# THE CONCEPT OF PRUDENCE IN THEORY AND PRACTICE

*TANJA ŠESTANJ-PERIĆ, SUZANA KEGLEVIĆ KOZJAK*

## Abstract:

This paper studies the concept of prudence in view of the recent changes related to this accounting concept in The Conceptual Framework for Financial Reporting (CF) prepared by International Accounting Standards Board (IASB). Accounting standards should be based on clear concepts that enable the understanding why individual standards are stipulated the way they are and allow establishment of new recognition and measurement practices not yet covered by standards. This paper contributes to the cognition of how important it is to clarify the concepts underlying the preparation of mandatory financial statements. The conclusions of the paper could be useful for regulators.

The revised CF emphasizes 'cautious prudence' supposedly supporting neutrality and neglects conservatism or 'asymmetric prudence'. Firstly, this paper examines the stance of researchers towards the concept of prudence and reviews the results of some influential theoretical and empirical papers related to accounting conservatism, which is a term used in academic literature instead of the term prudence. Secondly, the effects of more or less conservative treatment on financial reports and usefulness of such information are analyzed based on hypothetical examples. Finally, the examples of how real companies treat development costs are used for the conclusions. The results of analyzed papers show that the most useful information is often information produced by conservative accounting system. Hypothetical examples illustrate how conservatism influences financial reports and real examples confirm the use of conservatism in practice. Therefore, CF as a foundation for development of individual standards should accept conservatism or 'asymmetric prudence' as important as neutrality.

## Keywords:

Accounting standards, Conservatism, Financial reporting, IFRS Conceptual Framework, Prudence

**JEL Classification:**  M41, M48

## Authors:

TANJA ŠESTANJ-PERIĆ, University of Zagreb, Faculty of Organization and Informatics, Croatia, Email: tanja.peric@foi.hr
SUZANA KEGLEVIĆ KOZJAK, University of Zagreb, Faculty of Organization and Informatics, Croatia, Email: suzana.kozjak@foi.hr

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## 1   Introduction

Accounting regulation started to develop in the 19th century with significant development in the second half of 20th century. For example, International Accounting Standards Committee, the predecessor of International Accounting Standards Board (IASB), was established in 1973. Since then it develops accounting standards and new standards are being introduced as new business transactions and events emerge. Accounting standards should be based on clear concepts that firstly enable the understanding why individual standards are stipulated the way they are, and secondly allow new practices of recognition and measurement not yet covered by standards to be established. A few years IASB was preparing a revision of The Conceptual Framework for Financial Reporting (CF) which defines the basic accounting concepts applied in International Financial Reporting Standards (IFRS). It was last time revised in 2010, and the new revision was finalized in March 2018. This paper is based on documents issued by IASB during the process of revision.

CF states that primary users of general purpose financial reports are potential and existing investors, lenders and other creditors who need information useful for decision making. Such decision useful information is the one that is relevant and has additional qualitative characteristic of faithfully representing what it claims to represent, and to be faithful the information has to be complete, neutral and free from error as much as possible (IFRS Foundation, Conceptual framework, p. A33-A34). Under 'neutral' it is meant there was no bias in selection or presentation of information. This term is what causes a lot of confusion and there is ongoing debate involving regulators, practitioners and researchers over what leads to useful information, neutral or biased accounting. To find an answer it has be clear to all parties what is meant by terms *neutral* and *biased*. The version of CF from 1989 included the concept known as prudence, but in revised 2010 version this concept was removed from CF because of the view that it is inconsistent with neutrality which is the concept favored by IASB. CF now again contains prudence, with the explanation in the Basis for Conclusion of the CF that it refers to 'cautious prudence'. In this sense, "*Neutrality is supported by the exercise of prudence. Prudence is the exercise of caution when making judgments under conditions of uncertainty. The exercise of prudence means that assets and income are not overstated and liabilities and expenses are not understated. Equally, the exercise of prudence does not allow for the understatement of assets and income or the overstatement of liabilities and expenses, because such mis-statements can lead to the overstatements of income or the understatement of expenses in future periods."* (IFRS Staff Paper, 2017, p. 5). There is not much difference compared to prudence definition from 1989 CF[1], except for the statement that prudence supports neutrality. The good thing is that both creation of hidden reserves and hidden losses is not acceptable by definition thus emphasizing that neither direction earnings management is allowed, like some researchers suggested it should be clearly

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[1] CF 1989 definition of prudence: "*Prudence is the inclusion of a degree of caution in the exercise of the judgements needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated.  However, the exercise of prudence does not allow, for example, the creation of hidden reserves or excessive provisions, the deliberate understatement of assets or income, or the deliberate overstatement of liabilities or expenses, because the financial statements would not be neutral and therefore, not have the quality of reliability*.", available at: http://www.ifrs.org/-/media/feature/resources/for/investors/investor-perspectives/investor-perspective-jun-2015.pdf (accessed 15 October 2017)

stated (Gebhardt et al., 2014, p. 112). However, we believe that the definition does not contribute to solving the confusion about prudence and neutrality having in mind that prudence defined as above is a concept to be used when facing uncertainty where judgements have to be made by managers who in most situations have natural optimistic bias. Without the guidance how to apply the caution the optimistic managers will most probably remain optimistic.

