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Book-tax conformity: The review of recent research and its implication for the IFRS adoption in Europe

David Procházka and Jan Molin

Abstract
As the goal of corporate taxation contradicts substantially the accounting principles of true and fair view, distinct measures of income are used in corporate and tax accounting. This dichotomy may facilitate an opportunistisch behaviour of executives to manage earnings upwards in financial reporting and taxable profits downwards simultaneously. Aligning both measures may restrict the misbehaviour of management, however at cost of losing informativeness of accounting information. The deliberations on the level of book-tax conformity are complicated by international capital mobility, which facilitate the cross-border profit shifting. Finally, the worldwide adoption of IFRS challenges the governments to decide, whether to allow IFRS to be a tax base for corporate taxation. The growing number of opportunities to relocate profits to more favourable jurisdiction constitutes risks, but also opportunities, for governments struggling to retain control over taxation. The decision may influence both the regulatory frameworks and the business practices of companies. The paper analyses the advantages and disadvantages of low/high book-tax conformity. Our analysis rests on the review of respective literature and it is complemented by the classification of real corporate and tax accounting systems of the EU countries after the IFRS adoption. The classification can be employed in research studies, when the control for different aspect of ‘de jure book-tax conformity’ is needed.

Key words
Book-tax conformity; IFRS adoption; accounting choices; tax avoidance; reporting incentives

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1 Both authors are affiliated with the University of Economics, Prague, the Czech Republic. Corresponding author: David Procházka; email: prochazd@vse.cz.
1. **Introduction**

Under model of perfect competition, a single all-encompassing unambiguous measure of income would be used in all models of economic decision-making. In reality, markets are incomplete and information are dispersed asymmetrically (Hayek 1945). This makes all income calculations problematic, and in certain cases even impossible (Beaver and Denski 1979). For operational difficulties, several measures of a corporate performance exist, each having advantages and shortcomings over others in particular decision-making tasks. Intensive theoretical and practical disputes occurred addressing whether and how to relate accounting and taxable concepts of income. On the one hand, income is a subject of distribution both to owners and government; therefore the same distributable income shall be used in both systems in order to avoid capital erosion (Hicks 1946). However, accounting is used in various investing and contractual settings requiring different measures of income (Edwards and Bell 1961; Chambers 1974; Gjesdal 1981). The sole measure of income would then limit its usefulness for investors and other users of financial statements. The separation of corporate and tax accounting seems to be therefore inevitable, despite it may wipe off the boundaries for opportunistic behaviour via earnings management.

The research debate, whether financial reporting and corporate taxation systems shall be independent or interconnected, emerged as a reaction to two practical issues. Firstly, the independency of both systems was criticised in connection with the accounting scandals (Enron, Tyco, Xerox and other cases) at US capital markets. According to Desai (2005), the relative independence of corporate and tax accounting enabled companies to inflate their profits for capital markets and to understate profits reported to tax authorities simultaneously. Secondly, the IFRS adoption by European Union raised concerns about the tax collection, especially in countries (e.g., Germany, Austria) with a strong link between accounting and taxation. By adopting a new system of financial reporting standards, policy makers are challenged, whether the new system should be also implemented for taxation purposes or not. The coexistence of two accounting regimes (IFRS and local GAAP) intensifies the problems when balancing the basic principles of taxation, e.g. neutrality, equality, simplicity, and legal certainty (MacDonald 2002; Oestreicher and Spengel 2007).

The issue of book-tax conformity and the influence of IFRS adoption are particularly important for open small economies, which struggle to retain control over corporate taxation. The tax theory does not offer enough arguments, why corporate income tax should exist in small open economies. If capital is mobile internationally, corporate tax could be easily avoided (Diamond and Mirrlees 1971) and the tax burden would be borne by immobile factors (Razin and Sadka 1991), such as labour. Taxable profits are highly mobile in an integrated global economy. It is increasingly arduous to identify the jurisdiction, where income was generated, and thus to levy a tax on it (Fuest, Huber and Mintz 2005). Furthermore, capital taxation creates an economic contortion between capital and labour (Gordon 1986). Finally, corporate income tax has distortive impacts on creation of savings and allocation of scarce economic resources among competing uses in a market system (Auerbach 1983), which undermine its defence on economic grounds.

