was that a lot of non-organised over-the-counter trading was common. This was especially widespread in the Czech Republic. The incentives for trading over the counter were mainly less strict regulations and disclosure requirements. The same problem had taken place in Hungary however on a lower level. The trading-over-the-counter had some consequences like a lack of transparency in the ownership and the superior position of some shareholders over another, because they could elect new bodies, which controlled companies for their benefits. However the Czech government realised the problem at the end of 90'ies when they implemented the regulation, which aimed to protect a minority of shareholders.

II.4 Influence of transitional process on development of capital markets

Some important remarks are included in the paper of Schroder (2001). It was noticed that the development of capital markets in Eastern Europe was influenced by the method of

privatization, which was implemented in these countries. As Schroder (2001) writes a more gradual and consequent method like this one in Poland was more efficient than “big bang” implemented for example in the Czech Republic. The gradual method was characterized by more thought out process, where firstly the regulation framework was established in order to keep transparency, stability and liquidity of financial markets. In the Czech Republic the privatization by voucher method, which were listed on the stock exchange was conducted before establishment of adequate legal and institutional framework. It resulted in a lack of transparency and higher volatility on the capital market later on. On the other hand, the proper regulations according to high Western standards were established in advance in Poland. This ambitious requirement about meeting disclosure and fiduciary standards were connected with gradual privatization, stable growth of turnover and market capitalization. The relation between privatization method and the development of a stock market was described in the report of the OECD in part written by Blommestein (1998). She conducted research by which she proved that mass privatisation (conducted for example in the Czech Republic and Russia) was connected with high capitalization comparing to other emerging markets. It means that in Eastern European countries there was observed relation:



The Table 3 gives an overview of methods of privatization in chosen Eastern European countries.

Table 3. Implementation of IFRS in chosen European countries

	Voucher privatization	Sale to outside owners	Management Employee buy-outs	Other*
Czech Republic	Primary	Secondary	-	-
Hungary	-	Primary	-	Secondary
Poland	Secondary	Tertiary	Primary	-
Slovak Republic	Secondary	-	Primary	-

Slovenia	-	Secondary	-	-
Lithuania	Primary	Secondary	-	-

* Includes assets sales through insolvency proceedings and a mass privatisation programme based on preferential credits

Primary, secondary and tertiary stands for the first, second and the third most important privatisation methods in a particular country, according to their contribution to privatisation of state-owned enterprise assets.

Source: OECD Blommestein (1998), pp. 17

It is worth to mention, that while the process of privatization was run very quickly in the Czech Republic, but this rapid process was not encouraged by establishing a regulatory framework. It had consequences in lack of transparency; where most of the shares were in hands of couple of investors (usually banks) and also there was often conflict of interests since shareholders and lenders were the same body. On the other hand Poland was an opposite case, where at first a regulatory framework about disclosure and fiduciary according to Western countries were implemented and then a gradual privatisation. The focus was to maintain the high Western standards about transparency and prudent behaviour. However it was also a subject of a critique since companies which just started to learn how to operate in capital market had to face over-ambitious regulations that constrained development of capital market (OECD, Blommestein (1998)).

II.5 Tax systems

Tax systems play a very important role in former communist countries. States use this as a tool to control enterprises which become in some cases like “a political arm of the government” (Bychkova et al. (2005)). The link between tax requirements and accounting law is still relevant in these countries. Tax requirements mean that the losses as well profits have to be recognized in the same time manner, which is one of the reasons why Jindrichovska and McLeay (2005) did not find conservatism in the Czech Republic.

II.6 Central and Eastern Europe as a part of European Union

Post-communist European countries during this last decade made a progress in developing their economies and legislation in order to join the European Union. In 2004 the first countries from the post-communist bloc like the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia joined the EU, and the next two: Romania and Bulgaria joined almost three years later in 2007. It can be seen as a success for these countries, which more than decade ago were in totally different systems, and they were able to develop during this period in order to meet the strict requirements of membership. All European Union members had to implement International Financial Reporting Standards in

2005. It means that all public companies have to prepare their consolidated accounts according to international standards. However the European Union left some room for members' decision. Member state may permit or require public companies to prepare their single entities financial statements in accordance with IFRS (Palepu et al., 2007, 89) Most European Union countries kept their local Generally Accepted Accounting Principles which are applicable for private companies. The table below summaries the use of IFRS as the primary GAAP by domestic listed and unlisted companies in their consolidated financial statements for external financial reporting. This means that the basis of presentation note and auditor's report indicate that the financial statements are prepared on the basis of IFRSs.

Table 4. Implementation of IFRS in chosen European countries in 2005

Country			Description
Czech Republic	IFRS's required for all	as adopted by the EU	IFRS permitted in consolidated statements, prohibited in separate company statements
Germany	IFRS's required for all	as adopted by the EU	IFRS's permitted in both consolidated and separate company statements. Statutory accounts that conform to national GAAP are also required
Estonia	IFRS's required for all	as adopted by the EU	IFRS required in both consolidated and separate financial statements of financial institutions. IFRS permitted in both consolidated and separate statements of other companies
France	IFRS's required for all	as adopted by the EU	IFRS permitted in consolidated statements, prohibited in separate company statements
Hungary	IFRS's required for all	as adopted by the EU	IFRS's permitted in both consolidated and separate company statements. Statutory accounts that conform to national GAAP are also required
Poland	IFRS's required for all		IFRS's required for consolidated financial statements of banks, permitted in the consolidated financial statements of companies that have applied for stock exchange listing or whose parent uses IFRS's. IFRS's permitted in the separate financial statements of companies that have applied for stock exchange listing or whose parent uses IFRS's, prohibited in the separate financial statements of other companies
Slovenia	IFRS's required for all	as adopted by the EU	IFRS's required for financial institutions permitted for others

Source: www.iasplus.com

Chapter III. Accounting conservatism

In this chapter I will introduce the general theory regarding accounting conservatism. I recall definitions of conservatism used in literature. I describe two types of conservatism, methods of measuring and incentives of accounting conservatism.

III.1 Definition

How important is conservatism in accounting shows paper of Basu (1997), where it is mentioned, that conservatism was recognized already in 15th century, and the incentive for it had an origin in contracts. Conservatism has been defined already since long time. Bliss (1924) defines conservatism as accounting choices: “to anticipate no profit, but anticipate all losses”. Nowadays, there are much more sophisticated definitions of accounting conservatism. Also, conservatism was divided with time into two types.

Feltham and Ohlson (1995) define accounting conservatism as a situation when on average book value is lower than market value. Under conservatism accounting, goodwill is not recorded in accounting, which means that goodwill constitutes a difference between market and book value. Goodwill represents the understatement of assets value or future positive net value investments. Value of equity equals sum of value of financing activities and value of operating activities and goodwill is connected with operating activities. The accounting is unbiased (opposite to conservative accounting), when on average operating activities equal present value of future cash flows. On the other hand, conservative accounting reduces value of operating activities, but increases value of future expected abnormal operating earnings.

Basu (1997) defines conservatism as the incremental timeliness of bad news recognition over good news recognition. Basu (1997) as news means returns; he justifies it, that in efficient market, stocks incorporate all available information immediately. He assumed that earnings responds to bad news are quicker than responds to good news. In his paper Basu (1997) analyzes the features of conservatism. First of all, publicly available bad news is more timely incorporated in earnings than good news. Basu's (1997) proved also that a connection of earnings and returns is stronger than cash flow-returns for publicly available news either good or bad. He verified also that asymmetric timelines of good and bad news is connected also with asymmetric persistence of this news. Basu (1997) claims, that if the good news are recognized according to more strict conditions than bad news, it is more probable that bad news will reverse in following periods in contrary to good news which are more persistent. The last analysis of Basu (1997) concluded that, the relation of abnormal

return per dollar of unexpected earnings is smaller for “bad earnings news” than “good earnings news”.

Givoly and Hayn (2000) examine conservatism from point of view changes in earnings, cash flows and accruals. On the top of definitions of Basu (1997) (earnings conservatism) and Feltham and Ohlson (1995) (balance sheet conservatism), they give another definition of conservatism based on characteristics of a conservative reporting system, which tends to the early and full recognition of unfavourable events in the financial statements and the delayed and gradual recognition of favourable events, and then the conservatism can be measured by skewness or variability of the earnings distribution. Givoly and Hayn (2000) use also another approach in measuring conservatism which is based on features of accruals. They explain that accruals tend to reverse, when there is a period, when income exceeds (is lower than) cash flow is followed by period, when income is lower than (exceeds) cash flow. The conservatism takes place, when negative accruals tend to persist over time in stable companies. This measure is based on definition of conservatism, that accounting system results in “slower revenue recognition, faster expense recognition, lower asset valuation and higher liability valuation”, this definition incorporates elements of earnings conservatism (revenue and income) and balance sheet conservatism (assets and liabilities).

Except for a definition given by researchers in accounting literature, there is a definition of conservatism in regulations (Statement of Concept No. 2 “Qualitative characteristics of Accounting Information”, FASB). It says that “Conservatism is a prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered”. Still this definition leaves many doubts and doesn’t indicate clearly what conservatism is, however it is interpreted that “to adequately consider” means if there are two or more reporting alternatives, the alternative with the least favourable effect upon owners’ equity should be chosen.

III.2 Types of conservatism

Reading a first part of this chapter, one probably notices, that definitions of conservatism can be divided into two groups. This is parallel with existence two different types of conservatism in accounting. Feltham and Ohlson (1995) talk about understatement of net asset value, and this is so called balance sheet conservatism. The measure of balance sheet conservatism is market-to-book ratio. When market-to-book ratio is greater than one, it

implies conservatism (Garcia and Mora, 2004, 264). There is existence of balance sheet conservatism if:

$$\lim_{\tau \rightarrow \infty} \frac{\sum [oa_{t+\tau}]}{\sum [V_{t+\tau}]} < 1$$

oa is operating assets

V is the market value of operating assets

Garcia Lara and Mora (2004, 264) say that the understatement of shareholders' equity can be caused by usage of historical cost accounting, non-recognition some of intangible assets or due to growth (because market values reflects also future possible profits, which are not yet incorporated in assets of company), finally because of existence of synergy effect.

Balance sheet conservatism is sometimes called ex ante or unconditional conservatism. For example in Roychowdhury and Watts's (2004) paper, it is defined as the unconditional expensing of R&D and advertising expenses that leads to higher market-to-book ratio. Generally, all these three expressions are seen as the same and they are used exchangeable, measured by market-to-book ratio.

Earnings conservatism (Basu model) defines conservatism differently. It talks about incorporating bad news and good news in earnings, and conservatism is characterized by slower recognition of good news than bad news. To measure the asymmetric timeliness of earnings, negative and positive unexpected annual stock returns are used as proxies for bad and good news. The source of this phenomenon is seen in litigation exposure of auditors and managers. Many research focus on earnings conservatism and use for that Basu model (see Appendix I). In literature earnings conservatism is used exchangeable with ex post or conditional conservatism.

III.3 Incentives

Following Watts (2003a, 207) there are four incentives for conservatism: contracting, shareholder litigation, taxation and accounting regulation. The contracting explanation is seen as an origin of conservatism in accounting, however recent phenomena of conservatism is seen rather in shareholder litigation. Watts (2003a, 210) summarizes that all incentives can be brought to very basic ones that all stakeholders have a general aversion towards bonuses for management and a requirement for verifiability of revenues.

Contracting explanation

The inference, that financial statements respond to debt holders' informational needs is consistent with Statement of Concept No 1 (FASB, 1978) which says, "Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit and other decisions".

Watts (2003a) explains that there are two kinds of contracts. First of all, it is debt contracts and secondly management employment contracts. The mechanism which forces using conservatism is an asymmetry between borrowings and pays off. The pays off are done from net assets, since the net assets are overstated, it can happen that debtors do not receive their money. In this case debtors want to be sure that net assets of company are greater than their debts. The important thing is also that debtors in assessing ability of company to repay the loan use liquidation concept, which is based on that, a liquidator anticipates all possible losses and no unverifiable gains, what is in accordance with conservatism principles. The other group of contracts which encourage conservatism is to overcome agency theory regarding executive compensation contracts. Because managers are those, who know the best possible future cash inflows, there is asymmetry information. Management can overstate earnings due to bonus gains, the conservative regulations aim to prohibit these incentives. The problem of dividends is similar to management compensation contracts. Excessive dividends reduce net assets, what can cause that company will not be able to repay their debts. The other factor which is important, it is that conservatism gives opportunities for shareholders to dismiss managers whose performance is bad. Generally, managers aim to hide losses, but conservatism constrains this kind of manipulation.

Litigation explanation

The explanation of existence of conservatism comes from that, litigation is less probable if net assets are underestimated than overestimated. The litigation explanation especially applies to US situation under Securities Acts. Basu (1997) proves that conservatism increased in period when the auditors' exposure to legal liability increased. He uses the analysis of Kothari et al. (1989) to indicate periods, where auditors' exposure to legal liability was stronger. Then he conducted a research, if there is a connection between specific periods and conservatism level. Indeed, he finds out that, there is a coincident between auditors' exposure for damages and conservatism. It seems also reasonable to argue that the contractual incentives for conservatism may differ across European regimes (Rees, 2004, 152). This mainly is caused by two different legal systems, which exist in countries:

common-law and code-law system. Because in common law countries, there is a focus on shareholders and the incentives for conservatism are higher, what's more some countries traditionally are so called litigation cultures like US, where the existence of conservatism is widely proved and its level is higher than in continental Europe.

Regulatory and tax explanations

Since regulatory bodies are exposed to public opinion, they will aim to conservative accounting, because the public enforcers are more sensitive to scandals coming from understatement earnings than overstatement. Then, accounting regulatory bodies tend to create regulations which are with accordance to conservatism's principles. Regulations regarding to R&D can be an example. International Accounting Standard 38 requires recognition of assets for development when it is probable that they will produce future benefits, on the other hand the expenses are incorporated, when they occur. The value of company is underestimated, because some research expenditures have future values and others not (Bernard and Riggio, 2006, 92).

Managers can also underestimate earnings of company due to lower tax obligations. Companies try to avoid taxes and one of the methods is to undervalue revenues. They can try to recognize revenues later relatively to recognition of costs; these practices may also lead to conservatism. However, this incentive according to Watts (2003a) is not main incentive for conservatism nevertheless it can reinforce other incentives.

Other explanations

One of the explanations touches exercising of abandonment option. Basu (1997) elaborates the assumption that shareholders would prefer to liquidate a firm rather than bear predictable losses. This case is relevant when operating values is smaller than the liquidation value of assets. One of the consequences of conservatism is that net assets are underestimated, what means that this practice is less common (Watts 2003a, 214). Basu (1997) based on his research concludes that abandonment option as an alone incentive does not explain all the conservatism results but can encourage them.

Managers (Basu 1997) have incentives to use conservatism in accounting due to litigation exposure, but also to discourage competitors to enter a market by showing lower earnings. Earnings management's practices causing understatement of assets are e.g. bath charges and cookie jar reserves (Levitt 1998)

Increase of conservatism can be caused also by new recognition requirement for pensions, post-retirement health benefit obligations and environmental liabilities. Technological development causes also more write offs of assets, which could increase a degree of conservatism. Evolution of contracts and tax regulations might also influence growing conservatism (Basu 1997, 30)

III.4 Measures

Market-to-book measures (Feltham and Ohlson model)

The market-to-book ratio was developed by Feltham and Ohlson (1995). It is based on the balance-sheet-oriented definition of conservatism. Conservatism takes place when "the expected value at time t of the excess of the market value over the book value of the firm's equity at time $t + \tau$ is greater than zero as τ approaches infinity. Simpler, the measure is based on the relation between market value and book value of firm's equity. Because investors assess the value of equity based on the present value of future cash flows, the market-to-book ratio tends to be higher in case when there is more conservatism". The so called market-to-book ratio is a proxy for conservatism. Conservatism takes place, when the ratio is greater than one and if value of ratio is growing the level of conservatism as well (Givoly and Hayn, 2000, 294, 314).

Accrual measures

These measures are based on properties of accruals. Conservative treatment of gains and losses causes asymmetry in accruals. The correlation is following, the period when net income is greater, than cash flows should take place after period with negative accruals and opposite. Companies in steady state, cumulative amount of net income (before depreciation and amortization) should meet in long term cash flows. The characteristic of conservatism under this approach is that in long term across firms there should be net negative accruals (Givoly and Hayn, 2000, 292).