Many people caution connect with different approaches to assets/gains vs liabilities/expenses. Barker (2015b) suggested in his comments to IASB Exposure Draft ED/2015/3 defining prudence as "the application of a higher threshold of verifiability for the recognition of assets or gains than for liabilities or losses". If revenues and assets are treated differently than expenses and liabilities, IASB names this an 'asymmetric prudence' but this term is not mentioned in revised CF as a concept that could lead to useful financial information. The IASB decided on 18 October 2016 that "*Chapter 2—Qualitative characteristics of useful financial information of the revised Conceptual Framework should acknowledge that the exercise of prudence does not imply a need for asymmetry—for example, a need for more persuasive evidence to support the recognition of assets than of liabilities or to support the recognition of income than of expenses. Nevertheless, in financial reporting standards such asymmetry may sometimes arise as a consequence of requiring the most useful information.*" (IFRS Staff Paper, 2017, p. 5). Standards themselves in many cases propose such an asymmetric treatment or asymmetric prudence. All of that means that in order to get useful information sometimes neutral (symmetric) and sometimes biased (asymmetric) approach to recognition and measurement of revenues, expenses, assets and liabilities are applied. The question is why then to insist only on neutrality as an important concept in financial reporting if neutrality often does not lead to the most useful information. Wagenhofer (2015) argues that both neutrality and prudence which includes "asymmetric prudence" should be explicitly stated in CF as equally important concepts since as research shows, there is a trade-off between neutrality and biasedness when it comes to the usefulness of information, and which concept is preferred depends on the particularity of the situation. USA standard setting body Financial Accounting Standards Board (FASB) also insists on neutrality and Watts believes it is done without knowing why prudence exists which would ultimately "change managerial behavior and impose significant costs on investors and economy in general" (Watts, 2003, p. 207). Scott (2015, pp.14-15) mentions how financial crisis and recession of 2008 brought criticism to the fair value accounting for financial instruments, which represents the application of neutral accounting.

The CF states that "If financial information is to be useful, it must be relevant and faithfully represent what it purports to represent" (IFRS Foundation, Conceptual framework, p. A33). The recognition that sometimes asymmetric treatment is needed for production of the most useful information could be interpreted like moving away from faithful representation (it is achieved, among other things, with the maximally neutral depiction) i.e. moving away from what is by definition necessary to end up with useful information. In order to justify the possibility that asymmetric treatment ends up with useful information and still not to depart from faithful representation explanation, IASB describes in the Basis for Conclusion on the Exposure Draft that they consider two aspects of neutrality: the neutral application of accounting policies which should be facilitated by exertion of cautious prudence, and the selection of neutral accounting policies related to asymmetric prudence (IFRS Staff Paper, 2016, p. 10). According to that, even

asymmetric prudence does not collide with this special interpretation of neutrality[2]. Surely, two types of prudence and two types of neutrality seem somewhat confusing and it is doubtful how much revised CF improves guidance on concepts of neutrality and prudence underlying useful financial information.

This paper explores if academic findings support recent changes of CF related to the concept of prudence. The first aim of this paper is to assess what is the attitude of researchers towards the concept of prudence, and to make a review of results of some influential analytical and empirical papers related to the topic of neutral vs. biased accounting systems. The second aim is to compare the effects of neutral and different forms of conservatively biased accounting on the financial reports and usefulness of such information by hypothetical numerical examples. The analysis is based on the treatment of development costs. The examples of real companies and their treatment of development costs are used for the conclusions.

The paper is organized as follows. In the second section prudence and conservatism are discussed, the third section contains the review of selected analytical and empirical articles that explore usefulness of accounting information in particular circumstances, the forth section includes hypothetical numerical examples as well as real examples, and the final section concludes.

## 2    Prudence and conservatism

Accounting is the source of information that would not exist if that information is not valuable, and information is valuable only if it tells us something we did not know (Demski, 2008, p. 195). This implies there is uncertainty as to company's economic operations which accounting helps to resolve. However, economic value is a theoretical construct difficult to measure in practice. Demski explains (Ibid., p. 75) that lifetime economic income equals lifetime cash flow equals lifetime accounting income, but taken for each year of a multi-period case they differ because of accrual accounting. And if we freeze the events the cumulative income will not depend on the accounting method (it is evident in our numerical examples in section four). However, the occurrence of events is likely to be dependent on the accounting methods used.

Accounting system is defined by recognition, measurement and information disclosure policies and in general it can be neutral or biased. The biased accounting system is characterized by asymmetric treatment of gains and losses, assets and liabilities, and can be conservatively or aggressively biased. Conservatism is a term used in academic literature instead of prudence. Two types of conservatism are being studied – conditional and unconditional. Unconditional (ex-ante or news independent) conservatism means that due to the accounting methods defined at the time an asset or liability is acquired, unrecorded goodwill occurs like in the case of immediate expensing of development costs, accelerated depreciation, historical cost accounting for positive net present value projects (Beaver, Ryan, 2005, p. 269). Some researchers go further and distinguish between consistent and temporary unconditional conservatism (Hellman, 2008). Temporary unconditional conservatism could be the result of not following the prudence concept as defined in the revised CF, and it involves changes in accounting estimates leading to volatility in earnings and net assets value. Allowing such changes makes it easier to manage earnings.

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[2] We analyze it further in section 2, when discussing the paper by Barker (2015).

Conditional (ex post or news dependent) conservatism represents biased recognition of gains and losses because after bad news book values are written down, but after good news they are not written up. In empirical literature conservatism was introduced by Basu (1997, p. 4) who defined it as "accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements". This causes underestimation of the net assets compared with their market value. Examples include lower of cost or market accounting for inventory and impairment accounting for fixed tangible and intangible assets (Beaver, Ryan, 2005, p. 270). Beaver and Ryan conclude that two types of conservatism have some common purposes while the difference is that the literature concerning unconditional conservatism puts more weight on problems with the valuation of certain assets and liabilities, and the literature on conditional conservatism puts more weight on improving contracting efficiency. Basu (2005, p. 313) explains the key distinction between unconditional and conditional conservatism by the fact that unconditional conservatism uses only information available at the inception of asset's life while conditional conservatism reveals new information in future periods. Both unconditional and conditional conservatism are contained in what IASB describes as 'asymmetric prudence'.