Economic reality, however, contradicts the theoretical forecasts on the untenable nature of corporate taxation, as real firms do cope with income taxes, even in small open economies. The research explains this puzzle using the model of a dominant
capital exporter (Gordon 1992). Alternatively, income taxes are levied to restrict the shifting of income between personal and corporate taxes, or to reduce income transfers between domestic and foreign sources (Gordon and MacKie-Mason 1995). In this case, personal and corporate income tax rates shall be on comparable level, so that incentives to reallocate taxable income from one stream to another are eliminated. Similarly, foreign source of income shall be taxed at the same rate as domestic sources to mitigate tax evasions. A potential measure is to use low rates for taxation levied on those sources, which can be effortlessly shifted internationally, eg through transfer pricing. Regardless on conclusions of taxation theory, corporate taxation is still a matter of fact. The adoption of IFRS and their usage for taxation purposes may thus have unintended economic consequences (Brüggemann, Hitz and Sellhorn 2013) for public budgets, eg through impact on the inflows and outflows of foreign direct investments, through relocation of corporate headquarters, and through international profit shifting of course.

The paper is organised as follows. After the introduction in Chapter 1, the relevant streams of literature dealing with the issue of book-tax conformity in reaction to accounting scandals are analysed in Chapter 2. Referring to this review, the main arguments for and against the dependence of corporate and tax accounting are assessed. Chapter 3 focuses on the specifics of IFRS adoption by the EU. In particular, we (a) introduce the regulatory framework for IFRS in the EU; (b) propose the classification of real systems of accounting and taxation based on the degree of their mutual (in)dependency; and (c) review the literature on impacts of the IFRS adoption on taxation and the role of book-tax conformity in this process. Chapter 4 summarises the cardinal findings of the paper, outlines its contribution to current research and identifies limitations of the study.

2. BOOK-TAX CONFORMITY: REVIEW OF RESEARCH IN THE CONTEXT OF CORPORATE ACCOUNTING SCANDALS

The (in)dependency of accounting and taxation is a subject of ongoing debate. The advantages and disadvantages of having a close link between both systems (so called book-tax conformity, further ‘BTC’) in various information settings has been scrutinised mainly in times of turbulent economic twists. In reaction to accounting scandals of 2001-2002, appeals for aligning the tax base with accounting income arose. Referring to Enron, Tyco and Xerox cases, Desai (2005) argues that firms boost profits reported to the capital markets and at the same time they bury profits reported in tax returns. The degradation in corporate profits reporting is allegedly caused by the separation of accounting and taxation. The quality and reliability of corporate earnings shall improve, if the same figure will be mandated for both purposes. By establishing effective full BTC, the management will be forced to trade-off between the ‘penalties’ from capital market and ‘benefits’ from taxation if lows profits are reported. Similarly, capital markets rewards for reporting high profits would be neutralised by higher tax burdens. The decrease in corporates’ compliance costs and more efficient tax control are identified as additional benefits from the increased BTC. The same findings, requirements and conclusions as in Desai (2005) are presented by Whitaker (2005).
Both studies, although, do not contain any satisfactory empirical evidence, whether double-opportunistic behaviour of firms is really a phenomenon expanding over the economy. Some supportive arguments on dichotomy of accounting and tax profits are shown by Manzon and Plesko (2001). Using publicly available data for US companies, they found evidence that margin between accounting and tax income had spread increasingly in the period 1988–1998. The factors explaining the spread dynamics are although not detected. Mills, Newberry and Trautman (2002) confirmed that book-tax income differences were growing throughout the 1990s. Dyreng, Hanlon and Maydew (2008), based on the US data from 1995 to 2004, revealed the ability of firms to pay a low amount of cash taxes per dollar of pre-tax earnings over long time periods. The long-run cash effective tax rate can be low as long as ten years. Despite these studies discovered steadily growing differences between earnings in financial reporting and income tax expense accompanied with the capability to avoid taxes on long-run basis, they did not identify any common pattern for companies, which had undertaken the tax avoidance. On the other hand, the aggressive tax reporting is usually associated with aggressive corporate financial reporting and vice versa (Frank, Lynch and Rego 2009). A strong positive association between financial and tax reporting aggressiveness testifies that company-specific costs from trading-off financial and tax reporting purposes are insufficient to prevent companies from opportunistic behaviour, thus allowing to manage book income upward simultaneously with decreasing taxable income.