Accruals are divided into two groups operating (working capital) accruals and non-operating accruals. The origin of operating accruals is daily/basic activity of the firm. The equitation is following

Total accruals (before depreciation)=(net income+depreciation)–cash flow from operations

Operating accruals = Δ accounts receivable + Δ inventories + Δ prepaid expenses –
 Δ accounts payable – Δ taxes payable

Non-operating accruals = total accruals – operating accruals

Non-operating accruals basically include items like losses and bad debt provisions, restructuring charges, the effect of changes in estimates, gains or losses on the sale of assets, assets write downs, the accrual and capitalization expenses, and the deferral of revenues and their subsequent recognition. The accumulation of non-operating accruals is a measure for conservatism (Givoly and Hayn, 2000, 304).

Earnings measures (Basu model)

One of the characteristics of conservatism is that “bad” news is recognized quicker than “good” news. Then, Basu (1997) concluded that earnings have to be higher correlated with stock prices in periods of bad news than good news. It is believed that stock prices anticipate immediately performance of company despite of the bad or good outcome. Conservatism is measured as an excess of the correlation of stock price movements with bad news periods over the correlation with good news. This concept was developed by Basu (1997).

Measures based on the time-series properties of earnings and cash flows

A definition of conservatism says that speed of bad news recognition is higher than speed of good news recognition this means that earnings distribution is negatively skewed. Secondly, increased conservatism takes a form of either immediate (rather than gradual) recognition of bad news, or a greater tendency to provide for anticipated future costs or losses; it will be associated with increased variability of the earnings series. Then, the skewness and variability of the earnings distribution are next measures of conservatism (Givoly and Hayn, 2000, 293, 310).

The skewness:

$$\frac{\sum(x-\mu)^3}{\sigma^3}$$

x – the ROA (or CFO/Assets)

μ - mean of ROA (or CFO/Assets)

σ - standard deviation of ROA (or CFO/Assets)

Roychowdhury and Watts (2004) elaborate extensively about: differences between book value and market value of equity and the relation between two measures of conservatism (market-to-book value and Basu model). Roychowdhury and Watts (2004) define conservatism as understatement of market value of net assets. As a benchmark for this understatement, usually they take a market value of equity. In order to explain a relation between market value and Basu model, Roychowdhury and Watts give insides to

components of market value of equity. They distinguish three alternative measures of equity value: the value of separable net assets, the book value of net assets, the historical costs of net assets modified by the lower of cost or market rule and the market value of equity. The historical costs of net assets are determined by historical costs of net assets in combination with the lower of cost or market rule. The book value of net assets includes historical costs of net assets and increases in assets values over cost that can be verified (increases in the value of securities traded in liquid markets). The value of separable net assets is the market value of all separable assets under assumption, that there exists a market value for all these assets. It means that value of separable net assets differs from book value of net assets for example by value of licenses and patents, which are separable, but do not have market value due to lack of liquid markets. The value of separable net assets is a liquidation value of company. Market value of equity differs from the value of separable net assets by rents, which are returns resulting from competitive position (like monopoly power). Book value of equity never equals market value, because accounting is more concerned about reporting of valuation, distribution resources and recognition only verifiable increases in these resources. According to Roychowdhury and Watts (2004), a proper measure of conservatism is a difference between value of separable net assets and book value of net assets. On the other hand, most papers measure conservatism using market value and book value, meanwhile market value includes rents and future growth opportunities. The reason why researchers use market value and not the value of separable net assets can be that, it is difficult to assess the value of rents. Roychowdhury and Watts (2004) talked also about a measure of conservatism used by Basu (1997). They concluded that, similarly to market-to-book ratio, asymmetric timeliness incorporates rents, secondly it does not estimate a total understatement of net assets, it only assesses a recognition of gains versus losses. They also analyzed the relation of market-to-book value and asymmetric timeliness of earnings measure. They found that there exists a negative relation; however this relation depends on the period over which Basu model is computed. Roychowdhury and Watts (2004) explain the negative relation between the two measures as “the non-recognition effects”. They explain that changes in rents are not incorporated in book value of equity which is used in market-to-book ratio, contrary in Basu model rents are incorporated, because returns include changes in rents. However, in the longer period rents have to decrease, these changes are not incorporated in book value, so market-to-book value which was high at the beginning, now it decreases, in contrary asymmetric timeliness of earnings stays at the same level (it is not influenced by changes in rents), it means that in long-term period market-to-book ratio and Basu model should be

correlated. They advise also to measure asymmetric timelines of earnings over period of multiple years and not in the single period as it is done in most of research. This diminishes errors in measurement. Roychowdhury and Watts (2004) claim also that Basu model is a better measure of conservatism because it is not influenced by changes in rents contrary to market-to-book ratio.

Chapter IV. Literature review

Hereafter I give a summary of important research in the field of conservatism. First of all, generalities about methods, trends and incentives for conservatism are mentioned. A major part of this section presents papers, which analyzed the influence of institutional and political factors on conservatism.

IV.1 The existence of conservatism and trends

One of the most important papers from the field of conservatism in accounting is “The conservatism principle and the asymmetric timeliness of earnings” of Basu (1997). It is one of the most cited articles about conservatism and the model of measuring conservatism introduced by Basu is very often used in the literature (see the Appendix 1). Basu (1997) analyzed companies in the US from 1963 to 1990. He stated hypothesis about impact of conservatism on the timeliness of earnings and also impact of conservatism on persistence of earnings, and related with this, effect on earnings-return coefficient. First of all Basu proved that regression coefficient is higher for sample which included observations with negative unexpected returns than positive ones, it means that earnings is more timely in recognition publicly available “bad news” than “good news”. Basu (1997) examines also conservatism from accruals point. For this purpose he analyzed cash flows and earnings. It is known that earnings are more timely measures than cash flow measures. It is caused by this that activities of companies are partly linked with accruals, for example when a company setups a contract and payment takes place later than realization of sale. Because earnings are sum of cash flow and accruals, if unrealized losses but not gains are recognized then earnings are more conservative than cash flows. Basu (1997) assumed then that there is a higher difference between the sensitivities of earnings and cash flow to bad news than difference in sensitivity of earnings and cash flow to good news. Basu (1997) to check his hypothesis uses in a regression first earnings and then cash flow from operating activities and cash flow from operating and investment activities. He found out that regression coefficient for bad news is higher for earnings than for CFO, but for good news there is no difference between R^2 's, what is consistent with accounting conservatism incorporated in accruals. Next issue which Basu (1997) examines is the persistence of earnings. He claims that timeliness and persistence of earnings are the different measures of the same phenomenon. He proved that negative earnings have higher tendency to reverse in future than positive earnings. He invoked to papers Brooks and Buckmaster (1976) and Elgers and Lo (1994) which came

with similar results like his. Finally Basu (1997) measures conservatism and the information content of earnings releases. This is measured by earnings response coefficient (ERC). He found that the relation of positive earnings and abnormal returns is stronger than a relation of negative earnings with abnormal returns. This explains how conservatism affects the accounting recognition of news that the capital markets learn from other sources before earnings is announced e.g. news about GDP. Basu (1997) examines also one of the reasons why there is an increase of the level of conservatism. He analyzed relation between auditors' liability and coefficient of bad news and good news with earnings, and he finds that there is a relation between this correlation and the level of auditors' liability. He finds that in periods of higher liability exposure of auditors there is higher coefficient between bad news and earnings, and coefficient between good news and earnings in the last period of high legal liability has decreased (in previous periods it had behaved parallel with coefficient of bad news and earnings). Another explanation for increasing conservatism can be a more conservative accounting which followed higher legal liability of auditors (taken from Skinner (1994)).

Givoly and Hayn (2000) widely prove that there is conservatism in accounting in analyzed period 1950-1998. They took all companies included in Compustat database in order to research the level of conservatism. They find out that the percentage of companies in the full sample (all companies in period 1950-1998) reporting losses has increased significantly from 2-3% to over 35%, on the other hand they do not notice similar trend related to cash flows from operations to assets (measure of economic performance). From these observations they indirectly concluded that decreasing profitability is not caused by worse economic performance, but change in accounting accruals. They conducted research which also holds the period 1966-1998. They used all four kinds of conservatism measures (Basu model, market-to-book ratio, accruals methods and skewness of earnings). First of all they found out that in the early period (1966-1980) the companies generated slightly positive net accruals, and since 1982 net accruals have been negative. Accumulation of negative nonoperating accruals is consistent with an increase in reporting conservatism over the last several decades. The other groups of measures like the earnings-return measures indicate increase of conservatism overtime. The earnings distribution is negatively skewed in most of the examined periods and there is no similar phenomenon in cash flows. The negative skewness of earnings confirms existence of conservatism and increase of the skewness means increase of conservatism overtime. The standard deviation of ROA has increased (and it is

characteristic for all companies despite of size and industry). On the other hand, standard deviation of cash flows from operations-to-assets was stable.

IV.2 International differences

IV.2.1 Differences resulting from various GAAP regimes

Pope and Walker (1999) examine differences in the timeliness of income recognition between the US and UK. The analysis is based on the comparison between different accounting regimes existing in these countries. Basu model is used to measure conservatism. Pope and Walker (1999) find out that due to dissimilar accounting regimes there are significant differences in earnings before extraordinary items and they are much more sensitive to the bad news in the US than in UK. That is why they use in their model one time earnings before extraordinary items and another time earnings after extraordinary items, for the US and UK listed companies during 1976-1996. The outcomes show that in the US despite of which kind of earnings are used, the level of conservatism is similar. In contrast, they found out those earnings before extraordinary items are less conservative than earnings after extraordinary items in UK. Their results show also that UK firms recognize bad news faster than US but they classify the bad news differently. Overall the conclusion is that the level of conservatism measured using earnings before extraordinary items in the US was higher than in UK. However when earnings after extraordinary items were used, UK firms expresses higher conservatism than US ones.

The research of Giner and Rees (2001) differs from previous ones because that ones were analyzing mainly common-law countries (UK and US) or countries with a different accounting systems (Ball et al. (2000)). Giner and Rees focus on three close European countries Germany, France and UK in order to minimize possible social and economical differences. The period of the analysis includes years 1990-1998. This paper similar to Pope and Walker (1999) focuses on differences in regional GAAPs. The authors measure conservatism using Basu approach, and they found that the strongest conservatism is in the UK and then in France and Germany (these results are consistent with a research of Ball et. all (2000)). However all three countries express the association of bad news with returns is much stronger than good news and returns. The differences between these three countries are however not significant.

IV.2.2 Differences based on legal system

Ball et al. (2000, 4) extend previous studies by going beyond comparing just different accounting regimes but focusing on institutional factors because as they claim “First, much accounting practice is not determined by accounting standards, for reasons that include: practice is more detailed than standards; standards lag innovations in practice; and companies do not invariably implement standards. Second, the extent to which accounting practice is determined by formal standards varies internationally, and the incentive to follow accounting standards depends on penalties under different enforcement institutions”. The purpose of this research is similar to mine, since I claim that except for accounting regulation, there different factors like institutional and political settings which have influence on financial accounting. Ball et al. (2000) study international differences within Australia, Canada, UK, USA, France, Germany and Japan. They use as a distinction a legal system (code or common law). Ball et al. (2000) show that in common law countries with so called shareholder orientation there are stronger incentives for conservatism, on the other hand code law or stakeholder oriented countries characterize less conservative accounting. In the work of La Porta et al. (2000) there are provided indicators which assess the investor protection. However they are not provided for post-communist countries. Ball et al. (2000, 3) characterize code law countries, as these where a government is a source of accounting standards, and the government represents groups like employees, banks and business associations, this regime leads to so called stakeholder model, which involves agents for major groups contracting with the firm. “Current-period accounting income then tends to be viewed as the pie to be divided among groups, as dividends to shareholders, taxes to governments and bonuses to managers and perhaps also employees” (Ball et al. 2000, 3). Ball et al. (2000) also describe features of common-law countries. In this group of states, shareholders choose the supervisory board and public disclosure is a more likely solution for the information asymmetry. The sample of this research includes more than 40 000 firm-year observations during 1985-1995. They found out that in code law countries there is less conservatism then in common-law countries. Within the common law countries UK expressed the least conservatism due to lower political involvement in accounting, lower litigation costs and less issuance of public debt.

Garcia Lara and Mora (2004) extend studies of Ball et al. (2000) and Giner and Rees (2001) analyzing conservatism in the following countries: United Kingdom, Germany, France, Switzerland, the Netherlands, Italy, Spain and Belgium. They use market-to-book ratio as

well as Basu model. Garcia Lara and Mora (2004) find that there is an existence of both balance sheet and earnings conservatism practices in all examined countries, but there are significant differences in conservatism between countries. Except for one year in Netherlands, three in Spain and four in Italy in all other analyzed European countries (4) the market-to-book ratio is greater than one, what implies balance sheet conservatism. The market-to-book ratio in UK is significantly different from the other countries. In all analyzed countries there is a significant faster recognition (except for Italy) of bad news in earnings with respect to good news. Lara Garcia and Mora (2004) indicate that United Kingdom is the most extreme example in Europe (common-law-based country), which shows greater earnings conservatism than other analyzed countries, but authors find that there is insignificant difference in the level of earnings conservatism between UK and the group of continental countries. Garcia Lara and Mora (2004) don't examine influence of institutional factors; they consider only legal system taking UK as a common-law country and the rest as code law countries. However in their conclusions about differences in earnings conservatism they said, "we think that the differences in earnings conservatism across countries will continue to hold even after implementing a common set of standards as long as the differences in institutional factors will remain".

IV.2.3 Differences resulting from various institutional factors but not legal system

Raonic et al. (2004) focus on a different group of companies. They take to their analysis all companies across Europe which are listed on more than one capital market between 1987-1999 (366 firms and 3 724 firm-year observations) using Basu model to measure conditional conservatism. Authors expect that firms which operate on different market are exposed to the different requirements in the various systems. The three factors are considered: equity market exposure, regulatory environment (stronger law enforcement should lead to meeting accounting regulations like timely recognition of bad news) and the level of financial disclosure. Raonic et al. (2004) conclude that capital market pressure and regulatory impact each appears to lead to more conservative accounting, but the joint effect is mitigated when both influences are strong. Firms that originate in countries where accounting is less conservative (which are usually those where equity financing is relatively unimportant) experience a positive effect on earnings from exposure to more exacting regulatory enforcement. On the other hand, firms that are domiciled in countries where equity financing is relatively important and accounting is already conservative, are likely to see their earnings respond negatively to the market and positively to regulatory enforcement. In general, equity

market exposure appears to be positively associated with greater timeliness in earnings recognition, whilst regulatory enforcement is positively associated with the bias towards conservatism.

Bushman and Piotroski (2006) analyzed period 1999-2001. They analyzed all countries, which had enough number of observations all around the world excluding Poland and China due to their communist background and Bermuda and Cayman Island due to lack of institutional variables for them. At the end they were able to include 38 countries in their analysis. They used Basu model in their research incorporating legal and institutional factors as dummy variables. In the robustness test they used model based on the changes in accounting income. Bushman and Piotroski (2006) aimed to prove, that legal system, securities law and political economy influence incentives and the level of conservatism. Bushman and Piotroski (2006) find out that in the strong judicial system countries bad news are recognized faster than in countries with law quality judicial system. Secondly, they find that strong public enforcement aspects of securities law slows recognition of good news in earnings relative to firms in countries with weak public enforcement aspects. In contrast, the private enforcement aspects of securities law have no impact on conservatism. Less conservatism in accounting is observed in countries with greater political involvement and high risk of expropriation of assets by the state and high state ownership of enterprises. Bushman and Piotroski don't find a clear connection between tax regimes and conservatism in accounting. But Jindrichovska and McLeay (2005) indicate that strict income tax law is one of the main reasons of a lack of conservatism in accounting in Czech companies. Bushman and Piotroski (2006) use the Basu's model and extended it by adding variables that consider institutional factors. The factors which they included in their paper were following: legal/judicial regime, political economy, tax regime and financial aspects. First element considered aspects like law origin (common, code law), judicial impartiality, security law and enforcement, second. Political economy stated for risk of expropriation and share of state-owned enterprises in GDP. Financial aspects researched influence of bank sector, and private debt.