Conservative accounting is often present in practice, both unconditional and conditional. Standards sometimes allow for discretion to choose between alternatives that incorporate more or less conservatism, like International Accounting Standard 16 Property, Plant and Equipment (IAS 16) that gives two possibilities for measurement of long-term assets after recognition: cost model and revaluation model (fair value). Cost model is conditionally conservative with respect to the news about the assets since increase in value is recognized only to the amount of previously accounted impairment loss (reversal of impairment loss).  Revaluation model treats good and bad news the same way, and therefore represents neutral principle of measurement. Under revaluation model, if the value of an asset has increased to more than was initial recognition value, the carrying amount will reflect that (IFRS Foundation, International Accounting Standard 36, Impairment of Assets, paragraph 118). The CF prefers neutrality, but sometimes verifiable neutral information does not exist. For example, when there is active market for an asset, fair value market model can be easily applied. But when there is no active market, which is mostly the case for long-term assets of firms such as industrial buildings and special equipment, fair value has to be calculated using cost method or income method. Each of three valuation methods (market, cost and income) uses inputs that are categorized into three levels, according to their observability (IFRS Foundation, International Financial Reporting Standard 13, Fair Value Measurement, paragraphs 67-90). If the inputs are not observable their verifiability is questionable, which means that such an information is also non verifiable and is not suitable for contracting i.e. stewardship purposes. This example confirms the orientation of IASB on decision-useful role of accounting information and not stewardship role (Gebhardt et al., 2014, p.109). Although some contend that the role of mandatory reports is not to be a primary source of information for private contracting (management and debt contracts), there are opposite opinions since private information is costly to obtain which leads to ubiquitous use of accounting information. In research it is usually presumed that private lenders such as banks have access to proprietary information and therefore less rely on public financial information; however, the importance of public financial statements is also acknowledged as it is usual for any lender to require audited financial statements (see for example Bharath et al., 2008, p.2, Armstrong et al., 2010, p.214). Bushman et al. (2004, p.213) take audited financial reports as a more credible

source of information than private information. Guay (2008, p. 177) explains that firms employ different levels of conservatism in their financial reports due to different demands of users of this reports and accounting rules have evolved so that they enable this. The reason for the difference is, among other things, that some of the users i.e. some contracting parties are better able to obtain other information besides formal financial reports. However, mandatory financial reports are always used as a source of information.

Barker & McGeachin (2015) studied the changes in IFRS through years and find that even after 2010 standards remained extensively conservative in all three areas, recognition, measurement and disclosure requirements, showing a misbalance between what CF promotes and what is actually present in standards. They propose changes to CF that would include agency/contracting perspective which is found in the literature as a driver for conservatism.

Mora and Walker (2015, p. 638-639) claim that CF should acknowledge the distinction between conditional and unconditional conservatism. Their review of literature reveals that contracting needs mostly drive the demand for conditionally conservative accounting but the optimal level of conditional conservatism is specific as to the firm, economic conditions and country. Unconditional conservatism seems to have no contracting purpose but its use is widespread due to tax reasons, litigation, regulatory issues or even earnings management and it is questionable if it has any socially useful role. They consider the fact that financial reporting helps to solve economic problems of information asymmetry between the firm and investors or lenders is not properly recognized in the CF.

Barker (2015, p. 515) argues that confusion arising from CF on the subject of prudence is due to treating the 'conservatism' and 'prudence' like synonyms. Using standard English dictionary no obvious distinction between conservatism and prudence can be found[3], but the terms could differ in specific context. Barker makes distinction between 'conservatism' and 'prudence' explaining the former as any accounting method that causes book value of equity to be less than economic value, while the latter is defined as a type of conservatism resulting from caution in situations of uncertainty with higher verifiability thresholds for gains than losses. It seems that what he means under prudence is a form of conditional conservatism. Economic value is a neutral benchmark measured as net present value of expected cash flows attributable to owners. Since standards are already conservative he concludes that there is in general no need to emphasize prudence as a fundamental characteristic of financial information, although the contracting demand for prudence could possibly call for its specification in CF. IASB has partially accepted such arguments since chapter 2 of revised CF will mention the possibility of asymmetry (IASB Staff Paper, 2016, p. 7). Barker also distinguishes the 'framework neutrality' explained as a consistent application of concepts and definitions from CF where consistent i.e. neutral application of net assets definition from CF leads to conservatism that is pervasive in individual standards. It seems to us that IASB used similar approach when referring to two types of neutrality, one being neutral application of accounting policies (IFRS Staff Paper, 2016, p. 10). In this manner, both conservative accounting policy specified by IFRS (historical cost model for fixed assets) and

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[3] Definitions from Merriam-Webster dictionary, caution = care taken to avoid danger or risk, prudence = caution or circumspection as to danger or risk, careful good judgment that allows someone to avoid danger or risks, conservative = marked by moderation or caution, available at: https://www.merriam-webster.com/dictionary (accessed 14 September 2017)

neutral accounting policy (revaluation model for fixed assets) are considered as neutral application of accounting policies since they both can be used according to the IAS16. We doubt if using the term 'neutrality' in this context contributes to the clarity of accounting concepts and CF.

Penman (2016) emphasizes the great importance of conservatism for recognition and measurement and thinks it should be part of a CF but as a defining principle for reporting information and not as a qualitative characteristic.

Prudence is also the concept that is traditionally embedded in European accounting. EU directive 2013/34/EU on the annual financial statements, Article 6 (1.c), states that items presented in financial statements shall be recognized and measured on a prudent basis, not explicitly explaining what is meant by it. The part of explanation stating that all negative value adjustments have to be recognized surely gives sense of asymmetry in recognition of gains and losses.

It is evident that there is no unique stance among researchers but they mostly agree that conservatism should be considered in CF in a different way to what was proposed and accepted. After all the discussions the concepts underlying useful financial information should be explained as clearly as possible to the users of accounting standards.

## 3    Research on conservatism

In section two some research findings of reasons for accounting conservatism existence were already mentioned, in this section more systematic analysis is provided.

It is widely recognized that companies more often use debt for financing than issuing new equity (Armstrong et al., 2010, p. 212). The process of loan approval includes assessment of credit worthiness of borrower part of which is financial statements analysis, and ends with the offer of debt contract. Accounting methods are essential part of the contracting (Ball, 2006, p.7) because they influence the application of financial and legal terms like earnings or leverage, and therefore have to be specified ex ante to avoid uncertainty in the payoffs of both lender and borrower. Contracts and accounting based debt covenants integrated in contracts serve to mitigate the agency problems between borrowers and creditors. There are numerous analytical (theoretical) and empirical papers where the researchers explore if and how the accounting system influences agency costs associated with debt financing, improves efficiency of debt contracting, and what accounting system gives an optimal solution. They also explore how the choice of accounting system influences real and accounting earnings management. The results of some influential analytical papers are presented in this section as well as the results of selected empirical papers about the drivers of conservatism.