The empirical research offers some evidence on discrepancy between accounting and tax income, which results in boosting of profits for capital markets and reducing tax profits in the same time. The separation of financial reporting and taxation is thus believed to be the main reason of low quality of earnings. By implementing the BTC, tax authorities would be an additional guardian of accounting quality, contributing thus to a higher transparency of financial reporting and a higher tax compliance (Desai 2005). The logic of this requirement rests on the findings of Guenther, Maydew and Nutter (1997), who assessed the consequences of the US Tax Reform Act of 1986 (further TRA86). The TRA86 mandated the usage of accrual basis for the calculation of tax base, whereas companies had been allowed to opt between cash and accrual basis under the preceding tax regime. Those companies, which used cash basis, did not trade-off accounting and taxation profits and tax aspects have no material impact on financial statements. Following the change in the tax setting, those companies, that previously had optimised tax profits, continued in tax evasions, this time by managing accounting earnings through accruals. This study thus backs up empirically the effectiveness of BTC ensuring the higher credibility of reported earnings.

On the other hand, dependency between accounting and taxation tempts companies to lobby on accounting standards to influence reported figures in financial statements and thus to avoid or postpone taxation (Zeff 2002; Hoffmann and Zülch 2014). Similarly, governments are stimulated to solve their fiscal needs via accounting rules, which may impair the informativeness of accounting for economic decision-making. The state inferences in accounting are quite common in countries with code-law tradition. Theoretical debate should therefore address a critical issue, whether benefits of low BTC outweigh its costs. If financial reporting and corporate taxation are relatively stand-alone, the managers may utilise the discretion in accounting standards to reveal private information and thus to reduce information asymmetry (Marshall 1974; Bushman 1991; Bushman and Indjejikian 1993). Empirical research produces extensive evidence that increased accounting and tax dependency lowers accounting
quality, as each system assists to completely different purposes. Ali and Hwang (2000) document that value relevance of accounting earnings diminishes with increasing BTC. The loss of earnings informativeness to the capital markets under tight BTC using the explanatory value of earnings of US companies is documented by Hanlon and Shevlin (2005), Hanlon, Laplante and Shevlin (2005), and Hanlon, Maydew and Shevlin (2008). Atwood, Drake and Myers (2010) apply an alternative approach and different dataset, but with the same conclusions. Based on worldwide data, they confirm that persistence of current earnings declines with increasing BTC. In addition, the association of current earnings and future cash flows is moving oppositely to the development of BTC. Temporary book-tax differences may then serve as a useful signal of earnings persistence (Hanlon 2005; Blaylock, Shevlin and Wilson 2012). Finally, Blaylock, Gaertner and Shevlin (2015) uncover that companies located in countries with higher BTC exhibit higher rather than lower levels of earnings management. The study contains evidence on 34 countries, thus challenges strikingly the arguments of BTC proponents appealing for the higher dependence between accounting and taxation measure of profit.