IV.3 Research regarding to Eastern European countries

Evidence regarding to one of the country of East Europe can be found in Jindrichovska and McLeay (2005). Jindrichovska and McLeay (2005) analyzed the data for companies listed on the Prague Stock Exchange within 1993-1999. Jindrichovska and McLeay used Basu model to measure conservatism in Czech Republic. They don't find prove for existence accounting

conservatism in the Czech Republic. They rather find evidence that good news are more timely than bad news in the Czech market. This phenomenon Jindrichovska and McLeay explain due to economic transition and regulatory conditions that limit market influences on accounting behaviour. The results are confirmed by recent research conducted by Martikainen and Tilli (2007), which find out that there is no evidence confirming earnings conservatism in Czech Republic.

The recent paper about Eastern European countries is “*Reliability of earnings figures and conservatism in transitional economies*” of Martikainen M. and Tilli S. (2007). The aim of paper was to investigate conservatism in Central and Eastern Europe and influence of the transition process on conservatism. The issue of influence of joining to EU was also considered. The objects of analysis were following countries Bulgaria, Croatia, Czech Republic, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia and Ukraine. Research period holds years 1999 and 2005 (total number of observations 10190 firm-years). Martikainen and Tilli (2007) used measure which is based on changes in income. The results of the research shows that in Bulgaria, Croatia, Lithuania, Poland, Romania, Russia and Slovakia there is conservatism on the significant level, in Latvia at 10% significance level. The conservatism in the Czech Republic (a similar result to Jindrichovska and McLeay (2005)) and Ukraine is insignificant. Finally, the result is surprising for Serbia, which shows very aggressive attitude of loss recognition on the significant level. The research shows also that joining to EU has significant positive influence on loss recognition, it means EU members are more conservative than non-EU ones. They research also influence of transition process. As proxies for transition process they use indicators of European Bank of Development and Reconstruction. They found out that those countries which a progress in transition is higher express higher conservatism, on the significant level.

Chapter V. Hypothesis development

In this part I describe and justify the expected results of my analysis. The research is divided into two steps. During the first phase the Western and Eastern European countries are compared. Second phase is focused on Eastern European countries and the influence of institutional factors on conservatism in these countries.

V.1 Accounting conservatism in Eastern Europe

H1: There is unconditional conservatism in post-communist countries

Capitalism exists in post-communism countries almost twenty years. During this period these countries were able to create institutional frameworks similar to Western European countries. They established capital markets, private owned bank systems and law system under directions of European Union. The transition process went really fast, since Eastern European countries used widely help and knowledge of their better developed neighbours. A big part of foreign capital came to these economies as direct and indirect investments, and then there are lot of foreign companies, which bring practices typical for market economy. All these changes allow saying that Eastern European countries already created mechanisms typical for market economy and that is why I can claim that unconditional accounting conservatism takes place in Eastern European countries.

H2: Conditional and unconditional conservatism is stronger in Western-European countries than in post-communist countries

Despite of a big progress post-communism countries in the transition process, it is obvious that full transformation from command market to free economy market can not be done within so short period of time. The tradition of market economy in Western countries was built by decades, and it is not possible to repeat the same process in so short time. On the top of that, some countries like Slovenia or Slovak Republic didn't go through the transition process so fast. Then it is expected that accounting in post-communism countries is less conservative than in Western European countries.

The question is, whether both balance-sheet conservatism and earnings conservatism are less expressed in post-communist countries, or maybe there are differences in these two types of conservatism. First, I consider balance sheet conservatism, which measure the understatement of the book value of companies, the incentives for balance sheet conservatism is connected with debt contracts. Banks and other stake holders require careful

estimation of value companies, because banks are mainly foreign banks, we can expect that incentives for that are quite strong and similar to Western European countries. Earnings conservatism is mainly driven by litigation exposure of companies to shareholders and accounting (as well auditing) regulations. The characteristic of Eastern European economies is that capital markets are still underdeveloped and they do not play so important role in economy, they are smaller and value of listed companies is much lower. On the other hand, regulations in analyzed countries are similar to Western countries, since these regulations were based on French, German or American models, and even nowadays they are already same (implementation IFRS) since post-communist countries joined EU. However some differences might remain, since the accounting purposes in communism were different and these countries are characterized by lower level of education (accountants as clerks). The strong position of government in tax field causes also, those companies are afraid to not recognize revenues since tax authorities can give them penalties for avoiding taxes. This all drives to conclusion that in case of earnings conservatism it is possible that accounting in Western countries is more conservative then in Eastern European countries.

H3: There are differences in the level of conditional conservatism in Eastern European countries

Taking into account individual countries, it is reasonable to say that the countries despite of common communist tradition are different due to differently hold transition process, like it was described in Chapter II. Countries had different approaches towards the carrying out the transformation process. The Czech Republic was the quickest in privatization of state-owned enterprises. Poland chose more gradual method of privatization, while Hungary tried to attract outside investors, which could buy state-owned enterprises. Except for different way of carrying transitional process, different factors like size of capital markets, regulatory frameworks, and tradition (Polish accounting was relatively flexible already before 1990) can also determine dissimilar levels of conservatism in Eastern European countries. Based on the progress in transitional process, regulatory framework, and the size of capital markets, I can expect that the conservatism is expressed the most in Poland, due to the strict regulatory frameworks, which were established from very beginning of transitional process and also due to of exposure of Warsaw Stock Exchange to investors, since it is the biggest stock market in Eastern Europe. The lowest level of conservatism should take place in Czech Republic. The reasons for that are very strict tax regulation and lack of regulatory and laws regarding disclosure and fiduciary standards at the beginning of transitional process.

Hungary is expected to be somewhere between Poland and Czech Republic, since their regulations were not that ambitious like Polish one, the development of security market was also slower, on the other hand they did not deal with a problem of very strong tax regulations like it was the case in Czech Republic.

V.2 Influence of institutional factors on conditional conservatism in accounting

In the second step institutional factors are taken into account. Based on prior research, it is known that there are many factors, which encourage or discourage conservatism. In this stage, I try to prove that transitional process, equity market exposure, legal system, security law, political economy (risk of expropriation) and tax burden are related to level of conservatism.

H4: Asymmetric timeliness of earnings is higher in the countries with a higher progress in transitional process

Progress in transitional process as showed in various analyses differs greatly (sourced European Bank of Development and Reconstruction, Structural Change Indicators*). This can have an influence on accounting practices, since countries, which went faster through transitional process have more similar approach to Western countries, what means that they can demonstrate higher degree of conservatism. This is one of the subjects of this research. The transition process can be expressed as Martikainen and Tilli (2007, 40) did by “changing and creating of institutions (particularly private enterprises); changes in the role of the state and thereby, the creation of fundamentally different governmental institution”. If conservatism is seen as one of factor deciding about quality of financial information, financial reporting will not be conservative, unless incentives similar to Western capital markets are fully developed. It means that in the transitional economies: effective corporate governance, stable market economies and efficient capital market have to be established in order to express similar trends to Western European markets. Once these mechanisms are established, incentives for conservatism like contracting and litigation exposure take place.

H5: Asymmetric timeliness of earnings is higher in the countries with higher market exposure

With strong market exposure of companies is connected the risk of litigations by investors. Companies which are listed on capital markets are exposed to litigation in case when they

* <http://www.ebrd.com/country/sector/econo/stats/index.htm>

mislead the investors. Then, managers are especially precaution about their accounting policy. There should be a relation between how well are developed capital markets and the level of accounting conservatism. It is expected that higher market exposure causes higher level of conservatism in accounting.

H6: Asymmetric timeliness of earnings is higher in countries with strong legal system

Following divagation of Bushman and Piotroski (2004) I can expect that the extent that legal/judicial system is conducive to the use of enforceable contracts, there will be higher conservatism, due to need of verifiable accounting figures by contracting parties. According to Bushman and Piotroski (2006, 112) the level of force in a legal regime indicates the use of enforceable contracts. The role of the judicial system is to maintain the enforceability of contracts. It means that countries with a stronger judicial system (which lead to the use of accounting numbers in formal contracts) are characterized by higher demand for conservative reporting. Furthermore, a strong judicial system can increase litigation costs from overstatement of earnings, what again motivates for accounting conservatism. Bushman and Piotroski (2006) focus on two institutional dimensions of a country legal regime: investor protections embodied in corporate law and the impartiality of the judicial law. The impartiality of the judicial law shows how much the legal framework is trusted by society so also investors. A strong legal system causes higher contracting incentives for conservatism in accounting and then higher level of conservatism.

H7: Asymmetric timeliness of earnings is higher in countries with strong security law

The explanation for this relation is given in Bushman and Piotroski (2006). They say that there exists relation between security law and accounting conservatism. First of all regulatory bodies are exposed to public judgment, which is more unfavourable in case of overstatement of accounting numbers than understatement. Then regulatory bodies tend to create law which encourages conservatism. Furthermore, the costs of strong security law (which regulates relations between market players) are smaller than individual contracts, thus security law responds to contracting incentive. The last, strong security law is connected with some non-criminal penalties but also criminal ones (if it is built in framework of national law), this causes that accounting is even more conservative. All these reasons cause that I should expect that the quality of security law is connected with level of accounting conservatism.

H8: Asymmetric timeliness of earnings is higher in countries, where is a high risk of expropriation

It is claimed, that government aims to control enterprises due to market imperfections such as monopoly power, to provide employment and subsidies. The state wants to control poor performing companies for benefit of the greater society. The discussion is based on arguments regarding to difference between communism and capitalism. There are two different points of view. If a state wants to take over the companies which perform well, in order to spread welfare within all society then there are incentives for conservatism. On the other hand, if a government wants to help companies, which results are poor then overstatement of earnings will take a place (Bushman and Piotroski, 2006). Bushman and Piotroski (2006) find that the influence of political economy depends on the judicial system if it is common or code law. In common law countries, the government is more benevolent (take over companies poorly performing) and in code law countries the governments tend to intervene in well performing entities. What's more managers try to respond to these procedures by using respectively less or more conservative accounting. Post-communism countries are code law countries, then it is expected that the relation between risk of expropriation and conservatism is positive, so the higher level of this risk determines the higher level of conservatism in accounting.

H9: Asymmetric timeliness of earnings is higher in countries with strong tax regime

It is expected that companies in countries with high tax burden, in order to avoid tax payment will exercise conservatism. In this case I can state that above hypothesis should be true. It is understandable that companies avoid paying taxes. In order to diminish a value of income tax, companies try to underestimate earnings what is characteristic of conservatism. On the other hand, the situation of post-communist countries is a little bit different, because tax authorities in these countries have strong position and try to prevent these kinds of practices in companies. Already Jindrichovska and McLeay (2005) mentioned that strong tax regime is one of the reasons why there is no evidence of conservatism in Czech Republic. This opposite stream in the tax regime of post-communists countries causes that the relation between tax regimes and accounting conservatism can be opposite to what Bushman and Piotroski (2006) divagated and what I expect.

Chapter VI. Research design

In the first stage, unconditional and conditional conservatism are measured in Western European countries and post-communist countries as two pooled samples. The sample of Western Europe consists of companies from France and Germany. The reasons, why these two countries are included in sample are due to the big number of companies in these countries and the same legal system like Eastern countries. This allowed eliminating the differences between conservatism caused by a diverse legal system, thus Eastern and Western samples are comparable in terms of legal system. The other countries of Western Europe are not included in the research, because France and Germany constitute already enough big sample. For post-communist countries observations from the Czech Republic, Hungary, Lithuania, Slovakia, Slovenia and Poland are taken to computation. Basu model and market-to-book ratio are measures, which are used in this research. Roychowdhury and Watts (2004) conclude from their research that asymmetric timeliness measure (Basu model) is likely a better measure to compare international differences than market-to-book ratio, because it doesn't include rents (above-competitive returns on the firm's current and future investment). The results Givoly et al. (2007) are similar. According to them, there is a negative association between asymmetric timeliness and alternative measures, what means that using two kinds of measure gives opportunity to compare eventually different results.

VI.1 Accounting conservatism in Eastern Europe. Comparison with Western Europe

In the first stage, two measures of conservatism are used: Basu model and market-to-book ratio. The reason for this is that there is a negative correlation between earnings conservatism and balance sheet conservatism. Following Givoly et al. (2007) I think, it is better to use different measures of conservatism, since the results can depend on the used method.

The model of Basu is used in order to measure earnings conservatism.

$$NI_{it} = \alpha_0 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it}^* DR_{it} + \varepsilon_{it} \quad (1)$$

NI_{it} – accounting income (income before extraordinary items)

R_{it} - the return of firm i over the 12 months $(P_t - P_{t-1}) / P_{t-1}$

$$DR_{it} = \begin{cases} 1 & \text{if } R_{it} < 0 \\ 0 & \text{otherwise} \end{cases}$$

Measures of conservatism from the regression 1 (Givoly and Hayn, 2000, 293):

1. β_1 – incremental response to bad news relative to good news, conservatism when $\beta_1 > 0$, if $\beta_1 = 0$ there is no difference between the speed of good news and bad news recognition so β_0 captures the speed with which news in general is recognized, however if $\beta_1 \neq 0$ then β_0 captures the speed of good news recognition
2. $(\beta_0 + \beta_1) / \beta_0$ the relative sensitivity of earnings to bad news compared with their sensitivity to good news, conservatism when ratio > 1
3. R_b^2 / R_g^2 where R_b^2 - R^2 power of regression in periods of bad news (negative returns); R_g^2 - R^2 power of regression in periods of good news (positive returns), conservatism when the ratio > 1
4. The average downward bias in the earnings-to-price ratio due to conservatism, developed by Pope and Walker (1999)

In order to measure balance sheet conservatism there is used market-to-book ratio.

$$MTB = MV / BV$$

MV- market value represented by market capitalization

BV- book value represented by shareholders equity

The market-to-book ratio is calculated based on aggregated amounts of market and book value, where market value is sum of market capitalization of all companies in sample and book value is a sum of shareholder's equity of all companies in sample. $MTB > 0$ indicates the accounting conservatism.

Constraints about Basu model

Ball and Kothari (2007) describe widely constraints and implications of Basu model. First of all they explained, when in the model there should be used as a dependent variable accounting income and when a stock return. They distinguished situations and gave a guideline how to construct a model in these situations:

- ① When the objective of research is to analyse some properties of accounting income, then a dependent variable should be accounting income. The features can be e.g. usefulness and timeliness of accounting income. Further on, if an objective is to investigate how accounting income incorporates economic income, then the subject of research is accounting income, which obviously supposed to be a dependent variable.
- ② If the research objective is to analyse markets, then the dependent variable should be stock returns. However this is not an aim of Basu (1997) and following his research papers.

Thus, research, which focus on influence of international and institutional differences on accounting practices, should use as a dependent variable an accounting income. Following the argumentation of Ball and Kothari (2007) and methodology used by Bushman and Piotroski (2006) in this research as a dependent variable is used accounting income.

The relation between market-to-book ratio and Basu model is a complicated matter. The negative relation is seen as a measure error or bias. Ball and Kothari (2007) believe that this negative correlation is caused by different types of conservatism which these models measure. Dietrich et al. (2007, p. 97) criticize the Basu model as a useless for measuring conservatism. Dietrich et al (2007) indicate that the asymmetric timeliness research design is biased and thus the results derived from that model can not be interpreted as evidence of conservatism. They found that only under very strict conditions (which are rarely met in empirical research) Basu model can be a measure of conservatism. They prove that the differences between coefficients of good and bad news in Basu model are caused by econometric biases. The first bias is caused by the sample formation procedure and secondly it is biased because of the properties of sample (skewness of variables). However Ball and Kothari (2007) argue that the Basu model is an appropriate measure of conditional conservatism. The construction of the model is flexible and depends on the objectives. Researchers should be aware of that. Dietrich et al. (2007) argues that market-to-book ratio is appropriate measure of conservatism comparing to Basu model, but Ball and Kothari

(2007) claims that the market-to-book value covers not only conservatism but also different aspects like synergy effects and growth opportunities.

As one can notice both measures have disadvantages and advantages, this was one of the reasons to use both methods in this research. However, Basu model is this one which is widely used in research in which institutional factors are analyzed. This is also a model where the influence of institutional factors can be easily incorporated.