### 3.1    Conservatism in theoretical literature

The emphasis here is on the theoretical research of conservatism in debt contracting context. Göx and Wagenhofer (2009) explore the role of accounting system in a setting where a firm has to raise outside capital to finance a risky project and the lender requires collateral by pledging the existing assets from earlier investment projects. There is a moral hazard involved since the project earns positive NPV only if managers exert high effort. The expected return of the project does not suffice to guarantee high effort and positive return to lenders hence the firm must pledge

assets in order to get financing; the information about the value of collateral comes from the accounting system. They assume no accounting regulation, but firm will use an accounting system to value its existing assets needed for pledging. They find that the optimal accounting system is conditionally conservative recognizing impairment losses but no unrealized gains in the asset value.

Caskey and Huges (2012) study the influence of more or less conservative fair value measures on the ability of accounting based debt covenants to alleviate inefficient investment decisions, both at the project selection stage and at continuation stage. After entering the debt contract, shareholders make investment decision. But when new information about the project value becomes available, the continuation or abandonment decision is made by the party that has the decision rights, which depends on debt covenant. Even though more conservative accounting leads to excessive abandonment of projects by giving extensive control rights to lenders, the abandonment costs burden inferior projects more, thus preventing the selection of inferior projects by shareholders.

Beyer (2013) studies the impact of conservatism and aggregation on the efficiency of debt contracts using conservative principle for long lived assets called the lower-of-cost-or-market-value (recognition of unrealized losses but not unrealized gains; under IFRS this would be cost model as opposed to revaluation model). In her model she assumes that a firm invests in two assets. Aggregation which is a characteristic of financial reporting implies the summing of individual asset values to a summarized measure, and debt covenants in the model are specified in relation to aggregate value. There is a moral hazard problem and cash flows at the end are realized only if manager "behaves". In a situation where lender has control right over asset liquidation she finds that up to a certain threshold of debt capital needed to finance a project, the application of conservative accounting leads to weakly higher amount of debt that can be raised under efficient contract compared to fair value accounting.

Some authors in their analytical models find that not conservative, but aggressive accounting is beneficial for debt contracting. Gigler et al. (2009) also model a situation where additional information after project initiation in a form of accounting report influences whether the project is liquidated or continued. There is no asymmetry of information but asymmetric payoffs create tension between creditors and residual claimants creating the need for accounting debt covenants that determine who has the continuation decision rights. They find that accounting conservatism decreases the efficiency of debt contract by not only increasing the frequency of reported low signals, but also changing the information content of low and high signals. Increased conservatism induces the rise of the expected costs of false alarms that more than offsets the decrease in the expected cost of undue optimism which leads to suboptimal project liquidation. The authors advise standard setters not to be convinced that debt contracting reasons call for accounting conservatism although there might be other reasons for its existence (the opinion opposed to Watts 2003).

Li (2013) finds that the demand for accounting conservatism depends on renegotiation and its costs. She uses incomplete debt contract setting where the covenant is contingent on the imperfect accounting signal, true state is assumed to be unverifiable. When the debt contract includes non-renegotiable accounting-based debt covenants, increased conservatism reduces the efficiency of liquidation decision and the entrepreneur's expected payoff. With more conservative

accounting, the low signal contains more noise and there is increased probability of generating low signal for the good type project that may induce their more excessive liquidation. The same result is gained with sufficiently costly renegotiation of debt covenants. With renegotiation costs being moderate, under certain conditions more accounting conservatism may increase the entrepreneur's expected payoff.

Chen et al. (2007) compare the role of biases introduced by accounting standards, meaning conservatism, in mitigation of unobservable biases resulting from earnings manipulation (incentive to manage earnings upwards). They compare situations in two accounting systems, one where standards are bias free and the other where standards are conservatively biased. They find that under conservative standards there is a lower degree of earnings manipulation than under the unbiased standards. Gao (2013) shows that conservatism as ex-ante transaction measurement principle lowers the managers' incentives to ex-post manage earnings.

The above mentioned papers show that the optimality of solution depends on the model specific circumstances and as Wagenhofer (2015b, p. 356) discusses, for models in agency setting it is rarely neutral accounting system that leads to the optimal solution.

### 3.2    Empirical research on drivers of conservatism

In his paper Watts (2003) identifies contracting, litigation, taxation and regulation as factors causing conservatism and researchers often empirically test these factors. In his review of empirical evidence of conservatism Watts (2003b) finds that accounting has over time become more conservative with contracting and litigation reasons being the primary explanations of conservatism existence. The researchers in general agree that only conditional conservatism improves contracting efficiency but which type of conservatism is driven by other reasons is a matter of disagreement between them. Using Compustat database firm sample Qiang (2007) shows that contracting reasons induce conditional conservatism, regulation and taxations induce unconditional conservatism, while litigation induces both. So, the two types of conservatism have distinct roles and common role (both mitigating litigation), but are negatively interrelated implying the necessity for trade-off between the two depending on the circumstances. Garcia Lara et al. (2009) use a sample of US firms and while they confirm Qiang's finding related to contracting and litigation, they find that taxation and regulation induce both unconditional and conditional conservatism.

One line of empirical literature concentrates on institutional factors that may influence the conservatism in accounting. For example, Garcia Lara et al. (2005) investigated differences in conditional conservatism in France, Germany and UK and without controlling for earnings managements they found no significant differences. Deliberate and consistent understatements of earnings they treat as earnings management and not conservatism. When controlling for earnings management they find significant differences with more conservative earnings reported in UK (common-law country) than in Germany and France (code law countries). They consider differences arising because of litigation reasons and less concentrated ownership structure in common law countries.

Some claim that general financial reports are primarily oriented towards equity investors and that other parties have private options for gathering information, but it is clear that this private information is costly and lenders use general accounting information both in public and private

debt contracting. Nikolaev (2010) studied the relation between the number of debt covenants in contracts and the degree of accounting conservatism on a sample of more than five thousand public debt issues for the period 1980-2006. Public debt contracts commonly contain covenants that condition management actions, such as new debt or equity issues, dividend payments or new investments, on accounting numbers. He finds that the more extensive use of covenants in the contract, the timelier firm recognizes economic losses. Callen et al. (2016) use private debt setting using Dealscan data from 2000-2007 to explore whether performance covenants and accounting conservatism are related. In this kind of setting it is reasonably assumed that the lender is able to obtain more information from the borrower than in public debt setting, however some information still remains proprietary to the borrower. The setting includes information asymmetry where lenders are less informed about future wealth appropriations from the borrower's side and conservative reporting may serve as a signal of borrower's type. They find empirical evidence that with high information asymmetry both conservative accounting and covenants serve as signals of borrower's type i.e. they are positively related, act as complements, and their combination reduces overall signaling costs.