Besides the negative impact of high BTC on the informativeness and quality of accounting earnings, the research has also identified that a proposed closer link between accounting and taxation does not work and it does not enhance accounting quality of earnings. According to the study of Guenther and Danqing Young (2000), accounting earnings in the UK and the US are more tightly related to real economic activity than accounting earnings in France and Germany, despite latter two countries incline to a higher level of BTC. Lang, Lins and Maffett (2012) detect that earnings management is lower for firms domiciled in the countries with a weaker link between tax and financial reporting. The findings of these studies deteriorate the arguments for linking accounting income with taxable one. Real data indicates that higher BTC results in lower earnings persistence and lower dependency between current earnings and expected cash flows and provides thus additional arguments in favour of the independency of accounting and taxation.

The findings of all previous studies support an idea that a high level of BTC has an adverse effect on accounting quality defined in terms of earnings management, timely loss recognition, and value relevance of accounting amounts (Beaver 1998; Barth, Beaver and Landsman 2001; (Barth, Landsman and Lang 2008). However, there are two recent studies showing an opposite picture. Tang (2015) investigates financial statements of companies from 32 countries and finds out that high BTC is associated with less earnings management and lower tax avoidance. Moreover, an increasing BTC curtails earnings management more in code-law countries, but does not result in significant differences between developed and developing capital markets. Finally, the IFRS adoption has not affected the association. The main weakness of this study is the sample, which employs consolidated financial statements of analysed companies. In majority of code-law countries, corporate income tax is levied on a separate legal body, and the tax calculation must be based on its separate financial statements. This point is addressed by Watrin, Ebert and Thomsen (2014), who scrutinise both consolidated and separate financial statements of companies from 27 EU countries. The analysis gives evidence that companies in countries with one-book system (ie with high BTC) exercise less earnings management in their consolidated financial statements compared to firms in two-book systems (ie in countries with relatively independent accounting and tax regime). However, the power of findings in
this study may be impaired because of certain misspecifications in classification of countries.2

Despite some studies confirm that high BTC may be capable to reduce opposite management of earnings for capital markets and taxation, the majority of papers furnish arguments to express severe concerns about the viability of BTC for financial reporting purposes. Even if we admit that the aligning of accounting income with taxable profit may enhance the tax compliance and cut off the tax avoidance under certain conditions,3 there are plenty of proofs that a tight link between accounting and taxation destroys information power of accounting earnings in decision-making of financial statements users. Weak empirical evidence on concurrent managing of accounting and tax profits in divergent direction can be explained by the concept of reporting incentives. Firms have incentives to report truthfully and to meet their contracting commitments on voluntary basis, as the credible commitment brings economic benefits (Gigler 1994; Skinner 1994; Burgstahler, Hail and Leuz 2006; Christensen, Lee and Walker 2008; Hail, Leuz and Wysocki 2010). Capital markets and other institutional factors determine companies’ incentives, whether to prepare financial statements that reflect economic performance in truly manner or not. The subordination of financial reporting to overriding tax system can eliminate opportunistic behaviour, if the enforcement is weak and the incentives to transparency are missing. On the other hand, if enforcement works and incentives are present, the discretion in accounting choice within boundaries of accounting standards is more frequently used to reduce information asymmetry and to reveal private information to investors rather than to manage earnings opportunistically (Subramanyam 1996).

The review of BTC research in the context of corporates’ accounting-taxation related misbehaviour might be concluded by assertion that empirical evidence depicts more solid arguments in favour of the independency of corporate and tax accounting. Moreover, the dichotomy of corporate and tax accounting can be grounded on different goals of both systems. The main role of accounting lies in supplying useful information for economic decision-making and contracting; taxation aims at collecting resources needed for carrying out economic and social policy by government.