VI.2 Influence of institutional factors on conservatism accounting

Bushman and Piotroski (2006) conducted an interesting research about influence of legal and political institutions on accounting conservatism. This paper was a primary inspiration of my research. Bushman and Piotroski (2006) used Basu's model, in order to research the institutional factors and conservatism. Primary Basu model was introduced in previous paragraph. In this stage the institutional factors are incorporated into model. In this case all post-communist countries with observations are included in the sample. The variables for institutional factors are incorporated in the model as a dummy variable. The construction of dummy variable is explained later on. The following model is constructed according to Bushman and Piotroski (2006) research.

The basic Basu model is following:

$$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D$$

After incorporating an institutional factor the model is following:

$$NI = \beta_1 + \beta_2 R_{it} + B_{21} CCD R_{it} + \beta_4 R_{it} D + \beta_{41} CCD R_{it} D$$

After transformation, above equation is following

$$NI = \beta_1 + (\beta_2 + B_{21} CCD) R_{it} + (\beta_4 + \beta_{41} CCD) R_{it} D$$

CCD- represents any institutional factor: transition process (TRANSP), equity market exposure (EQMEXP), legal system (LAW), security law (SECLAW), risk of expropriation and tax burden (TAX).

Interpretation of the model

Ⓒ The assumption that $CCD=1$,

$(\beta_2 + B_{21} CCD)$ is the total coefficient on stock returns in the countries that possess CCD characteristics, where B_{21} is the incremental sensitivity of earnings to good news for a CCD country relative to the sensitivity of earnings to good news in a non-CCD country;

$(\beta_4 + \beta_{41} \text{CCD})$ is the aggregate incremental bad news sensitivity of earnings over good news sensitivity in countries with characteristic CCD, where β_{41} measures the incremental bad news sensitivity of earnings for a CCD country relative to the incremental bad news recognition coefficient for a non-CCD country.

Ⓒ The assumption that $\text{CCD}=1$ and $(\beta_4 + \beta_{41} \text{CCD})=0$

Then there is no difference in recognition good and bad news in CCD country and $(\beta_2 + \beta_{21} \text{CCD})$ measures the speed of news recognition in general in CCD country.

Ⓒ The assumption that $\text{CCD}=1$ and $(\beta_4 + \beta_{41} \text{CCD}) \neq 0$

$(\beta_2 + \beta_{21} \text{CCD})$ measures the speed of good news, $(\beta_4 + \beta_{41} \text{CCD})$ the incremental speed of bad news recognition relative to good news recognition for CCD country and $(\beta_2 + \beta_{21} \text{CCD}) + (\beta_4 + \beta_{41} \text{CCD})$ the speed of bad news recognition for CCD countries

Similar to Bushman and Piotroski (2006), in the research the focus will be on recognition of good and bad news in CCD countries relative to non-CCD countries, so the $\beta_{21} + \beta_{41}$ are great importance.

When $\beta_{21} \neq 0$ the speed of good news recognition differs in CCD countries relative to non-CCD countries

When $\beta_{41} \neq 0$ incremental speed of bad news recognition relative to good news recognition differs for CCD countries to non-CCD countries

Because the methodology which is used in this research is based on paper of Bushman and Piotroski (2006) the same assumptions about limitations of model are applicable. First of all, I have to assume that stock returns capture equally well news (good and bad) and true economic value of companies across countries using one-year window. However Bushman and Piotroski (2006) believe that their research design assures at least at minimum level diminishes effect of different stock returns informativeness. There are connected with this problem some future research possibilities, where the model eliminates this problem and does not include stock prices in model.

In the model there are incorporated the institutional settings, below it is explained what proxies are used for these factors and how they are gathered.

Ⓢ **Proxies for transition process (TRANSP)**

Indicators of European Bank of Development and Reconstruction stand for the proxy of the transition process. In their statistics “Transition indicators by country”^{*}, there are couples of indexes explaining the level of progress in different socio-economic aspects. Martikainen and Tilli (2006) took these indicators as suitable proxies for transition process. I followed their approach and constructed similar (however not exactly the same) a transition process indicator, which is an arithmetic mean of following indicators:

- *Large scale privatization*, stands for the progress in the privatization of big companies, the value of 1 stands for little private ownership, while 4,33 (maximum value) means that more than 75% of enterprise assets is in private ownership with effective corporate governance (advanced industrial economies)
- *Small scale privatization*-stands for the level of the privatization of small firms, where 1 stands for a small progress, and 4,33 means the small scale entrepreneurship is a private ownership and it performs typically for advanced industrial economies
- *Governance and Enterprise restructuring*- stands for the state policy towards enterprises, if it is a policy subsidizing the enterprises, what results in weak financial discipline and corporate governance then it has a score of 1. However if there are established financial institutions encouraging market-driven restructuring then a country scores 4,33
- *Price liberalization* stands for the level of control of state over prices, if they are established due in a market (supply and demand) or they are set up by state.
- *Competition Policy* stands for the level of competition in the markets, if there are established anty-monopoly regulations and if there are no barriers to entry or exit markets
- *Banking reform & interest rate liberalization* assess if there is established a competitive banking sector with accordance to Bank of International Settlements’ standards

^{*} www.ebrd.com/country/sector/econo/stats/index.htm

The indicators have value of 1 to 4.33. In order to transform a transitional process indicator into a dummy variable which is used in the regression, the median of the sample is calculated and the year-country values which are above or equal the median have value of 1 and otherwise 0. In the case of missing values, the value is replaced by the arithmetic mean of the two neighbouring values.

Proxies for equity market exposure (EQMEX)

Raonic et al. (2004) measures the market exposure as a mean rank across three variables: the ratio of the aggregate stock market capitalization to gross domestic product, the number of listed domestic firms relative to a country's population and the number of IPO's relative to the population. This method can not be fully used in a case of Eastern European countries. The problem is that, in some of these countries, state-owned enterprises were privatized by listing them on the stock exchange, what caused that at the beginning of the 90'ies there were about a thousand listed companies in Prague and Bratislava' stock exchange, while in 2008 it was 10 times less. This decrease is not caused by a decreasing role of security markets in these countries but by delisting privatized companies from a stock exchange. The stock market capitalisation in per cent of GDP was obtained from statistics of European Bank of Development and Reconstruction „Structural change indicators”. The number of IPO's was obtained from Thomson One Banker database. Values of the market capitalization/GDP and IPO/population (in millions) differ quite significantly. That is why, first of all the ratings (from 1 to 5) of these two datasets were created. The year-country observations has value of 1 when, the score takes value form the range $\langle \min ; \min + 1/5(\max - \min) \rangle$, 2 when the score is in the range $(\min + 1/5(\max - \min); \min + 2/5(\max - \min))$ and so on. Secondly, the two ratings were used to compute an average. The dummy variable equals 1, when average is higher or equals the median of the sample.

Proxies for regulatory environment (law enforcement) (LAW)

Bushman and Piotroski (2006) use proxy for legal system - “judicial impartiality”. This measure captures whether a trusted legal framework exists for private business to challenge the legality of government actions and regulation. Ratings are available in Economic Freedom of the World's annual report for the years 1995, 2000-2006, the missing values are replaced by the nearest value in the rating. The higher score stands for more efficient and clear legal framework. The dummy variable has value 1, when the country-year score is higher or equal to the median computed for the sample, otherwise it is 0.

Proxies for security law (SECLAW)

Bushman and Piotroski (2006) use rating in a paper of La Porta et al. (2003). Since the countries which I analyze are not included in this research I used a rating of European Bank of Development and Reconstruction. As a proxy, there is used an indicator “securities markets and non-bank financial institutions”, which stands for the level of issuance of securities by private enterprises; establishment of independent share registries, secure clearance and settlement procedures, and protection of minority shareholders; emergence of non-bank financial institutions (for example, investment funds, private insurance and pension funds, leasing companies) and associated regulatory framework. Missing values were replaced by the nearest value in the ranking. The dummy variable is equal 1, when the score is higher or equal the sample median.

Proxies for political economy (PTECON)

Bushman and Piotroski (2006) use two proxies for political economy. First one is the risk of expropriation which is taken from La Porta et al. (1999), but this rating is not available for post-communist countries. The second proxy is share of country-level output supplied by state-owned enterprises.

Because of the lack of ratings in La Porta’s (1999) paper, I took ratings of European Bank of Development and Reconstruction as a proxy of political economy. The first component of PTECON index is “Transfers and subsidies as a percentage of GDP”. Ratings are available from Economic Freedom of the World’s annual report, for the years 1995, 2000-2006, missing values are replaced by the nearest value in the rating. This rating stands for general government transfers and subsidies as a share of GDP. However, the rating is constructed in such a way, that a higher score stands for less transfers and subsidies.

The dummy variable PTECON includes also the information about share of public sector in GDP, this information is provided by European Bank of Development and Reconstruction as one of the element of “Structural change indicators”. I assume, that a greater government ownership in economy suggests the greater risk of expropriation. For these two datasets the ratings from 1 to 5 were created, since the information is provided by two different sources and in different units. High country-year score means more intervention and engagement of the state in the economy and stands for higher risk of expropriation by state. The dummy variable is constructed in such a way that the country-year value higher or equal, than the median computed for the country, it has a value of 1 and otherwise 0.



Proxies for tax regime (TAX)

Bushman and Piotroski (2006) use a rating from Economic Freedom of the World's annual report. The proxy stands for "the top marginal tax rate and the income threshold at which they take effect to construct a rating of taxation". The rating is constructed in such a way that, higher marginal tax rates that take effect at lower income thresholds received lower ratings. Data are available for the years 1995, 2000-2006, missing values are replaced by the nearest score. Dummy variable is constructed in such a way that TAX=1, when the country-year score is higher or equal than median for a sample.

The reasons why the institutional factors are incorporated into the model as a dummy variable and not as a score are similar to these introduced in paper of Bushman and Piotroski (2006). They argued that using dummy variables for proxies facilitates the comparison of conservatism coefficients in different countries, and diminish a measurement error, since country rankings come from different sources and they use different scales. These rankings are characterized also by noise in measurement and subjective methods, what is another reason to use dummy variable.

The dummy variable is constructed in a slightly different way, than Bushman and Piotroski (2006) did it. Their dummy variable takes value of 1, when a score is higher or equals the median counted for a country. However, I consider this as not a fully proper way assigning values to country-year observations. The consideration of the following example gives a sense of the nature of the problem. The ratings for Slovakia in case of Law were low. When the median was computed on the country level, then all Slovakian scores of LAW were assigned as a high (1) what means that its legal framework was clear and enforceable. However in this way, the observations of other countries which had higher score than Slovakian ones were assigned as a low (0) because the median of different country was higher than Slovakian one. Then, in my opinion the computation of a median for whole sample and based on that assigning a dummy is a more proper way of building model.

VI.3 Data

The data were extracted from World Scope and Thomson Financial database for the period 1994-2008*. As a market value was taken market capitalization (WS.YR END MARKET

*Transitional process started in post-communist countries in 1990. Thus, the intention was to analyze period of eighteen years 1990-2008. However there is no values for Eastern European countries at the beginning of this period.

CAP) which is Market Price-Year End * Common Shares Outstanding, book value is represented in database by common equity (TF.Total Common Equity common shareholders' interest in a company), the accounting earnings (NI) are income before extraordinary items (WS.IncomeBefExtraItemsAndPfdDiv- Net Income Before Extraordinary Items And Preferred Dividends), and dividends per share (WS.DividendsPerShare). All accounting variables are scaled by beginning market value of company (WS.YR END MARKET CAP). Stock returns (R_{it}) are computed as $((P_{it} + Div_{it}) - P_{it-1}) / P_{it-1}$.

Market-to-book ratio

All companies with missing values are excluded from the research. The number of observations is presented in the Table 5. The number of observations is very low at the beginning of analyzed period for Eastern European countries. The reason is that at the beginning of 90's security markets were not developed and some stock exchanges were just established in post-communist countries.

Table 5. Market-to-book ratio. Descriptive statistics and number of observations for Western and Eastern European sample for period 1994-2008

A. Number of observations

Year	Western countries	Eastern countries
1994	1032	21
1995	1015	77
1996	1203	130
1997	1276	148
1998	1398	169
1999	1539	180
2000	1718	189
2001	1683	179
2002	1559	191
2003	1459	226
2004	1418	267
2005	1438	282
2006	1554	312
2007	1531	342
2008	1078	290
Total	20901	3003

B. Descriptive statistics

Variable	Mean	Median	St. Dev.	Min	Max	Count
<i>Eastern European countries</i>						
<i>Market value</i>	361,77	44,65	1 319,41	0,01	27 756,39	3 003
<i>Book value</i>	203,76	36,87	619,34	-97,54	7 082,29	3 003
<i>Western European countries</i>						
<i>Market value</i>	1 415,35	75,23	6 671,94	0,01	213 793,89	20 901
<i>Book value</i>	691,37	40,13	3 161,29	-9 951,00	60 987,00	20 901

Market value and book value are positively skewed however skewness for Eastern European countries is bigger. The companies in Western European countries are also bigger from point of view book value and market value, because their means and also maximum values are higher than for Eastern European companies. This is in accordance with expectations about properties of companies in those two regions.

Basu model

All companies with missing values and market capitalization less than 1 million euro are excluded from the research. The outliers are rejected using SPSS, when the standard residuals are greater than 3.29 according to suggestions of Field (2005, 164). According to me, this method better indicates outliers, than a method based on manual rejecting extreme values of variables. This was confirmed by comparing explanatory power of models. R^2 was higher, when the outliers were rejected based on their standard residuals. The outliers are detected, when the model is run for Eastern European countries and Western European countries separately. However, when the countries are taken into account separately or institutional factors are subject of the analysis, the outliers are rejected based on the country sample. There are no data for Romanian, Bulgarian, Estonian and Latvian public listed companies, so these countries are not included in the research despite of their membership in European Union and a communist tradition.

Table 6 reports descriptive statistics. Accounting earnings are negatively skewed and stock returns are positively skewed. These characteristics are consistent with results of Bushman and Piotroski (2006). Besides the volatility of stock returns in Eastern European countries is higher than Western European countries, this is consistent with the research Schroder et.al. (2000) and confirms, that capital markets are more vulnerable for turbulences in Eastern

Europe than in Western Europe. The structure of sample is determined by size of capital markets of analyzed countries. According to market capitalization (World Development Indicators online database), the biggest security markets is in Poland. Budapest and Prague stock exchanges are similar in the size, and the capital markets with the smallest market capitalization are in Slovakia, Slovenia and Lithuania. This goes together with the structure of the sample. The data are dominated by Polish companies, which stand for 60% of observations. The rest of countries have following shares: 18% Czech Republic, 17% Hungary, 0,6% Lithuania, 2% Slovakia and 2% Slovenian companies. Because of the dominance of Polish companies, later on there is provided a reestimation of models excluding Polish observations. The average of earnings in analyzed samples is higher in Eastern European countries, than Western European countries, what is surprising evidence, since it is expected that companies are more profitable in better developed countries. But on the other hand, the volatility of returns is higher in Eastern sample, what means that the high returns in emerging markets are connected with higher volatility. Median of earnings are comparable to each other. Within three analyzed Eastern European countries the average earnings are the highest in Hungary and the lowest (negative) in the Czech Republic.