Beatty et al. (2008) explore how lenders satisfy the demand for conservative financial reporting on a sample of syndicated loans listed on the Securities Data Corporation (SDC) between 1994 and 2004. In practice lenders often make conservative adjustments to GAAP reported numbers for contracting purposes i.e. for specifying covenants, but the authors did not find evidence that would confirm the adjustments lenders made completely replace financial reporting conservatism. They find that borrowers react to lender's need for more conservative reporting by preparing more conservative reports. On a sample of NYSE and AMEX firms La Fond and Watts (2008) conclude that asymmetry of information between managers and outside equity investors drives the need for more conditionally conservative accounting. Their results indicate that not only debt contracting but also governance needs drive demand for conditionally conservative accounting.

## 4    Examples of conservatism

The research considered in section three tries to explain why conservatism exists. In this section it is presented how various accounting approaches affect the actual financial information by analyzing a firm that has development project which causes costs in years 1, 2 and 3. Different treatment of this costs leads to different financial reports.

The firm has two options: development costs can be either immediately expensed or capitalized[4]; in the second case they are being amortized over asset's useful life. If development costs were capitalized and intangible asset recognized, IAS38 permits intangible asset measurement after recognition using either cost or revaluation model, but revaluation model can only be used for intangible assets for which active market exists, and these are very rare. However, we also consider this possibility. The cost model represents conditional conservatism while revaluation model is considered as neutral approach. Cost method is conditionally conservative because of the following: bad news is always recognized as impairment of the asset that causes negative shock to earnings, while good news increases the value of asset and causes positive shock to earnings only to the amount of previously recognized impairment.

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4 In practice, IAS 38 Intangible assets specifies under what conditions development costs should be capitalized; for the sake of the case study we consider that even if all conditions are met the firm can choose to expense the costs

Revaluation method is considered here neutral since both bad (impairment) and good news (increase in value) is reflected in earnings in the full amount, the former as a negative, and the latter as a positive shock to earnings. Some might argue that decrease and increase in value are not treated completely the same and question the seemed neutrality of revaluation model since impairment and reversal of impairment go directly through P&L account, while revaluation reserve is a part of other comprehensive income. If not neutral, it is unquestionably less conservative than cost model. Both conditionally conservative and neutral model give the possibility for earnings management due to changes in estimates from original to impaired value and then back to original (cost) or to increased value (revaluation).

The outcome of development project can be either success or failure. Success of development project results in doubled operating revenues (and expenses, excluding development expenses or amortization of intangible asset) after year 3. In the case of failure operating revenues and expenses (excluding development expenses or impairment of intangible asset) remain the same after year 3. Time frame considered is 8 years in total, since 5-year amortization period is assumed for development costs in the case of capitalization. Although debt is not the favorite source of finance for R&D financing (Hall, 2010) the firms use both internal funds as well as external financing including debt for financing development projects. In our example it is assumed the project financing is external by debt. The interest rate is 10%, interests are paid each year, the debt is repaid after the end of year 8. Tax effects are not included in the analysis.

### 4.1   Project succeeded

Case 1 (tables 1, 2 and 3) considers success of the project and in year 4 the project is revalued to 72. Table 1 shows the effect on balance sheet and profit & loss account (P&L) of unconditionally conservative treatment i.e. immediate expensing of development costs. Conditionally conservative approach of capitalizing development costs and then amortizing them through project's useful life with measurement after recognition using cost method is shown in table 2, and neutral approach of revaluation method is shown in table 3.

**Table 1. Unconditional conservatism: development expenditure immediately in P&L, project succeeded**

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 282 | 316 | 350 | 384 | 418 |
| Fixed assets |  |  |  |  |  |  |  |  |  |
| *TOTAL* | *200* | *218* | *234* | *248* | *282* | *316* | *350* | *384* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 98 | 94 | 88 | 122 | 156 | 190 | 224 | 258 |
| *TOTAL* | *200* | *218* | *234* | *248* | *282* | *316* | *350* | *384* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) |  | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses |  | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses |  | 20 | 20 | 20 |  |  |  |  |  |
| Interest expenses |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization |  |  |  |  |  |  |  |  |  |
| Net Profit |  | -2 | -4 | -6 | 34 | 34 | 34 | 34 | 34 |
| Cumulative Net Profit |  | -2 | -6 | -12 | 22 | 56 | 90 | 124 | 158 |

**Table 2. Conditional conservatism: capitalization and amortization of intangible asset, project succeeded**

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 282 | 316 | 350 | 384 | 418 |
| Fixed assets |  | 20 | 40 | 60 | 48 | 36 | 24 | 12 | 0 |
| *TOTAL* | *200* | *238* | *274* | *308* | *330* | *352* | *374* | *396* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 118 | 134 | 148 | 170 | 192 | 214 | 236 | 258 |
| *TOTAL* | *200* | *238* | *274* | *308* | *330* | *352* | *374* | *396* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) |  | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses |  | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses |  |  |  |  |  |  |  |  |  |
| Interest expenses |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization |  |  |  |  | 12 | 12 | 12 | 12 | 12 |
| Net Profit |  | 18 | 16 | 14 | 22 | 22 | 22 | 22 | 22 |
| Cumulative Net Profit |  | 18 | 34 | 48 | 70 | 92 | 114 | 136 | 158 |