Economic concept of income, which is extensively incorporated in accounting definition of profit (Procházka 2009; Bromwich, Macve and Sunder 2010),

2 Table 1 in Watrin, Ebert and Thomsen (2014): Slovakia should not be assigned to the group ‘IFRS prohibited’, as certain companies (eg, financial institutions and big non-financial firms exceeding specified criteria of turnover, total assets and number of employees) have to mandatorily prepare their separate financial statements according to IFRS (Tumpach and Stanková 2014). Furthermore, Slovak listed companies may opt, whether they prepare their separate financial statements in compliance with Slovak GAAP or IFRS.

Table 4 in Watrin, Ebert and Thomsen (2014): The Czech Republic shall be classified in two-book system, as listed companies are required to prepare individual financial statements according to IFRS, but they have to use tax rules based on local GAAP for corporate taxation (Procházka 2014). Referring to previous remark on Table 1, classification of Slovakia is ambiguous. If a Slovak listed company prepares its separate statements according to IFRS, regardless whether mandatorily or voluntarily, it may also opt for IFRS in tax accounting (Tumpach and Stanková 2014). Therefore, the assignment of Slovakia to ‘One/Two’ category would be more appropriate.

The misspecification may not have significant impact on study’s results, as both countries are small economies (see Table 3, according to which both countries count for 0.26 per cent cases of observations in case of consolidated statements and 5.09 per cent observations of separate statements). However, some concerns about the results remain.

3 We refer, for example, to the different evidence in Guenther, Maydew and Nutter (1997) compared to Guenther and Danqing Young (2000).
encompasses not only the results of realised past transactions, but also unrealised gains. However, the taxation of unrealised gains contradicts the basic tax canons.

The absolute BTC is not possible, neither desirable, as there is no all-comprehensive concept of accounting income. As Gjesdal (1981) points out distinct tasks require different type of accounting information. For each role of accounting, a different definition of income may be needed and the existence of accounting choices is a necessary condition in meeting informational and contracting demands of counterparties (Lambert 2001). Financial reporting standards (such IFRS and US GAAP) requested by stock exchanges are primarily investor-oriented (Barth 2000; 2006; 2007). However, companies are parties in many contracts. The supervision of their fulfilment is based on different information than information utilised in investment decisions. Despite the emphasis on investors’ needs by standard-setters, Lev (1989), Hayn (1995) or Ball and Shivakumar (2008) do not identify any significant influence of accounting data on stock market prices. This confirms conclusions of Beaver (1973), who attributes the negligible association of accounting data with market prices to delays in publishing of financial statements compared to other sources of information. Facing the unsuitable accounting standards for contracting purposes, earnings management practices can be just a reasonable reaction to fulfil companies’ contractual obligation, and not the effort to avoid taxation or boost management compensation.

If earnings management is detected, researchers have to address a cardinal issue, whether accounting choices are driven by opportunism, or by efficiency (Watts and Zimmerman 1990). A selection of accounting procedure is opportunistic, if it is made by managers to be better off at expense of counterparties. Contrariwise, an efficient accounting choices aims at maximising the firm value (Holthausen 1990). The empirical evidence in Christie and Zimmerman (1994) or Subramanyam (1996) inclines to the inference that management behaves honestly and accounting choices driven by efficiency prevail. Regardless the nature of management behaviour, the partial discretion in accounting choices, allowing firms to meet the demand for information from wide range of users, is inevitable. Aligning accounting principles with tax rules would be conditioned by compromises, which cannot although yield benefits for any party. The relevance of information for the users of financial statements will be lost at some extent. Furthermore, tax authorities will be restricted when punishing companies for tax avoidance, if the concealment of taxable profits is justified as a consequence of accounting principles. Finally, too tight BTC restricts governments in practising their economic, social and other policies by setting the (dis)incentives through taxation system (Alley and James 2005).