Table 6. Basu model. Descriptive statistics and number of observations for Western and Eastern European sample for period 1994-2008

A. Descriptive statistics

Variable	Mean	Median	Std Dev.	Min	Max	N	N with outliers
<i>Western European countries</i>							
<i>NI</i>	0,0090	0,0451	0,2353	-2,1828	1,9086		
<i>R</i>	0,1015	0,0306	0,6985	-0,9874	37,3217	18673	18819
<i>R*D</i>	-0,1346	0,0000	0,2157	-0,9874	0,0000		
<i>Eastern European countries</i>							
<i>NI</i>	0,0494	0,0682	0,2712	-2,0222	2,2164		
<i>R</i>	0,2711	0,1025	0,8609	-0,9320	9,7950	2161	2192
<i>R*D</i>	-0,1366	0,0000	0,2236	-0,9320	0,0000		
<i>Czech Republic</i>							
<i>NI</i>	-0,0001	0,0791	0,5185	-3,7359	2,3009		
<i>R</i>	0,1391	0,0642	0,5259	-0,8181	2,1699	391	395
<i>R*D</i>	-0,1299	0,0000	0,2015	-0,8181	0,0000		
<i>Hungary</i>							
<i>NI</i>	0,0624	0,0755	0,1813	-0,7189	0,9287		
<i>R</i>	0,1234	0,0425	0,5498	-0,8646	2,7947	373	379
<i>R*D</i>	-0,1409	0,0000	0,2128	-0,8646	0,0000		

<i>Poland</i>							
<i>NI</i>	0,0513	0,0636	0,2326	-1,6610	1,5346		
<i>R</i>	0,3485	0,1322	0,9975	-0,9320	9,7950	1304	1326
<i>R*D</i>	-0,1416	0,0000	0,2342	-0,9320	0,0000		

B. Observations by year and country

	Western countries	Eastern countries	CZE	HUN	LTU	POL	SVK	SVN
1994	983	15	0	7	0	8	0	0
1995	968	20	0	7	0	13	0	0
1996	955	62	12	13	0	37	0	0
1997	1124	109	43	23	0	42	1	0
1998	1185	125	51	25	0	46	4	0
1999	1280	136	50	29	0	56	3	0
2000	1409	159	43	36	0	76	3	0
2001	1558	161	41	34	0	81	4	1
2002	1484	148	33	32	0	79	3	1
2003	1365	158	30	33	0	87	3	3
2004	1339	187	27	28	1	122	4	5
2005	1317	213	18	26	3	151	6	8
2006	1342	252	19	25	4	190	6	6
2007	1396	272	17	30	4	208	5	9
2008	968	144	7	25	2	108	1	1
Total	18673	2161	391	373	14	1304	43	34

Table 3 reveals the number of observations by year and the country. First evidence is that the number of observations is very low for Eastern European countries at the beginning of analyzed period. This can cause some problems connected with biased data regarding first years, when the number of observations is so low it is difficult to say, without doubts, that these companies are good representatives of all companies, since these companies are represented by such a small sample.

Chapter VII. Empirical results

Here below the results of my analysis are provided. Firstly, I focus on the analysis of unconditional and conditional conservatism in Western and Eastern Europe. Later on I measure conservatism separately for Czech Republic, Hungary and Poland. The second part of this chapter focuses on the influence of institutional factors on conditional conservatism in Eastern Europe.

VII.1 Estimations of accounting conservatism across regions and countries

VII.1.1 Unconditional conservatism

The main purpose of this paper is to research accounting conservatism in Eastern Europe. Table 7 reveals results regarding hypothesis 1: “There is unconditional conservatism in post-communist countries”. Table 7 presents the market-to-book ratio for Western and Eastern European regions and also for countries, which the number of observations is higher than 100 for period 1994-2008.

Table 7. Results for market-to-book ratio for chosen regions and periods

The table presents market-to-book ratio computed in following way $MTB = \Sigma MV / \Sigma BV$, where
MV- market capitalization
BV- shareholders equity

Region \ Period	1994-2008	1994-2001	2002-2008	2002	2003	2004	2005	2006	2007	2008
Western Europe	2.05	2.38	1.82	1.60	1.86	1.85	1.91	2.09	2.08	1.31
Eastern Europe	1.78	1.40	1.93	1.17	1.42	1.82	2.10	2.48	2.64	1.29
Poland	1.97	1.74	2.03	1.45	1.77	2.06	2.07	2.62	2.56	1.21
Czech Republic	1.39	0.86	1.80	-	-	-	-	-	-	-
Hungary	1.90	2.09	1.82	-	-	-	-	-	-	-

The first column of Table 7 reveals a value of the market-to-book ratio for a whole analyzed period. It shows that in the Western European region conservatism is stronger than in Eastern Europe for the analyzed period what confirms hypothesis 2 “Conditional and unconditional conservatism is stronger in Western-European countries than in post-communist countries” (regarding part about unconditional conservatism, later on there is provided evidence about conditional conservatism). The results also show that my expectations about hypothesis 1 are true, there is unconditional conservatism in Eastern Europe. The third and fourth columns divide the observations into two periods. The comparison between the two periods 1994-2001 and 2002-2008 shows that the market-to-

book ratio increased in Eastern Europe but in Western countries it had decreased. The detailed results are given for the period 2002-2008, and they show that in both regions market-to-book ratio had been increasing during the period 2002-2007. An exceptional is the year 2008. The reason for the decrease of market-to-book value in 2008 is probably the financial crisis, which influenced security markets all over the world. The change of the market-to-book ratio between 2007 and 2008 is, however, greater for Eastern European countries than for Western European countries, which confirms that this region is more vulnerable for changes in the financial markets.

The second part of Table 7 presents data for three Eastern European countries which have a number of observations higher than 100. Additionally, there is provided a market-to-book ratio for Poland for the years 2002-2008, because for these years the number of Polish observations is higher than 100. Between the three analyzed countries, Poland has the highest market-to-book ratio, the next one is Hungary and at the end the Czech Republic. In the period 1994-2001 one can notice big differences between Poland, the Czech Republic and Hungary. The Czech Republic's market-to-book ratio is lower than 1 which indicates a lack of conservatism. However, the market-to-book ratio increased in this country in the second analyzed period, similarly to the Polish case. The only country where market-to-book ratio decreased was Hungary. Poland is a country where yearly results could be obtained, because the number of observations is higher than 100 since 2002. The results show that conservatism was increasing during the period 2002-2007. Market-to-book ratio decreased due to a financial crisis similarly to Western and Eastern sample in 2008. Above results prove the truth of hypothesis 3 "There are differences in the level of unconditional and conditional conservatism in Eastern European countries" (part regarding unconditional conservatism).

VII.1.2 Conditional conservatism

In the previous section I presented results regarding unconditional conservatism in Eastern Europe. Hereafter I analyze results regarding conditional conservatism. Table 8 presents the outcome of the model $NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D$ for the Western European countries and Eastern European countries.

Table 8. Association between earnings and returns in Western and Eastern Europe

β_2 , β_4 and adjusted R^2 presents the results derived from the following model $NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D$, for country-year observations for years indicated in the first column. R^2 bad and R^2 good are derived from the models, where bad news (negative returns) are regressed on accounting income and good news (positive returns) are regressed on accounting income. In the last column there is presented number of observations. The values of the first row of each region in the second and the third column present the unstandardized coefficients; values in brackets in the second row are the t-statistics.

Period	β_2	β_4	Adj. R^2 [%]	$(\beta_2 + \beta_4) / \beta_2$	R^2 bad	R^2 good	N
<i>Western Europe</i>							
1994-2008	0.021*** (7.390)	0.309*** (28.801)	10.9	15.71	0.089	0.006	18673
1994-2001	0.012*** (3.790)	0.292*** (22.872)	11.9	25.33			9462
2002-2008	0.035*** (6.927)	0.310*** (17.754)	10.4	9.86			9211
<i>Eastern Europe</i>							
1994-2008	0.050*** (6.110)	0.182*** (4.840)	9.5	4.64	0.035	0.032	2161
1994-2001	0.069** (2.478)	0.325*** (4.554)	10.1	5.71			787
2002-2008	0.048*** (6.012)	0.084 (1.879)	9.3				1374
<i>Czech Republic, Hungary, Lithuania, Slovakia and Slovenia</i>							
1994-2008	0.115*** (3.128)	0.037 (1,069)	5.1				855
2002-2008	0.103** (2.631)	-0.040 (-0.296)	4.1				426

* significant on the level of 10% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 1% confidence level

The first finding is that the adjusted R^2 is higher for Western than Eastern European countries what stands for higher timeliness of accounting earnings in that region. The second; the incorporation of good news into earnings (measured by the R^2 of good news) is higher for Eastern European countries. The third; there is evidence that the asymmetric

timeliness of earnings (measured by the β_4 coefficient) is stronger in Western European countries than in Eastern European countries at the 1% significance level. The relative sensitivity of earnings to bad news compared with their sensitivity to good news is higher $((\beta_2 + \beta_3) / \beta_4)$ for the Western European sample than for Eastern European sample. The relation of the R^2 “bad” from the model consisting of observations with negative returns and the R^2 “good” from the model derived from observations with positive stock returns is higher than 1 (indicating conservatism in accounting) for the Western, Eastern and Polish samples. However the value of this relation is higher for Western countries (14.8) than for Eastern countries (1.1). It is worthwhile to notice that the level of conservatism in Poland is higher than for other Eastern European countries (see Table 9). Consequently, it is essential to check if the Polish observations which have the highest share in the sample do not overshadow the results regarding Eastern Europe. Indeed, looking at results derived from sample consisting of the Czech Republic, Hungary, Lithuania, Slovakia and Slovenia, it can not be said that there is conservatism in Eastern Europe. The results are provided also for the period 2002-2008, since it is expected that in the recent years, due to progress in transition and development of security markets, there would be conservatism in Eastern Europe. However, for this period the results are insignificant.

Results derived in this section regard hypothesis 2: “Conditional and unconditional conservatism is stronger in Western-European countries than in post-communist countries”. Both conservatisms show a higher level in Western Europe. The market-to-book ratio is higher for Western Europe than for Eastern Europe for periods 1994-2008 and 1994-2001. However, results show that market-to-book ratio is higher in Eastern Europe when the 2002-2008 period is taken into account. Nevertheless, my main purpose was to analyze the period 1994-2008, thus I can conclude that unconditional conservatism is higher in Western Europe. Regarding the Basu model’s results I conclude that Western Europe’s accounting is more conservative than Eastern Europe’s accounting. In fact, there is no evidence indicating accounting conservatism in Eastern Europe.

I mentioned in my objectives that I want to use two measures of accounting conservatism in order to check if the chosen methodology influences the results, and secondly if there are differences in the levels of conditional and unconditional conservatism in the analyzed regions. Although results derived from period 1994-2008 are similar, when I divide my sample in two periods, the results are opposite. The market-to-book ratio is higher for Eastern Europe than for Western Europe in the second period and results for the Basu model

are opposite; the conditional conservatism was higher in Western Europe than in Eastern Europe for the second period. These opposite results I can explain due to a biased measure of market-to-book ratio (Givoly and Hayn (2000)). I think that the results of the market-to-book ratio in the second period for Eastern Europe are biased by opportunities of growth. That is why the Basu model is a better measure of accounting conservatism. The growth opportunities in Eastern Europe are consistent with the descriptive statistics of stock returns in Table 6, where the average stock returns are higher for Eastern Europe. Eastern Europe has a higher opportunity of growth, but on the other hand the market risk and volatility of stock returns are also higher. This confirms the result for 2008 that the turbulences on the worldwide stock markets had a bigger impact on Eastern Europe than Western Europe in terms of market-to-book ratio.

After analysing the Eastern Europe as a whole sample, it is interesting to explore countries individually. The number of observations for the Czech Republic, Hungary and Poland allows me to conduct research separately for these countries. The Table 9 reveals the outcome.

Table 9. Association between earnings and returns in Eastern European countries

β_2 , β_4 and adjusted R^2 presents the results derived from the following model $NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D_{it}$, for country-year observations for periods indicated in the first column. R^2 bad and R^2 good are derived from the models, where bad news (negative returns) are regressed on accounting income and good news (positive returns) are regressed on accounting income. In the last column the number of observations is presented. The values of the first row of each region in the second and the third column present the unstandardized coefficients; values in brackets in the second row are the t-statistics.

	β_2	β_4	Adj. R^2 [%]	$(\beta_2 + \beta_4) / \beta_2$	R^2 bad	R^2 good	N
<i>Czech Republic</i>							
1996-2008	0.169** (2.220)	0.123 (0.580)	4.1	-	0.007	0.018	391
1996-2001	0.227 (1.649)	0.072 (0.272)	3.6	1.32			240
2002-2008	0.142 (1.579)	0.039 (0.074)	0.9	1.27			151
1999-2007	0,180** (2.061)	0.256 (0.733)	4.2	2.42			278

<i>Hungary</i>							
1994-2008	0.072*** (2.880)	0.046 (0.720)	12.9	-	0.013	0.046	373
1994-2001	0,097** (2.561)	0.092 (1.011)	13.0	1.95			174
2002-2008	0.051 (1.537)	0.002 (0.022)	14.9	1.04			199
1999-2007	0,069** (2.170)	0,247** (2.364)	14.5	4.60			273
<i>Poland</i>							
1994-2008	0.032*** (4.261)	0.178*** (4.507)	12.4	6.56	0.038	0.029	1304
1994-2001	0,065** (2.219)	0.413*** (4.602)	15.8	7.35			359
2002-2008	0.028*** (3.772)	0.101** (2.331)	11.5	4.61			945

* significant on the level of 10% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 1% confidence level

Comparing Eastern European countries, the first finding is that the timeliness of accounting earnings is the highest in Hungary ($\text{Adj. } R^2$). Secondly, the incorporation of good news into earnings is the highest for the Czech Republic and the lowest for Poland (β_2). Further on, only in Poland there is evidence at the 1% significance level that there is asymmetric timeliness of earnings. The results for Hungary and the Czech Republic are insignificant; it means that there is no evidence of asymmetric timeliness of earning. The relative sensitivity of earnings to bad news compared with their sensitivity to good news is higher than 1 in Poland (the calculation is not provided for the Czech Republic and Hungary, since the coefficients are not significant), and the last measure of conservatism: the relation of the power of the regression in periods of bad news (negative returns) to the power of the regression in periods of good news (positive returns) is higher than 1 only in the Polish case. Similarly to the Western and Eastern sample, I divided observations for Eastern European countries for two periods in order to check if there are differences between two periods. The results for two periods do not differ from the outcome derived from the whole period (a lack of evidence for conservatism in Hungary and Czech Republic in both periods, and the positive β_4 on the significant level in the case of Poland, indicating conservatism in this country). However, I found interesting evidence (β_4 is positive at a 5% significance level)

that there was conservatism in Hungary for the years 1999-2007. Further on I didn't find significant evidence of existing of conditional conservatism in Czech Republic for any period holding years 1996-2007*.

I believe that there are two main drivers of the obtained results in Table 9. It is the way of handling the transitional process by post-communist Eastern European countries and the tax regulations in these countries. The results for the beginning of the analyzed period are determined by the first driver. In the Czech Republic a lack of an institutional framework around the security market, which developed very quickly, is a reason for the lack of conservatism at the beginning of the period in the Czech Republic and Hungary. Poland had a different attitude. This country firstly developed regulations based on the Western standards, which some criticized for overambitious goals, because they were difficult to fulfil by companies which just started to learn about capital markets (OECD 1998). However, it was probably the most important reason why there was accounting conservatism in Poland and not in Hungary or the Czech Republic. Nowadays, the security market's regulations have improved also in Hungary and Czech Republic. There is evidence of accounting conservatism for the period 1999-2007 in Hungary. Here comes the second factor which influences the results for Eastern European countries. It is tax regulations. The results from the Czech Republic are similar to those found in a paper by Jindrichovska and McLeay (2007). They also found evidence that there is no asymmetric timeliness in earnings. The reasons of these particular results are seen in the transitional nature of the Czech market and restrictive tax regulations, which diminish incentives for conservatism. It is worthwhile to note that the Czech Republic has the highest coefficient of stock returns (good news), which indicates that the timeliness of earnings is the highest in this country. This can indicate that strict tax requirements reinforce the incentives of companies to recognize all events in a timely matter. The specific Czech regulations regard limitations on provisioning, depreciation and deferred taxation. Companies that do not fill the requirements (e.g. reduce their tax base) can also face penalties (Jindrichovska and McLeay, 2007). The results for Poland are in accordance with the paper of Jermakowicz and Gornik-Tomaszewski (1998),

* I run a Basu model couple of times for Hungary and Czech Republic, in such a way that I excluded 2008 and I was consequently excluding the years at the beginning of analyzed period. I found that periods like 1999-2007, 2000-2007, 2001-2007 give evidence on the significant level that there is asymmetric timelines of earnings in Hungary, however I have not found similar results for Czech Republic, and coefficient β_4 was every time insignificant for Czech sample. In the Table 9 for simplicity sake there are provided only results for 1999-2007.

who researched the relation of stock returns and earnings. They found out that this relation is similar to the mature markets and the results are comparable to the research conducted on the US market by Easton and Harris (1991). The lack of evidence of conservatism in the Czech Republic, even when I take more recent periods into analysis, is driven by a very strict tax system in this country. Overall, I can conclude that in the Eastern Europe the main drivers of conservatism are institutional settings (like tax and security market regulations). In these countries the costs of establishing adequate regulations by market players are too high (it was hoped that regulations will be established by players in the Czech Republic; it was a mistake and the government realised at the end of 90's that this is its role to establish a legal framework and regulatory bodies). The results regarding Poland, Hungary and Czech Republic confirm hypothesis 3: "There are differences in the level of unconditional and conditional conservatism in Eastern European countries". These countries, despite of their common communist past, differ in the level of conditional conservatism, and these differences result from the diverse way of handling the transitional process and establishing regulations. Poland is the most conservative country while there is a lack of evidence of existence of conditional conservatism in the Czech Republic.