**Table 3. Neutral approach: capitalization, revaluation and amortization of intangible asset, project succeeded**

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 282 | 316 | 350 | 384 | 418 |
| Fixed assets |  | 20 | 40 | 60 | 57,6 | 43,2 | 28,8 | 14,4 | 0 |
| *TOTAL* | *200* | *238* | *274* | *308* | *339,6* | *359,2* | *378,8* | *398,4* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 118 | 134 | 148 | 179,6 | 199,2 | 218,8 | 238,4 | 258 |
| *TOTAL* | *200* | *238* | *274* | *308* | *339,6* | *359,2* | *378,8* | *398,4* | *418* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) |  | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses |  | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses |  |  |  |  |  |  |  |  |  |
| Interest expenses |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization |  |  |  |  | 14,4 | 14,4 | 14,4 | 14,4 | 14,4 |
| Net Profit |  | 18 | 16 | 14 | 19,6 | 19,6 | 19,6 | 19,6 | 19,6 |
| Other comprehensive income (OCI) |  |  |  |  | 12 |  |  |  |  |
| Cumulative Net Profit and OCI |  | 18 | 34 | 48 | 79,6 | 99,2 | 118,8 | 138,4 | 158 |

As per Watts (2003), more conservative treatment can be traced in P&L account by considering cumulative earnings. Net assets (equity) and cumulative net profit are consistently lower with unconditional conservatism compared to other approaches. Total earnings in year 4 represented by comprehensive income, being the total of profit and other comprehensive income, exhibit a higher degree of volatility with revaluation model than with cost model (31,6 compared to 22). Therefore, equity and cumulative net profit plus other comprehensive income (OCI) are from year 4 higher with neutral approach compared to conditional conservatism. Revaluation amount is seen in OCI and as increase of equity. Comparing P&L in tables 1, 2 and 3 it is clear that in all

three years of development phase net profit with conditionally conservative and neutral approach was the same and higher than with unconditional conservatism, but lower after the development was finished, the lowest being with neutral approach. So, it should be taken in account that in general more conservative approach leads to higher net profit in some years compared to less conservative approach, but these are the latter years in the total time frame.[5]

Case 2 (tables 4, 5 and 6) additionally shows the effect on financial statements if dividend is paid out each year. Minimum required equity is assumed to be 100.

**Table 4. Unconditional conservatism: development expenditure immediately in P&L, NP paid out if realized, project succeeded**

| | Opening Balance | Year 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Cash | 200 | 218 | 234 | 248 | 260 | 260 | 260 | 260 | 260 |
| Fixed assets | | | | | | | | | |
| *TOTAL* | *200* | *218* | *234* | *248* | *260* | *260* | *260* | *260* | *260* |
| | | | | | | | | | |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 98 | 94 | 88 | 100 | 100 | 100 | 100 | 100 |
| *TOTAL* | *200* | *218* | *234* | *248* | *260* | *260* | *260* | *260* | *260* |
| | | | | | | | | | |
| Revenues (in cash) | | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) | | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses | | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses | | 20 | 20 | 20 | | | | | |
| Interest expenses | | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization | | | | | | | | | |
| Net Profit | | -2 | -4 | -6 | 34 | 34 | 34 | 34 | 34 |
| Cumulative Net Profit | | -2 | -6 | -12 | 22 | 56 | 90 | 124 | 158 |

**Table 5. Conditional conservatism: capitalization and amortization of intangible asset, NP paid out if realized, project succeeded**

| | Opening Balance | Year 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Cash | 200 | 200 | 200 | 200 | 212 | 224 | 236 | 248 | 260 |
| Fixed assets | | 20 | 40 | 60 | 48 | 36 | 24 | 12 | 0 |
| *TOTAL* | *200* | *220* | *240* | *260* | *260* | *260* | *260* | *260* | *260* |
| | | | | | | | | | |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| *TOTAL* | *200* | *220* | *240* | *260* | *260* | *260* | *260* | *260* | *260* |
| | | | | | | | | | |
| Revenues (in cash) | | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) | | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses | | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses | | | | | | | | | |
| Interest expenses | | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization | | | | | 12 | 12 | 12 | 12 | 12 |
| Net Profit | | 18 | 16 | 14 | 22 | 22 | 22 | 22 | 22 |
| Cumulative Net Profit | | 18 | 34 | 48 | 70 | 92 | 114 | 136 | 158 |

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[5] We stress this fact because it might seem counterintuitive that conservative approach leads to higher NP.

**Table 6. Neutral approach: capitalization, revaluation and amortization of intangible asset, NP paid out if realized, project succeeded**

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Cash | 200 | 200 | 200 | 200 | 214,4 | 228,8 | 243,2 | 257,6 | 272 |
| Fixed assets |  | 20 | 40 | 60 | 57,6 | 43,2 | 28,8 | 14,4 | 0 |
| *TOTAL* | *200* | *220* | *240* | *260* | *272* | *272* | *272* | *272* | *272* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 100 | 100 | 100 | 112 | 112 | 112 | 112 | 112 |
| *TOTAL* | *200* | *220* | *240* | *260* | *272* | *272* | *272* | *272* | *272* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 800 | 800 | 800 | 800 | 800 |
| Expenses (paid) |  | 380 | 380 | 380 | 760 | 760 | 760 | 760 | 760 |
| Revenues-Expenses |  | 20 | 20 | 20 | 40 | 40 | 40 | 40 | 40 |
| Development expenses |  |  |  |  |  |  |  |  |  |
| Interest expense |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization |  |  |  |  | 14,4 | 14,4 | 14,4 | 14,4 | 14,4 |
| Net Profit |  | 18 | 16 | 14 | 19,6 | 19,6 | 19,6 | 19,6 | 19,6 |
| Other comprehensive income (OCI) |  |  |  |  | 12 |  |  |  |  |
| Cumulative Net Profit and OCI |  | 18 | 34 | 48 | 79,6 | 99,2 | 119 | 138 | 158 |

Equity is lower in first three years with unconditional conservatism compared to other two methods because of losses, if there was profit in these years there would not be any difference. From year 4 equity does not differ in tables 4 and 5, but unconditional conservatism i.e. more conservative approach is now seen in more cash available and in consistently lower cumulative net profit. Neutral accounting is reflected in highest equity and cumulative net profit plus OCI from year 4. The amount of revaluation surplus is a part of equity but it cannot be distributed to the owners. The owners who prefer to receive the dividends as early as possible would consequently prefer conditional conservatism to neutrality.