3. THE IFRS ADOPTION IN THE EU AND DEBATE ON BOOK-TAX CONFORMITY

Although accounting research outlines arguments against rather than in favour of book-tax conformity, the strong interdependence of corporate and tax accounting is a matter of fact in many countries. The adoption of IFRS adds a new dimension to the deliberations, whether to link tax profits to accounting income or not. The debate on usefulness of IFRS for corporate taxation emerged especially in countries with strong link between accounting and taxation (namely German-speaking countries). If the tight form of BTC is applied, a potential shift to IFRS for taxation purposes may
substantially extend or contract the base, which is subject to taxation. The impact on
tax revenues then depends on the type of earnings management behaviour. Besides
the general evidence in the previous section, additional stream of research methods
may be applied for the evaluation of the phenomena of IFRS adoption. Methodologically, the introduction of new accounting principles for determination of
taxable profit is equivalent to the changes in other tax-relevant variables.

The impact of IFRS adoption on tax collection may be estimated by the findings of
studies on the corporate reaction to announced changes in taxation systems (such as
changes in definition of tax base, or in legal tax rates), affecting the expected effective
rate of taxation. For example, an approved and announced reduction in tax rate may
entice taxpayers to engage in intertemporal shift of taxable profits from current to
future periods to lower their tax burden. Once again, the TRA86 represents important
source of empirical evidence, whether companies abuse the modifications in tax
regime to avoid taxation. According to Scholes, Wilson and Wolfson (1992), the
probability of intertemporal profit shifting is growing with the increasing size of a
company. However, the tax optimisation is counterbalanced with the management of
credit exposition, as the risk of breaching debt covenants mitigates the eagerness to
utilise attainable tax savings (Guenther 1994). Furthermore, Lopez, Regier and Lee
(1998) discovered that the anticipated change in tax rates did not increase tax
avoidance significantly. The benefits from intertemporal tax savings were mainly
taken by those companies, which had exercised the tax aggressive patterns already
before the reform. Similar to general evidence, changes in the tax regime are not a
driver of frequent tax misbehaviour.

Based on the research review, it could be assumed that the usage of IFRS in tax
accounting will not affect the compliance with tax rules. However, specific obstacles
may arise, hindering thus the usage of IFRS in taxation. Countries, where high quality
of financial reporting is historically essential for smooth functioning of capital markets
and/or for promoting of investments, build up taxation system relatively independently
on accounting. These states (eg, the UK, the Netherlands and Denmark) are more
likely to allow IFRS in calculation of taxable profit, as the change in accounting
regime shall have hardly registrable effect on tax revenues. On the other hand,
countries (eg, Germany, Austria and Italy) which traditionally use financial accounting
to manage tax revenue are expected to be reluctant to admit IFRS-based taxation.
IFRS are developed by the IASB; an independent body, which does not address tax
goals of national policy-makers. Under tight BTC regime, accounting principles
distinct from local GAAP may thus alter tax streams immediately and in an
unpredictable way.

Furthermore, the literature4 raises concerns about the appropriateness of IFRS in tax
accounting, grounded on fundamental principles of taxation. Neutrality, efficiency,
certainty and simplicity, effectiveness and fairness, flexibility, and equity are mostly
emphasised prerequisites of an ideal tax system (OECD 2014). From the point of
view of taxation theory, the IFRS are mostly refused for the pervasive measurement at
fair values. Besides financial instruments, fair values (a) must be applied for property
investments (IAS 40), in agriculture (IAS 41), for finance leases (IAS 17); (b) can be
applied for remeasurement of tangible (IAS 16) and intangible (IAS 38) assets; (c) are

4 An exhausting review of analytical papers on this issue is elaborated by Eberhartinger and Klostermann
(2007) in Chapter 3 of their paper.
calculated under impairment testing (IAS 36) or disposing assets (IFRS 5). In some instances, market-based fair values are not available and have to be estimated. The estimate based on projected discounted cash flow can be both necessary and sufficient to inform users of financial statements, but it may lack sufficient objectivity to become subject to taxation. The principle of neutrality would be then violated, if estimated unrealised gains included in the financial reporting measure of earnings were taxed. There are also some concerns about deterioration of the effectiveness of tax supervision under IFRS model (Barbe, Didelot and Ashta 2014).