Significance of differences between countries

In the previous part the differences between coefficients of two regions and countries were analyzed. However, it does not say how significant these differences are. Giner and Rees (2001) measure the significance of differences by a statistic test, computed as $(X_1 - X_2) / \sqrt{(\sigma_1^2 + \sigma_2^2)}$, where X_i is the estimated coefficient and σ_i is the standard error for variable i . The values of the statistics are shown in the Table 10. The differences between Western and Eastern Europe are significant at a 1% level; however, the results for Eastern countries individually indicate that there are no significant differences in the coefficients between these countries.

Table 10. Statistical tests of the differences between the various coefficients for analyzed regions

Values of standard errors and coefficients are provided in APPENDIX III

	β_2	β_4
Western and Eastern Europe	-3,394***	3,210***
Czech and Hungary	-0,305	-0,347
Czech and Poland	-1,241	0,255
Hungary and Poland	-0,477	1,7613

* significant on the level of 10% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 1% confidence level

VII.2 Estimations across various institutional factors

Table 11 represents descriptive statistics and the correlation matrix for the institutional factors which are analyzed. This provides better understanding of proxies and gives information about correlations between these variables. Institutional factors are incorporated into the model as dummy variables. APPENDIX II shows how specific year-country observations were assigned (high or low). Table 11 part A shows descriptive statistics of ratings for institutional factors within the analyzed countries and years. Based on Table 5 A there is evidence that the institutional factors within the analyzed period and countries are similar. The means are similar; standard deviations are small, which confirms a low variation of institutional factors within the analyzed sample. The above characteristics are the consequences of a couple of factors. First of all, the sources of ratings are usually the same and they use a similar scale in their ratings. Secondly, the chosen sample is similar due to the choice of countries which are analyzed in the research. Lastly, the number of analyzed countries is small, due to a lack of data for other countries. The low variation within the institutional factors is one of the limitations of the research, which can have consequences on the significance of results. However, the usage of dummy variables aims to reduce this limitation, as countries are assigned as having a low or high score in the rating.

Table 11. Characteristics of institutional factors**A.** Descriptive statistics

	Mean	Median	St. Dev.	Min	Max	Count
TRANSP	3,66	3,72	0,20	3,28	3,94	68
SECLAW	3,13	3,00	0,52	2,00	4,00	68
EQMEXP	1,79	1,50	0,69	1,00	3,50	68
LAW	4,73	4,60	0,95	3,00	6,77	68
PTECON	2,60	2,50	0,91	1,50	4,50	68
TAX	4,09	4,00	1,92	1,50	10,00	68

B. Correlation matrix

Under the Pearson correlation values, there presented the value of sigma 1-tailed in brackets

	TRANSP	SECLAW	EQMEXP	LAW	PTECON	TAX
TRANSP	1.00					
SECLAW	0.61 (0.000)	1.00				
EQMEXP	0.07 (0.280)	0.36 (0.001)	1.00			
LAW	-0.36 (0.001)	-0.13 (0.143)	-0.01 (0.452)	1.00		
PTECON	-0.81 (0.000)	-0.44 (0.000)	-0.13 (0.147)	0.45 (0.000)	1.00	
TAX	0.53 (0.000)	0.13 (0.154)	-0.16 (0.098)	-0.40 (0.000)	0.39 (0.000)	1.00

The problem, which takes place in cross-country research, is the high correlation between factors. One can notice the problem as well in this research. Especially high correlations regarding to the transitional process with security law and the transitional process with political economy. The reason for the first relation is that basically transition process indicators include partly also a development of security law, because it shows the level of development in post-communist countries towards advanced markets. If a country develops properly then all its aspects develop in the same direction as well. On the other hand, a high negative correlation between political economy and transitional process is caused by two factors. First of all, the transitional process aims to diminish the role of state in economy. Second the political economy stands for the share of the state in GDP and intervention through subsidies and transfers, which are decreasing alongside with the transitional progress. The second relation, which can be noticed, is that the Law enforcement indicator

(LAW) is negatively correlated with the rest of the indicators. It provides evidence that impartiality of the law in post-communist countries has not gone together with the progress made in the transition process. In order to diminish the influence of high correlations between institutional indicators, they are incorporated into the model separately, and after that the model is run with all institutional variables.

Table 12. Evidence on the influence of legal and political institutions on asymmetric timeliness of earnings in Eastern Europe

The following table presents select coefficients and test statistics of estimations from the model

$$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D + \beta_{11} CCD + \beta_{21} R_{it} CCD + \beta_{31} D_{it} CCD + \beta_{41} DR_{it} CCD$$

The sample holds observations from Czech Republic, Hungary, Lithuania, Poland, Slovakia and Slovenia available for period 1994-2008. In the first rows unstandardized coefficients are presented, the second rows provide t-statistics.

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
TRANSP	0.086*** (5.355)	-0.067*** (-3.421)	0.369*** (5.675)	-0.328*** (-3.875)	10.20%
EQMEXP	0.045 (1.091)	-0.064 (-0.827)	0.242 (1.671)	-0.026 (-0.574)	7.60%
LAW	0.038*** (3.815)	0.028 (1.032)	0.041 (0.743)	0.284*** (3.234)	8.10%
SECLAW	0.044 (0.425)	-0.003 (-0.032)	0.314 (1.313)	-0.153 (-0.630)	7.50%
PTECON	0.029*** (2.962)	0.069*** (2.569)	0.097* (1.866)	0.199** (2.217)	8.80%
TAX	0.075*** (5.357)	-0.058*** (-3.147)	0.369*** (5.790)	-0.344*** (-3.992)	9.10%

*** significant on the level of 1% confidence level

** significant on the level of 5% confidence level

* significant on the level of 10% confidence level

Table 12 provides evidence about the relation of institutional factors and the timeliness of earnings. First of all the results for the transitional process are significant and they show that the transitional process causes lower timeliness of earnings (β_2 and β_{21}) and lower incremental bad news sensitivity (β_4 and β_{41}). This contradicts hypothesis 4: “Asymmetric timeliness of earnings is higher in the countries with a higher progress in transitional process”. The reason why the outcome for the transitional process is different from my expectations is that there was a negative relation between the development of capital markets and the speed of privatization of state-owned –enterprises, which is the main element of the TRANSP proxy. The rapid privatization which was the main indicator of the progress of the transitional process was connected with a lack of setting up proper regulations. On the other hand high standards of security law was a main driver of conservative accounting.

Furthermore, high standards constrained privatization and the development of private enterprises due to difficult access to capital markets, as was the case in Poland (further information about the relation of development of capital markets and method of privatization is in Chapter II: “Institutional settings”).

The results for equity market exposure are insignificant, so the coefficients can not really be interpreted; the reason why the outcome from Equity market exposure is insignificant can be connected to the underdeveloped security markets in the countries analyzed. The security markets are still unstable and vulnerable to outside factors (Schroder, 2000). This can be a reason why the results are not significant. Further on, in the paper of Blommestein (1998, OECD report) it is indicated that the cost of establishing bodies and regulations encouraging conservatism was too high, this can be also the reason why despite of higher market exposure of listed companies do not encourage accounting conservatism, because development of market did not go alongside with development of regulations. Based on this result I do not find significant evidence, which proves hypothesis 4: “Asymmetric timeliness of earnings is higher in the countries with higher market exposure”.

Table 12 provides evidence that countries with impartial courts (clear legal framework) have a higher incremental sensitivity to bad news. Since the companies face the threat of litigation from investors rather in case when the earnings are overvalued than opposite, this threat is more probable in countries where the legal system is clear and enforceable. It is reasonable that companies recognize their “bad news” quicker in countries with high legal standards. The result is on a significant level. Furthermore, there is no evidence of the influence of the legal framework on good news sensitivity since the results are not significant. The outcome confirms my expectations regarding hypothesis 5: “Asymmetric timeliness of earnings is higher in countries with strong legal system”.

There is no evidence about the influence of security law on the timeliness of earnings, since the results are not significant. However, there is a reason to do some further research by changing the construction of the dummy variable. The way it is done in previous analysis causes that there are 79 observations with 0 values of the dummy, and 2080 with 1. This can be a reason of insignificant results regarding the security market in the previous analysis. Hereafter the results are presented for the model when the dummy variable is constructed in such a way that the dummy equals 1 when the country-year score is greater (but not equal) to

the median of the sample. This method increases the number of observations with the dummy variable value of 0 to 473. The results of this model are presented in the Table 13.

Table 13. Results for security law after reestimation of the dummy variable

$$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D + \beta_{11} SECLAW + \beta_{21} R_{it} SECLAW + \beta_{31} D_{it} SECLAW + \beta_{41} DR_{it} SECLAW$$

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
Security Law	0.117*** (3.854)	-0.083** (-2.600)	0.195 (1.946)	-0.041 (-0.375)	8.20%

*** significant on the level of 1% confidence level

** significant on the level of 5% confidence level

* significant on the level of 10% confidence level

The results after the correction of the SECLAW dummy variable are consistent with the expectation stated in hypothesis 6: “Asymmetric timeliness of earnings is higher in countries with strong security law”. The table shows evidence that countries with high quality of security law recognize good news slower, at a significant level. However, based on the results there is no evidence how security law influences the recognition of bad news since the results are insignificant. The change in construction of the dummy variable improves the result and confirms the hypothesis. The improvement of the dummy variable was certainly justifiable, since previously the observations were in majority assigned to high quality of security law, and it was impossible to get significant results.

The results regarding political economy are as follows: The sensitivity of good news is higher in countries with high risk of expropriation at a 1% significance level. The result shows that companies operating in countries, which have a higher risk of expropriation, incorporate good news faster than countries with a low risk of expropriation. On the other hand, incorporation of bad news is also quicker in high risk of expropriation countries on the significance level 1% and 5%. Because post-communist countries are considered as non-benevolent countries[†], which takes over companies, that perform well the higher coefficient β_{41} than β_4 , confirms that companies in countries with a high risk of expropriation undervalue their earnings by quicker incorporation negative events. On the other hand, a higher β_{21} than β_2 is not consistent with the assumption that Eastern European countries are non-benevolent countries. The results show that countries with high PTECON incorporate good news faster but that the incremental bad news sensitivity is also higher. Then, it is hard

[†] The term of benevolent and non-benevolent state is explained in Chapter V

to assess which direction of the influence of political economy is stronger. Based on the results I can conclude that hypothesis 7 “Asymmetric timeliness of earnings is higher in countries, where is a high risk of expropriation” is confirmed, because incremental speed of bad news recognition relative to good news recognition is higher for countries with high risk of expropriation than for countries with low risk of expropriation (β_{41}).

The findings regarding tax regime are opposite to stated hypothesis 9 “Asymmetric timeliness of earnings is higher in countries with strong tax regime”, but confirm the expectations about the influence of this aspect on conservatism in post-communist countries. The result verifies that in countries with strict tax regimes, there is no conservatism but rather aggressive accounting (negative coefficient β_{41} on the significant level). It provides evidence that the tax regime has a significant influence on conservatism in post-communist countries, which confirms a brief divagation of Jindrichovska and McLeay (2007) about the reasons of the lack of conservatism in the Czech Republic. However, a high burden of tax results also in slower good news recognition may prove that the tax regulation encourages conservatism, as expected by Bushman and Piotroski (2006). Nevertheless, the results present that β_{41} is negative on the significance level of 1%, which does not confirm hypothesis 9: “Asymmetric timeliness of earnings is higher in countries with strong tax regime”. Some further research in this aspect is required, since the coefficient of good news in countries with a high tax burden is lower than in countries without a strict tax regime on the 1% significance level.

The next section provides results when the model embodies all institutional factors at once.

Table 14. The model with all institutional variables incorporated in the model

The adjusted R^2 for model is 11.1%. In brackets are provided t-statistics. The red font indicates results, which are not significant in this model, but they were significant when the institutional factors were analyzed separately. The model is as follows:

$$\begin{aligned}
 NI = & \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D \\
 & \beta_{11} CCD + \beta_{21} R_{it} TRANSP + \beta_{31} D_{it} TRANSP + \beta_{41} DR_{it} TRANSP \\
 & \beta_{12} EQMEXP + \beta_{22} R_{it} EQMEXP + \beta_{32} D_{it} EQMEXP + \beta_{42} DR_{it} EQMEXP \\
 & \beta_{13} LAW + \beta_{23} R_{it} LAW + \beta_{33} D_{it} LAW + \beta_{43} DR_{it} LAW \\
 & \beta_{14} SECLAW + \beta_{24} R_{it} SECLAW + \beta_{34} D_{it} SECLAW + \beta_{44} DR_{it} SECLAW \\
 & \beta_{15} PTECON + \beta_{25} R_{it} PTECON + \beta_{35} D_{it} PTECON + \beta_{45} DR_{it} PTECON \\
 & \beta_{16} TAX + \beta_{26} R_{it} TAX + \beta_{36} D_{it} TAX + \beta_{46} DR_{it} TAX
 \end{aligned}$$

For the simplicity the coefficients of dummies and intercept are not provided

	β_{2n}	β_{4n}
Rit	0.008 (0.076)	0.327 (1.058)
TRANSP	-0.012 (-0.339)	-0.403*** (-2.742)
EQMEXP	0.081 (1.538)	0.185 (1.073)
LAW	-0.034 (-0.874)	0.127 (1.023)
SECLAW	-0.009 (-0.088)	-0.062 (-0.241)
PTECON	0.094** (2.470)	-0.114 (-0.808)
TAX	-0.061* (-2.126)	-0.069 (-0.513)

*** significant on the level of 1% confidence level

** significant on the level of 5% confidence level

* significant on the level of 10% confidence level

Table 14 shows that the results regarding institutional factors are significant in a lower number of cases. It was one of the reasons to use a model where institutional factors are analyzed separately. The outcome in Table 14 is similar to outcome presented in Table 12 in the case of transitional process for bad news, political economy for good news coefficient, and for tax also for good news. The outcome shown in Table 12 and Table 14 are not contradicting since the results which have opposite coefficients are not significant, for example for political economy in the Table 12 the coefficient β_4 was positive, but in the model where all variables are incorporated the result is negative but insignificant, so it does not contradict previous results.

VII.3 Further evidence on institutional factors

I explained the way of construction proxies of institutional and political factors in Chapter VI. Some of these proxies include couple of ratings. Thus, it is an interesting to check which elements of institutional proxies have significant contribution in the explanations of influence of these factors on asymmetric timeliness of earnings.

Further evidence on the transitional process

Table 15 presents the results for the elements which constitute the proxy for transitional process.

Table 15. Detailed results for transitional process

$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it}D + \beta_{11} \text{TRANSP} + \beta_{21} R_{it} \text{TRANSP} + \beta_{31} D_{it} \text{TRANSP} + \beta_{41} DR_{it} \text{TRANSP}$
Where TRANSP stands for the dummies of specific ratings used to construct a proxy for transitional process and which are presented in the first column of the following table.

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
Large scale privatization	0.032* (3.268)	0.087* (2.802)	0.178* (3.472)	-0.080 (-0.864)	7.90%
Small scale privatization	0.050 (0.588)	-0.009 (-0.109)	0.092 (0.388)	0.077 (0.318)	7.60%
Enterprise restructuring	0.060** (1.964)	-0.022 (-0.679)	0.242* (2.787)	-0.102 (-1.025)	7.90%
Price liberalization	0.087* (5.342)	-0.067* (-3.422)	0.386* (5.821)	-0.343* (-4.026)	10.30%
Competition policy	0.089* (2.837)	-0.053 (-1.631)	0.220** (2.445)	-0.073 (-0.711)	7.90%
Banking reform and interest liberalization	0.042 (1.070)	0.000 (-0.024)	0.351* (2.876)	-0.211 (-1.624)	7.60%

* significant on the level of 1% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 10% confidence level

The results are significant for the large scale privatization, (β_{21}) and price liberalization (β_{21} and β_{41}). Although the results for large scale privatization are not surprising since the reform of these companies is an important issue, because these companies are mainly listed on the stock exchange (they are the subject of this analysis) and their process of transformation towards free market economy play important role. The results significantly show that the countries, where the large scale privatization is more advanced, companies recognize good news quicker. The model with price liberalization has the highest explanatory power of 10.3%. On the other hand it is difficult to find a theoretical background of the relation

accounting conservatism and price liberalization. However, it is the factor which influences the most the results of the transitional process' and accounting conservatism. Possibilities for further research would be the construction of a more appropriate proxy for transitional process, which holds the factors, that have a more direct and clear connection with accounting conservatism.