## 4.2    Project failed

Case 3 (tables 7 and 8) considers the project's failure. Table 7 exhibits immediate expensing of development costs, table 8 capitalization and impairment of the asset. Both conditional conservatism (cost model) and neutral accounting (revaluation model) entail first capitalization and afterwards impairment, and the results of both would here be the same. Therefore, it is simply called less conservative approach.

**Table 7. Unconditional conservatism: development expenditure immediately in P&L, project failed**

| | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 262 | 276 | 290 | 304 | 318 |
| Fixed assets | | | | | | | | | |
| *TOTAL* | *200* | *218* | *234* | *248* | *262* | *276* | *290* | *304* | *318* |
| | | | | | | | | | |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 98 | 94 | 88 | 102 | 116 | 130 | 144 | 158 |
| *TOTAL* | *200* | *218* | *234* | *248* | *262* | *276* | *290* | *304* | *318* |
| | | | | | | | | | |
| Revenues (in cash) | | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Expenses (paid) | | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 |
| Revenues-Expenses | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Development expenses | | 20 | 20 | 20 | | | | | |
| Interest expenses | | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization | | | | | | | | | |
| Net Profit | | -2 | -4 | -6 | 14 | 14 | 14 | 14 | 14 |
| Cumulative Net Profit | | -2 | -6 | -12 | 2 | 16 | 30 | 44 | 58 |

**Table 8. Less conservative approach: capitalization and impairment of asset, project failed**

| | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 262 | 276 | 290 | 304 | 318 |
| Fixed assets | | 20 | 40 | 60 | 0 | 0 | 0 | 0 | 0 |
| *TOTAL* | *200* | *238* | *274* | *308* | *262* | *276* | *290* | *304* | *318* |
| | | | | | | | | | |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 118 | 134 | 148 | 102 | 116 | 130 | 144 | 158 |
| *TOTAL* | *200* | *238* | *274* | *308* | *262* | *276* | *290* | *304* | *318* |
| | | | | | | | | | |
| Revenues (in cash) | | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Expenses (paid) | | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 |
| Revenues-Expenses | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Interest expenses | | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Impairment | | | | | 60 | | | | |
| Amortization | | | | | | | | | |
| Net Profit | | 18 | 16 | 14 | -46 | 14 | 14 | 14 | 14 |
| Cumulative Net Profit | | 18 | 34 | 48 | 2 | 16 | 30 | 44 | 58 |

In development years (1-3) equity is again lower with more conservative approach as well as net and cumulative profit. With less conservative approach bad news (project failure) in fourth year reflects as a shock to earnings due to impairment of previously recognized intangible asset which causes the decline of fixed assets and equity, while with more conservative approach equity rises. Misjudgment about project success caused overvaluation of assets and equity in years 1-3 in less conservative case. From year 5 there is no difference in any of items which is expected in our scenario because no effects of this project turn up after the failure has been recognized. However, if real company is financed by debt negative shock to earnings is something that

triggers accounting profit based debt covenants and causes technical default with all its consequences.

Case 4 (tables 9 and 10) additionally shows the effect on financial statements if dividend is paid out each year.

### Table 9. Unconditional conservatism: development expenditure immediately in P&L, NP paid out if realized, project failed

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 218 | 234 | 248 | 260 | 260 | 260 | 260 | 260 |
| Fixed assets |  |  |  |  |  |  |  |  |  |
| *TOTAL* | *200* | *218* | *234* | *248* | *260* | *260* | *260* | *260* | *260* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 98 | 94 | 88 | 100 | 100 | 100 | 100 | 100 |
| *TOTAL* | *200* | *218* | *234* | *248* | *260* | *260* | *260* | *260* | *260* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Expenses (paid) |  | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 |
| Revenues-Expenses |  | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Development expenses |  | 20 | 20 | 20 |  |  |  |  |  |
| Interest expenses |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Amortization |  |  |  |  |  |  |  |  |  |
| Net Profit |  | -2 | -4 | -6 | 14 | 14 | 14 | 14 | 14 |
| Cumulative Net Profit |  | -2 | -6 | -12 | 2 | 16 | 30 | 44 | 58 |

### Table 10. Less conservative approach: capitalization and impairment of asset, NP paid out if realized, project failed

|  | Opening Balance | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cash | 200 | 200 | 200 | 200 | 214 | 228 | 242 | 256 | 260 |
| Fixed assets |  | 20 | 40 | 60 | 0 | 0 | 0 | 0 | 0 |
| *TOTAL* | *200* | *220* | *240* | *260* | *214* | *228* | *242* | *256* | *260* |
|  |  |  |  |  |  |  |  |  |  |
| Liabilities | 100 | 120 | 140 | 160 | 160 | 160 | 160 | 160 | 160 |
| Equity | 100 | 100 | 100 | 100 | 54 | 68 | 82 | 96 | 100 |
| *TOTAL* | *200* | *220* | *240* | *260* | *214* | *228* | *242* | *256* | *260* |
|  |  |  |  |  |  |  |  |  |  |
| Revenues (in cash) |  | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Expenses (paid) |  | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 |
| Revenues-Expenses |  | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Interest expenses |  | 2 | 4 | 6 | 6 | 6 | 6 | 6 | 6 |
| Impairment |  |  |  |  | 60 |  |  |  |  |
| Amortization |  |  |  |  |  |  |  |  |  |
| Net Profit |  | 18 | 16 | 14 | -46 | 14 | 14 | 14 | 14 |
| Cumulative Net Profit |  | 18 | 34 | 48 | 2 | 16 | 30 | 44 | 58 |

The difference as to previous case is that now equity in first three years does not differ so much and if it wasn't for loss it would not differ at all, but after it becomes clear that project is failure the shock in earnings with less conservative approach causes sharp equity fall. It is assumed that 100 is a minimum required equity, and in this example it takes four years until it is again so in

year 8. The owners who prefer to receive the dividends as early as possible would again prefer less conservative approach.