Further evidence on equity market exposure

Table 16. Detailed results for equity market exposure

$$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D + \beta_{11} EQMEXP + \beta_{21} R_{it} EQMEXP + \beta_{31} D_{it} EQMEXP + \beta_{41} DR_{it} EQMEXP$$

Where EQMEXP stands for the dummies of specific ratings used to construct a proxy for equity market exposure and which are presented in the first column of the following table.

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
Market capitalization/GDP	0.042* (4.616)	0.298 (1.345)	0.489* (7.176)	-0.261 (-1.335)	9.50%
IPO/population	0.025* (2.453)	0.089* (3.794)	0.096** (2.019)	0.335* (3.304)	9.00%

* significant on the level of 1% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 10% confidence level

The dummy variable for the IPO/population is computed as follows: dummy equals 1 when the IPO/population for a certain country-year is higher or equal then the average for whole sample. This is a different method because for many country-year observations the value of IPO/population was 0, then the median for sample was 0. However, in this way a sample would consists of observations only with dummy of 1, since the number of IPO can not be negative.

The results are significant for the factor IPO/population. The higher number of IPO/population influences both the recognition of good and bad news on a significant level. The higher β_{41} confirms that companies, where the exposure to the market is more significant, recognize bad news quicker due to a litigation threat. However the quicker recognition of good news can not be explained by incentives of conservatism. Although it can be explained by the general development of accounting in post-communist countries. As it was described at the beginning of this paper, the aim of accounting was to report about amounts of production, costs etc., and it didn't have the purpose to represent a true and fair view of companies' nature. That is why the higher coefficient β_{21} is connected probably with

the fact that companies try to recognize their future revenues in a more timely manner than was done in the previous regime.

Further evidence on Political economy

Table 17. Detailed results for political economy

$$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D + \beta_{11} PTECON + \beta_{21} R_{it} PTECON + \beta_{31} D_{it} PTECON + \beta_{41} DR_{it} PTECON$$

Where PTECON stands for the dummies of specific ratings used to construct a proxy for political economy and which are presented in the first column of the following table.

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
Transfers and subsidies in GDP	0.031*	0.072**	0.109**	0.218**	8.70%
	(3.192)	(2.483)	(2.239)	(2.252)	
Public sector's share in GDP	0.126*	-0.092*	0.031	0.164	7.80%
	(3.909)	(-2.747)	(0.334)	(1.559)	

* significant on the level of 1% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 10% confidence level

The results for transfers and subsidies in GDP are significant for good and bad news. The outcome shows that countries where the transfers and subsidies in GDP were high, the recognition of good news and incremental bad news sensitivity were higher. The influence of political economy measured by the public' sector's share in GDP only influences significantly the recognition of good news. The recognition of good news is significantly lower in the countries where risk of expropriation is higher, which is consistent with expectations about non-benevolent state.

Further details about tax regimes, quality of law and security law are not provided since these proxies are constructed from a single rating, then any deeper analysis is not required.

VII.4 Robustness test

The second robustness test regards the results of institutional factors. In order to interpret the influence of country specific settings dummy variables were constructed. However, while they are easier to interpret, they can also bias the results, since the way how one constructs the dummy (based on the median, average etc.) changes the results. On the other hand using the exact value of ratings makes it more difficult to interpret results and also biases results, since the methodology of the ratings is often a matter of subjectivity. Nevertheless, the results for the model incorporating the exact value instead of a dummy are provided in Table 18.

Table 18. Robustness test for institutional factors

The following table presents select coefficients and test statistics of estimations from the model

$NI = \beta_1 + \beta_2 R_{it} + \beta_3 D_{it} + \beta_4 R_{it} D + \beta_{11} CCD + \beta_{21} R_{it} CCD + \beta_{31} D_{it} CCD + \beta_{41} DR_{it} CCD$. The red font indicates results, which are not significant in this model, but they were significant when the institutional factors were analyzed or opposite (the case of EQMEXP). In the first rows unstandardized coefficients are presented, the second rows provide t-statistics.

	Good news		Incremental bad news sensitivity		Adj R2
	β_2	β_{21}	β_4	β_{41}	
TRANSP	0.646** (2.295)	-0.163** (-2.152)	3.822* (3.513)	-0.988* (-3.362)	8.70%
EQMEXP	0.207** (2.504)	-0.085** (-2.013)	0.897* (4.349)	-0.348* (-3.345)	9.90%
LAW	-0.450 (-0.907)	0.022*** (1.763)	0.086 (0.434)	0.016 (0.355)	7.60%
SECLAW	0.362** (2.397)	-0.089** (-2.126)	0.234 (0.552)	-0.022 (-0.184)	7.80%
PTECON	-0.008 (-0.002)	0.022 (1.407)	0.000 (-0.002)	0.069 (1.172)	7.80%
TAX	0.153* (3.727)	-0.026* (-2.776)	0.756* (4.485)	-0.141* (-3.553)	8.90%

* significant on the level of 10% confidence level

** significant on the level of 5% confidence level

*** significant on the level of 1% confidence level

The results aim to check whether the construction of the dummy variable did not bias the outcome presented in Table 12, so the sign and significance of coefficients are compared. First of all the results for the transitional process are consistent with previous one, as β_{21} β_{41} are negative and are significant. For equity market exposure the coefficients have the same sign but the result in this case are on the significant level of 5% and 1%. The negative β_{21} is consistent with the litigation exposure of companies, which are more cautious about the recognition of good news. However, the lower incremental bad news recognition is evidence of lack of conservatism. The results for LAW contradict the Table 12, showing a lower β_{41} on the significance level of 1%. Nevertheless, the results above show a higher β_{21} on the significance level of 10%. The results for security law in are not consistent with this one in Table 12, but they are consistent with the results in Table 13 in the case of good news and for bad news the above results are not significant. For the political economy the results are similar, however, when the exact value of ratings is taken into account (Table 18) the results are insignificant. The outcome for the TAX is consistent in terms of signs and significance of coefficients. Based on this robustness test I conclude that the dummy variable improved the quality of results, since the coefficients were more significant and the results were easier

to interpret. Generally the robustness test confirms that using dummy variable did not bias the outcomes.

Conclusions and summary

Summary

Accounting conservatism has many definitions. It is the average under-estimation of book value (Felthman and Ohlson (1995)). A different definition says that it is the more timely recognition of bad news than good news (Basu (1997)). The phenomenon of accounting conservatism was widely researched in developed countries, however emerging markets like in Eastern Europe were rarely a subject of analysis. I found it interesting and useful to explore accounting conservatism in Eastern Europe and the influence of institutional factors. This research is valuable for investors, policy regulators and academics. It answers many questions like whether financial reporting is conservative in Eastern Europe or how to create regulations which overcome the influence of institutional settings. This paper contributes to the analysis of Bushman and Piotroski (2006), Jindrichovska and McLeay (2005) and Martikainen and Tilli (2007), because it focuses on Eastern Europe and on institutional factors.

I investigated Eastern European countries which have already joined the European Union and had a communist regime in the past. The subjects of my analysis were the Czech Republic, Hungary, Poland, Lithuania, Slovakia and Slovenia. I collected a significant number of observations with which to analyze separately accounting conservatism in Poland, the Czech Republic and Hungary. I measured unconditional conservatism using the market-to-book ratio and Basu's conditional conservatism model. The period of my analysis was limited to the years 1994-2008.

Based on my results I conclude that accounting conservatism is more highly expressed in Eastern Europe than Western Europe. I also found that there is no conditional conservatism in Eastern Europe, but there is in Poland. The outcome shows that the transitional process, security law, law in general, and the tax regime influence the level of conditional conservatism.

Conclusions

At the beginning of this paper I stated that the objective of this research is to analyze conservatism in accounting in post-communist countries of Central and Eastern Europe, which are members of the European Union and to identify institutional factors which have

influenced conservatism in these countries. I believe that I fulfilled my objective by answering the research questions and checking the stated hypothesis.

Hereafter, I will shortly recall the results of my research which was widely described in Chapter VII. First of all, my main research question was "Is there accounting conservatism in Eastern Europe?". After the analysis I conducted I can answer: yes, there is unconditional conservatism (measured by the market-to-book ratio) in Eastern Europe. On the other hand I did not find evidence confirming the existence of conditional conservatism in Eastern Europe. I compared the results for Eastern Europe with the results for Western Europe, and I concluded that accounting conservatism is represented more brightly in Western European countries

I also found answers for more detailed sub-questions in my research. Regarding my first sub-question "Does accounting conservatism differ across Eastern Europe?" I found that the level of conditional conservatism differed in the three countries analyzed. First of all, evidence at the 1% significance level indicates the existence of conditional conservatism in Poland for the whole analyzed period 1994-2008. Secondly I could not find evidence for conditional conservatism in the Czech Republic for any of the analyzed periods. Further on I found significant evidence at the level 95% that there is conditional conservatism in Hungary during the years 1999-2007. The differences between Eastern European countries I assigned to the different ways of handling the privatization process and setting up regulatory frameworks, which had an influence on the development of capital markets, and secondly to a strict tax regime. I also checked the significance of differences between the levels of conservatism. I found that the level of conservatism between West and East differs significantly (at a significance level of 1%). On the other hand the difference between the Czech Republic, Hungary and Poland did not differ significantly.

My second sub-question was as follows: "Does the transitional process influence accounting conservatism in Eastern Europe?". Hypothesis 4 was aimed at answering this question. I found significant evidence (1% significance level), which contradicts my expectations, about the influence of the transitional process on the level of conditional conservatism. The evidence shows that the progress of transition discourages conservatism. The justification for this result is that countries, which quickly privatized state-owned enterprises (which is one of the most important elements of the transitional process) did not prepare a proper regulatory framework. On the other hand countries which chose a gradual method of privatization, firstly focused on regulations and then on privatization. Thus the results indicate that

progress in the transitional process (quick privatization) discourages conservatism, due to a lack of regulatory preparation and transparency in the capital markets. It seems then that the regulations are the main incentive for accounting conservatism in Eastern Europe. The results are consistent with the outcome of hypothesis 7 regarding security laws.

My last research sub-question verifies whether institutional factors influence accounting conservatism in Eastern Europe. First of all I did not find significant evidence that equity market exposure encourages accounting conservatism and I justify this by pointing out the vulnerability of equity markets in emerging markets, which overshadow the results. The second institutional factor which I analyzed was the quality of law. I found evidence at the significance level of 10% that the impartiality of the legal system encouraged conditional conservatism in Eastern Europe, which is in accord with my expectations. After the quality of law I researched another regulatory aspect: security law. In this case I also found at the significance level of 5% that higher standards of security law positively influence the level of conservatism; more specifically it slows down the recognition of good news. These two outcomes were in accordance with my stated hypothesis. Hypothesis 8 about the influence of political economy was proven at the significance level of 5%. I found that the risk of expropriation by the state discouraged conservatism (slower good news and slower bad news recognition) which is consistent with the definition of the less than benevolent government. The results for the tax regime's influence on conditional conservatism was opposite to my expectations; however it is justifiable, since high tax burdens are so strong in these countries. This means that companies do not try to underestimate their earnings, but rather they try to recognize them in a timely manner due to the danger of penalties.

In conclusion, I researched unconditional and conditional conservatism in Eastern Europe, and I found that there is unconditional conservatism in this region, but not conditional conservatism. I also found that for Eastern Europe the most important incentive for accounting conservatism is connected to regulations like: the legal framework and security law (which is connected to the transitional process) as well as the influence of state in matters like tax regulation and the risk of expropriation. Only one factor, for which I did not find significant results was equity market exposure, based on that I conclude that incentives directly connected to the capital market do not play a significant role in Eastern Europe.

Restrictions and recommendations for further research

There are many aspects to the restrictions of this research. First of all the limited number of observations was a barrier to obtaining results for more Eastern European countries than

Poland, Hungary and the Czech Republic. Furthermore, the beginning of the analyzed period 1994-2008 includes a very low number of observations. This can cause some problems connected with biased data during the first years of this study, when the number of observations is so low it is difficult to say, without reservations, that these companies are good representatives of all publicly listed companies.

The next issue deals with institutional factors. Since, institutional factors are correlated, I can not conclude definitively which factor exactly reinforce conservatism, since all of them are highly correlated. However it is an aspect which is difficult to overcome and with which Bushman and Piotroski (2006) had to grapple. Generally analysis of institutional factors is very difficult and open to ambiguity. I found it very difficult to construct a proper dummy variable for institutional factors, I realized that small changes in the construction of a dummy had a significant influence on the outcome of my analysis (see for example Security Law proxy). Thus, I think that all research regarding international differences should be interpreted with special caution. Another limitation is that the research assumes the similarity of the characteristics of capital markets; that news is equally incorporated in stock returns across different countries, however this is not necessarily the truth.

There are many possibilities for further research regarding the subject of my paper. First of all one might try to analyse Eastern European countries using different methodology, which does not use capital market information but just accounting information (e.g. accrual measures). The reason behind this is to overcome the problem of the different speed of recognition of news by returns in different countries (one of the limitations of my research). Another possibility for further research is to include all post-communist countries which joined the European Union, which was first my intention, but it is not possible due to a lack of data. An interesting research topic would be to check the influence of the implementation of IFRS in these countries on conservatism which is omitted in my paper. Furthermore, it seems that there is another very important event beside the implementation of IFRS, which probably had a big impact on capital markets –the financial crisis in 2008. The results for market-to-book ratios and the Basu model show that 2008 biases the outcome of my analysis; however it was not the aim of this research to analyze this aspect. Another aspect which was omitted in this paper is the development of accounting conservatism in Eastern Europe, since the aim of this research was not to analyze the trend of conservatism over time. Another interesting issue which could be researched is the influence of different accounting regimes on the level of conservatism in Eastern Europe. Pope and Walker (1999)

proved that different regulations influence the results, thus it would be interesting to conduct research similar to mine, but using earnings after extraordinary items.

APPENDIX I. Literature review

Author and date	Research question, purpose	Sample and data	Methodology	Conclusion
The existence of conservatism and trends				
Basu S. (1997)	<p>To reexamine the conservatism principles</p> <ul style="list-style-type: none"> -earnings respond more quickly or completely to bad news than to good news -earnings/return association is relatively stronger than the cash-flow-return association for bad news compared to good news -unexpected earnings increases are more likely to be persistent while unexpected earnings declines are more likely to be temporary - abnormal return per dollar of unexpected earnings is smaller for “bad earnings news” than “good earnings news” 	All firm-year observations from 1963 to 1990 with returns data on the CRSP NYSE/AMEX and with necessary data on the COMPUSTAT	<ul style="list-style-type: none"> -slope coefficient, R2 from ‘reverse’ regressions of earnings on returns - Basu model 	<ul style="list-style-type: none"> -earnings is contemporaneously more sensitive to negative unexpected returns than positive unexpected returns -concurrent sensitivity of earnings to negative returns is two to six times as large as the concurrent sensitivity of earnings to positive returns -earnings is more timely in reporting publicly available ‘bad news’ about future cash flows than ‘good news’ - positive earnings changes have higher ERCs than negative earnings changes in a conventional regression of abnormal returns on earnings changes
Givoly D. and Hayn C. (2000)	<p>To examine changes in the time-series properties of earnings, cash flows and accruals are consistent with increased reporting conservatism</p> <p>Analyzing the relation between earnings and cash flows</p>	Sample of 896 firms that exist for the period from 1968 to 1998 taken from Compustat	<p>Four sets of measures, to estimate the extent reporting conservatism in the U.S.:</p> <ul style="list-style-type: none"> -accruals measures -Basu model -Skewness and variability of earnings relative to cash flows - the market-to-book ratio 	- results suggest more conservative financial reporting in the two last decades

Watts R. L. (2003b)	To summarize the formal empirical evidence on accounting conservatism – whether it exists, has increased in recent times, and is consistent with the alternative conservatism explanations	The elaboration on different papers which use different samples	-	Existing evidence that suggests accounting that is conservative is most consistent with contracting and litigation explanations, but some of the evidence is also consistent with tax and regulatory explanations, there is reason to believe that these four explanations are not independent, that conservatism is driven by concern with overpayment by contracting parties, courts and government
Measures of conservatism				
Roychowdhury S. and Watts R. L. (2004)	to examine why and how the book value of equity differs from its market value, using the theory of accounting conservatism to research relation between asymmetric timeliness and the market-to-book ratio as proxies of conservatism Hypothesis: -sign and magnitude of the correlation between the two measures depends on the horizon over which asymmetric timeliness is measured and the timing of the measurement horizon relative to market-to-book	The final sample consists of 45 664 firm years over the period 1972-1999	-Basu model Regressions estimating correlations between asymmetric timeliness in the future and market-to-book ratio and, historical asymmetric timeliness and market-to-book ratio	The association between market-to-book ratio and future asymmetric timeliness is negative To measure the understatement of net assets at any point in time, research should estimate historical Basu coefficients cumulatively over multiple years going backward from that point In time
International differences				
Pope P. F. and Walker M. (1999)	To analyze differences in the timeliness of income recognition between the US and UK	UK and US companies listed during 1976-1996	Basu model	US earnings measured before and after extraordinary items, exhibit similar timeliness properties, in UK earnings before extraordinary items are significantly less timely with respect to bad news than earnings after extraordinary items For earnings before extraordinary items –US is more conservative than UK results for earnings after extraordinary items is opposite

Giner B. and Rees W. (2001)	To research conservatism (earnings conservatism) in France, Germany and United Kingdom To check influence of size and industry on conservatism	A sample of firm/years drawn from France, Germany and the UK over the period of years from 1990 to 1998	Basu model	The UK exhibits higher earnings conservatism than France and at Germany, however the difference is not significant The size of company(capitalization) influences conservatism: in Europe smaller firms exhibit greater asymmetric recognition than do larger ones There is no influence of industry groups across the countries
Ball R. et al. (2000)	H1: Code-law countries accounting incomes are more 'smoothed' and less timely in incorporating current-period changes in market value than common-law countries H2: the UK accounting income is less conservative than in other common-law countries and more conservative than in code-law countries	40 359 firm-year accounting incomes reported during 1985-1995 from seven countries (Australia, Canada, US, UK, France, Germany and Japan)	Basu model, accruals model	Accounting income is common-law countries is significantly more timely than in code-law countries, due to quicker incorporation of economic losses, Within the common-law group, there is less asymmetric conservatism in accounting income in the UK Confirmation of H1 on significant level Data weakly support H2
Garcia Lara J. M. and Mora A. (2004)	To examine the level of accounting conservatism across eight European countries (United Kingdom, Germany, France, Switzerland, the Netherlands, Italy, Spain and Belgium) H1: All countries in our sample show balance sheet conservatism H2: Code-law based countries will show larger balance sheet conservatism than common-law-based countries H3: All countries in the sample show earnings conservatism H4: Common-law countries' accounting earnings are more conservative than code-law' countries	Extel Company Analysis database, for eight European countries (the UK, Germany, France, Switzerland, the Netherlands, Italy, Spain and Belgium), final sample 20583 firm-year observations for the period 1987-2000 to analyze balance sheet conservatism and 12306 firm year observations for the period 1988-2000 to analyze earnings conservatism	Feltham and Ohlson measure (market-to-book ratio-balance sheet conservatism) and Basu model (earnings conservatism)	There are both balance sheet conservatism and earnings conservatism practices in all countries under study Continental countries show larger balance sheet conservatism, but differences in earnings conservative practices between countries are not that pronounced, although they tend to be larger in the UK

<p>Raonic I., McLeay S., Asimakopoulos I. (2004)</p>	<p>To compare influence of different regimes on companies which operate internationally To research differences in properties across regulatory regimes</p>	<p>A sample consists of all European firms that traded on exchanges in more than one European country between 1987 and 1999, final sample consists of 366 firms and 3724 firm-year observations</p>	<p>Basu model extended by variables like enforcement, market and disclosure, which represent institutional and political factors</p>	<p>-growing conservatism within examined companies - in general equity market exposure appears to be positively associated with greater timeliness in earnings recognition, whilst regulatory enforcement is positively associated with the bias towards conservatism - extent of financial disclosure remains as a significant and positive main effect on earnings, but it is not associated with asymmetrical timeliness -the importance of equity markets and the degree of regulatory enforcement each has a positive and significant effect on asymmetric timeliness. -as equity markets become more important, earnings yield decreases due to a significant fall in the delayed recognition of good news. But earnings yield increases with regulatory enforcement, as the delayed recognition of good news is significantly greater</p>
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Bushman R. M. and Piotroski J. D. (2006)	To analyze relations between key characteristics of economy-level institutions (legal system, securities law, political economy and tax regime) and the asymmetric recognition of economic gains and losses into earnings	Final sample of 86 927 observations from 38 countries	Basu model extended for institutional variables	<p>Firms in countries with strong investor protection and high quality judicial systems reflect bad news in reported earnings in a more timely fashion than firms in countries with weak investor protection and low quality judicial systems</p> <p>Firms in countries with strong public enforcer slow the recognition of good news in earnings relative to firms in countries with weak public enforcement. In contrast private enforcement has no impact on conservatism.</p> <p>In countries with high state involvement in the economy firms speed recognition of good news and slow recognition of bad news in earnings relative to firms in countries with less state involvement</p> <p>There are mixed results regarding to tax regimes</p> <p>The speed of good news recognition is slower and speed of incremental bad news recognition is faster in countries with both high quality judicial regimes and high relative usage of private bonds, and in countries with both high quality judicial regimes and more diffuse ownership structures. In contrast in case of absent high quality judicial system cause s that there is no connection between prevailing contracting activities and conservatism.</p>
Jindrichovska I. and McLeay S. (2005)	To research existence of (earnings) conservatism in Czech Republic	Yearly accounting data and stock prices for 63 industrial companies listed on the Prague Stock Exchange over the period from 1993 to 1999	Earnings/returns relationship, Basu model	<p>-statistically significant evidence of different market effects of profits and losses</p> <p>-no statistically significant evidence of earnings conservatism in Czech market</p>

<p>Martikainen M. and Tilli S. (2007)</p>	<p>To examine earnings conservatism in transitional economies of Central and Eastern Europe To investigate the extent to which transition process affects earnings conservatism To investigate influence of joining to EU on earnings conservatism Hypothesis that firms in countries that joined EU are more likely to recognize economic losses on a timely basis than firms in countries that are not EU member states</p>	<p>Transitional economies of Central and Eastern Europe during the period from 1999 to 2005, Amadeus database, firms domiciled in Bulgaria, Croatia, Czech Republic, Latvia, Lithuania, Romania, Russia, Serbia, Slovakia and Ukraine</p>	<p>As a proxy for transitional process the data from European bank for Reconstruction and Development (2007) were taken The model from Ball and Shivakumar (2005) was applied which measures earnings conservatism (measure based on changes in income)</p>	<p>Research show that there are differences in the degree of conservatism between countries at different stage of transition process The results suggests that conservatism exists in Bulgaria, Croatia, Lithuania, Poland, Romania, Russia and Slovakia, and in Latvia at 10% significance level The conservatism coefficient is not significant in Czech Republic and Ukraine Surprising results for Serbia which indicates even not lack of conservatism but very aggressive attitude towards loss recognition Incremental timeliness in loss recognition in European Union member states is greater compared to those outside EU Firms in transitional economies closer to market economy recognize losses in more timely manner than the ones in countries still relatively near to command economy</p>
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APPENDIX II. Institutional factors

		Exact value	Dummy	Exact value	Dummy	Exact value	Dummy	Exact value	Dummy	Exact value	Dummy	Exact value	Dummy
CZECH REPUBLIC	1996	3,50	0	2,67	0	2,00	1	3,58	0	3,5	1	3,00	0
CZECH REPUBLIC	1997	3,56	0	2,67	0	2,00	1	3,58	0	3,5	1	3,00	0
CZECH REPUBLIC	1998	3,56	0	3,00	1	1,50	1	4,51	0	3,5	1	4,00	1
CZECH REPUBLIC	1999	3,61	0	3,00	1	1,50	1	4,51	0	3	1	4,00	1
CZECH REPUBLIC	2000	3,67	0	3,00	1	1,50	1	4,51	0	3	1	4,00	1
CZECH REPUBLIC	2001	3,72	1	3,00	1	1,50	1	3,83	0	3	1	4,00	1
CZECH REPUBLIC	2002	3,78	1	3,00	1	1,50	1	3,83	0	3	1	4,00	1
CZECH REPUBLIC	2003	3,78	1	3,00	1	1,50	1	3,67	0	2,5	1	4,00	1
CZECH REPUBLIC	2004	3,78	1	3,33	1	2,00	1	4,40	0	3	1	4,00	1
CZECH REPUBLIC	2005	3,83	1	3,67	1	2,00	1	4,12	0	2,5	1	4,00	1
CZECH REPUBLIC	2006	3,83	1	3,67	1	2,00	1	3,95	0	2,5	1	7,00	1
CZECH REPUBLIC	2007	3,83	1	3,67	1	2,50	1	3,95	0	2,5	1	7,00	1
CZECH REPUBLIC	2008	3,83	1	3,67	1	2,50	1	3,95	0	2,5	1	7,00	1
HUNGARY	1994	3,33	0	2,00	0	1,00	0	6,77	1	4,5	1	4,00	1
HUNGARY	1995	3,50	0	3,00	1	1,00	0	6,77	1	4,5	1	4,00	1
HUNGARY	1996	3,56	0	3,00	1	1,50	1	6,77	1	3,5	1	4,00	1
HUNGARY	1997	3,78	1	3,33	1	3,00	1	6,77	1	3	1	4,00	1
HUNGARY	1998	3,83	1	3,33	1	2,00	1	6,35	1	1,5	0	2,50	0
HUNGARY	1999	3,83	1	3,33	1	2,50	1	6,35	1	1,5	0	2,50	0
HUNGARY	2000	3,83	1	3,67	1	2,00	1	6,35	1	1,5	0	2,50	0
HUNGARY	2001	3,83	1	3,67	1	1,50	1	5,34	1	1,5	0	2,50	0
HUNGARY	2002	3,83	1	3,67	1	3,00	1	5,17	1	1,5	0	2,50	0
HUNGARY	2003	3,83	1	3,67	1	1,50	1	4,83	1	2	0	2,50	0
HUNGARY	2004	3,89	1	3,67	1	2,00	1	4,73	1	2	0	2,50	0
HUNGARY	2005	3,94	1	4,00	1	2,00	1	5,36	1	2	0	2,50	0
HUNGARY	2006	3,94	1	4,00	1	2,00	1	4,68	1	2	0	5,00	1
HUNGARY	2007	3,94	1	4,00	1	2,00	1	4,68	1	2	0	5,00	1
HUNGARY	2008	3,94	1	4,00	1	2,00	1	4,68	1	2	0	5,00	1
POLAND	1994	3,28	0	2,00	0	1,50	1	5,60	1	4,5	1	2,00	0

POLAND	1995	3,28	0	3,00	1	1,00	0	5,60	1	4,5	1	2,00	0
POLAND	1996	3,33	0	3,00	1	1,00	0	5,60	1	4,5	1	2,00	0
POLAND	1997	3,39	0	3,33	1	1,50	1	5,60	1	4	1	2,00	0
POLAND	1998	3,50	0	3,33	1	1,00	0	5,85	1	3,5	1	3,50	0
POLAND	1999	3,50	0	3,33	1	1,50	1	5,85	1	3,5	1	3,50	0
POLAND	2000	3,50	0	3,67	1	1,50	1	5,85	1	3	1	3,50	0
POLAND	2001	3,61	0	3,67	1	1,50	1	3,81	0	2,5	1	3,50	0
POLAND	2002	3,61	0	3,67	1	1,50	1	3,83	0	2	0	3,50	0
POLAND	2003	3,61	0	3,67	1	1,50	1	3,00	0	2	0	3,50	0
POLAND	2004	3,61	0	3,67	1	3,50	1	3,86	0	2	0	3,50	0
POLAND	2005	3,78	1	3,67	1	2,00	1	4,37	0	2	0	3,50	0
POLAND	2006	3,78	1	3,67	1	2,50	1	3,55	0	2	0	5,00	1
POLAND	2007	3,78	1	3,67	1	2,50	1	3,55	0	2	0	5,00	1
POLAND	2008	3,78	1	3,67	1	2,50	1	3,55	0	2	0	5,00	1
SLOVAK REPUBLIC	1997	3,45	0	2,33	0	1,00	0	5,43	1	3	1	4,00	1
SLOVAK REPUBLIC	1998	3,45	0	2,33	0	1,00	0	5,18	1	3	1	4,00	1
SLOVAK REPUBLIC	1999	3,50	0	2,33	0	1,00	0	5,18	1	3	1	4,00	1
SLOVAK REPUBLIC	2000	3,56	0	2,33	0	1,00	0	5,18	1	2,5	1	4,00	1
SLOVAK REPUBLIC	2001	3,61	0	2,33	0	1,00	0	3,44	0	2	0	3,50	0
SLOVAK REPUBLIC	2002	3,72	1	2,33	0	1,00	0	3,50	0	2	0	2,50	0
SLOVAK REPUBLIC	2003	3,72	1	2,67	0	1,00	0	4,17	0	1,5	0	2,50	0
SLOVAK REPUBLIC	2004	3,83	1	2,67	0	1,00	0	3,91	0	1,5	0	6,50	1
SLOVAK REPUBLIC	2005	3,89	1	2,67	0	1,00	0	4,37	0	2	0	6,50	1
SLOVAK REPUBLIC	2006	3,89	1	3,00	1	1,00	0	3,88	0	1,5	0	10,00	1
SLOVAK REPUBLIC	2007	3,89	1	3,00	1	1,00	0	3,88	0	1,5	0	10,00	1
SLOVAK REPUBLIC	2008	3,89	1	3,00	1	1,00	0	3,88	0	1,5	0	10,00	1
SLOVENIA	2001	3,33	0	2,67	0	1,50	1	5,44	1	3,5	1	2,00	0
SLOVENIA	2002	3,39	0	2,67	0	3,50	1	5,33	1	3,5	1	2,00	0
SLOVENIA	2003	3,39	0	2,67	0	2,50	1	5,17	1	3,5	1	1,50	0
SLOVENIA	2004	3,39	0	2,67	0	2,00	1	4,70	1	3,5	1	1,50	0
SLOVENIA	2005	3,39	0	2,67	0	1,50	1	5,27	1	3,5	1	3,50	0
SLOVENIA	2006	3,39	0	2,67	0	2,50	1	5,13	1	3,5	1	3,00	0
SLOVENIA	2007	3,39	0	2,67	0	3,50	1	5,13	1	3	1	3,00	0
SLOVENIA	2008	3,39	0	3,00	1	3,50	1	5,13	1	3	1	3,00	0

LITHUANIA	2004	3,61	0	3,00	1	2,00	1	3,60	0	1,5	0	4,50	1
LITHUANIA	2005	3,78	1	3,00	1	2,00	1	4,31	0	1,5	0	4,50	1
LITHUANIA	2006	3,78	1	3,00	1	2,00	1	4,36	0	1,5	0	7,00	1
LITHUANIA	2007	3,78	1	3,33	1	2,00	1	4,36	0	1,5	0	7,00	1
LITHUANIA	2008	3,78	1	3,33	1	2,00	1	4,36	0	1,5	0	7,00	1

- red colour means missing values

APPENDIX III. Coefficients and standard errors for chosen regions

Region	β_2	σ_1	β_2	σ_1
Western Europe	0.021	0.003	0.309	0.011
Eastern Europe	0.050	0.008	0.182	0.038
Czech Republic	0.169	0.076	0.123	0.212
Hungary	0.072	0.025	0.046	0.064
Poland	0.032	0.080	0.178	0.039

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