Since IASB emphasizes the importance of neutrality one could assume that companies would prefer applying less conservative rules whenever the standards allow. But standards are very strict and if we consider development costs even the biggest corporations often apply unconditional conservatism and expense development costs. Example of SAP SE (Waldorf, Germany) shows that software development costs are being expensed with the following explanation (excerpt from financial statements for year 2016): "*Research and development includes the costs incurred by activities related to the development of software solutions (new products, updates, and enhancements) including resource and hardware costs for the development systems. We have determined that the conditions for recognizing internally generated intangible assets from our software development activities are not met until shortly before the products are available for sale. Development costs incurred after the recognition criteria are met have not been material. Consequently, research and development costs are expensed as incurred.*"[6]   Dassault Systèmes uses the same approach (excerpt from financial statements for year 2016): "*For technology and other intangible assets the Company develops internally, it typically expenses costs in the period in which they are incurred. For example, because it typically incurs most of its R&D costs prior to reaching technical feasibility, its R&D costs are expensed in the period in which they are incurred.*"[7] The firms that have R&D activities in the field of medical technology development also expense most of their R&D costs. We checked publicly available annual reports for 2016 or 2017 of firms Phillips, Fresenius, Siemens Healthineers, Novartis and Bayer[8] and found that small percentage of total R&D costs is being capitalized. These are the companies that also invest large sums into property, plant and equipment. Although IAS16 specifies how revaluation model can be applied for property, plant and equipment neither of these firms applies it but use instead the cost model for recognition and measurement after recognition of tangible fixed assets. If the most conservative principle is often applied in practice because the standards itself demand or allow it, then CF should put more importance on conservatism.

## 5    Conclusion

Standardization of accounting that regulates how business transactions and events are to be recorded is necessary since many users need high-quality financial information about firm's financial position and performance. Individual standards are based on core concepts that are in

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[6] Available at: https://www.sap.com/investors/en/reports.html (accessed 21 September 2017)

[7] Available at: https://www.3ds.com/investors/annual-reports/reports/2016-annual-report/ (accessed 21 September 2017)

[8] Available at: https://www.results.philips.com/publications/ar17#downloads, https://www.fresenius.com/financial_reporting/Fresenius_Annual_Report_2017.pdf, https://www.corporate.siemens-healthineers.com/investor-relations/presentations-financial-publications, https://www.novartis.com/sites/www.novartis.com/files/novartis-annual-report-2017-en.pdf, https://www.investor.bayer.de/en/reports/annual-reports/overview/ (accessed 19 March 2018)

the case of IFRS summarized in Conceptual framework (CF). There is no single concept that can explain what makes financial information of quality or useful, the focus of this paper is conservatism or 'asymmetric' prudence which represents biasedness and could be described as being opposite to neutrality. Prudence was in the past a part of CF, removed from it in 2010 revision due to its seemed contradiction with more favored neutrality, and now been introduced again after many complaints that accounting should be prudent. The way it is been reintroduced is quite confusing because of a claim that prudence supports neutrality, and there are two explanations of neutrality and two concepts of prudence mentioned in the Basis for conclusion of the CF, "cautious prudence" and "asymmetric prudence", the latter being what is in academic literature called conservatism. Under term "prudence" revised CF refers to "cautious prudence" while conservatism is not seen as equally important concept even though it is actually very often present in relation to recognition or measurement of economic transactions. On one side many individual accounting standards are conservative hence not in line with conceptual underpinning from CF, on the other side research results show that the most useful information that investors and creditors need is not always the information produced by neutral accounting system.

Our assessment of attitude towards conservatism finds that researchers do not share the unique opinion but they mostly agree that conservatism should be considered in CF differently to what is accepted by the newest revision i.e. it should be given higher importance. The review of selected analytical and empirical papers shows that researchers do not see conservatism as something that should be avoided. Researchers intensively study conservatism and differentiate between unconditional and conditional conservatism that empiricists find to arise for various reasons, usually mentioned reasons being tax, litigation, regulatory, earnings management and contracting. Empirical literature reveals also that institutional factors like law influence the level of conservatism in financial reporting. Theoretical literature often studies conservatism in debt contracting setting where asymmetry of information is usually present between borrower and lender, so we focused our review of analytical papers on this setting and the results confirm that conservatism in many models improves efficiency of debt contracting.

Hypothetical numerical examples based on development project that succeeded and their analysis show that, other things been equal, unconditional conservatism (expensing development costs) leads to lower net profit in every year of development phase compared to conditional conservatism (cost model) or neutral approach (revaluation model), but if uncertainty resolves positively this is compensated in higher net profit in the years of effectuation of the project. Neutral approach causes in a year of revaluation higher total earnings than conditional conservatism, but after that total earnings consist of only net profit which is lower compared to conditionally conservative approach. However, one-time higher total earnings cause consistently higher valuation of asset and equity thereafter. The examples exhibit how conservatism can actually be seen by looking at cumulative total earnings and book value of equity. If is also obvious that unconditional conservatism leads to loss of information only at the beginning of the project (no asset recognized) while conditional conservatism causes loss of information in the case of good news.

In case of project failure, we differentiate between unconditional conservatism and what is simply called less conservative approach because both cost and revaluation model entail impairment. The difference in equity, net and cumulative profit arises in years of development up to and

including the year the failure is recognized, when under less conservative approach there is a negative shock to both net and cumulative profit. If company has a policy to pay out dividends the shock to earnings may cause severe drop in equity under less conservative approach. Our examples show, the less conservative approach is, the more information could be available, but also more possibility for misrepresentation exists and this possibility questions usefulness of this additional information.

The examples of development costs from real companies illustrate that even though individual standards under IFRS allow for either more or less conservative approach, the preconditions for application of less conservative approach are so strict that companies rarely satisfy them and therefore apply the most conservative i.e. unconditionally conservative approach.

While IASB follows the demands of users including the demand for conservative accounting in development of individual standards, it is reluctant to acknowledge the importance of conservatism concept. We believe that CF should emphasize that the main purpose of financial reporting is useful financial information which could be created by system of recognition and measurement that is either neutral (symmetric) or biased (asymmetric), depending on circumstances. The exclusiveness is not desirable here because both concepts are important. The bias by itself does not need to be interpreted negative because conservatism leads to useful financial information and if CF is to be perceived as a foundation for development of individual standards it should not neglect such an important concept.

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