To advance further with discussion on the appropriateness of IFRS in tax accounting, the main features of corporate taxation systems shall be evaluated. We will restrict the scope just on the EU area. For the assessment, we will analyse (a) the text of the Regulation (EC) 1606/2002 on application of international accounting standards and (b) the methods for determination of taxable profits and possible links between financial reporting and taxation under the Regulation. Pursuant the Article 4 of the Regulation (EC), companies, with securities admitted to trading on a regulated market of any member state, shall prepare their consolidated accounts in conformity with the IFRS. In addition, the Regulation gives the member states options relating to annual accounts and/or private companies. Following Article 5, member states may permit or require (a) the companies referred to in Article 4 to prepare their annual accounts, (b) companies other than those referred to in Article 4 to prepare their consolidated accounts and/or their annual accounts, in conformity with the IFRS. Based on the text of Regulation (EC), the EU countries are set free to mandate or allow the application of IFRS for other purposes than in consolidated statements of listed companies. Different countries apply the provisions of Article 5 at a different scope. Some do not use the option at all (eg, Austria); others require/allow the IFRS for almost all companies both in individual and consolidated statements (eg, Denmark, the Netherlands, Ireland). Further, we will just focus on Article 4 and the option in Article 5 (a), ie we will deal with financial reporting of listed companies only.

The main feature of corporate taxation within the EU is that the tax burden is levied on a single legal entity. Despite some recent deliberations about the introduction of consolidated corporate taxation, the current tax systems deals with corporate taxpayers on stand-alone basis. The classification of corporate and tax accounting systems is therefore determined by the link between principles used in annual accounts (separate financial statements) and principles applicable in tax accounting. There are several dimensions shaping the classification structure. Firstly, we shall address the system applied for consolidated financial statements. As we deal with Articles 4 and 5 (a) of the Regulation (EC), IFRS as the exclusive system are mandated for this purpose throughout the EU. The second level deals with the link between consolidated and separate financial statements of listed companies. The Regulation (EC) allows member states to decide whether listed companies preparing consolidated financial statements in conformity with IFRS:

- are required to prepare their individual financial statements in conformity with IFRS; or

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5 As endorsed and approved by the EU.
6 Keeping with the paper’s aim, we will discuss only the scenarios with IFRS consolidated statements of listed companies. However, our analysis and conclusions may be extended also for cases, when the option in Article 5 (b) – ie option for private (non-listed) companies – is exercised.
• are required to prepare their individual financial statements in conformity with local GAAP; or
• are allowed to opt between IFRS and local GAAP.

The third level of classification of corporate and tax accounting systems refers to the link between separate financial statements and tax fillings, as far as the calculation of taxable profits concerns. Depending on whether accounting income from statutory accounts is relevant for the determination of tax base or not, the systems may be sorted out into two extreme groups:

• systems with zero book-tax conformity (ie absolute independence of accounting and taxation system);
• systems with full book-tax conformity (ie absolute dependence of accounting and taxation system).

In reality, some countries following the zero BTC can be identified. On the other hand, the full BTC is rear, as real regimes oscillate within the scale from zero to absolute conformity (ie within high and low number of differences between accounting income and tax profit). This mixed approach is commonly applied by majority of EU states. Consistent with findings of Watrin, Ebert and Thomsen (2014), we assume that most EU countries derive taxable profit by adjusting accounting income reported in statutory accounts in accordance with special provisions set forth in the income tax acts. Based on number of adjustments required, we distinguish:

• high number of adjustments (denoted H), which determines low BTC;
• average number of adjustments (denoted M), which determines average BTC; and
• low number of adjustments (denoted L), which determines high BTC.
Figure 1: Corporate and tax accounting systems of the EU countries after the IFRS adoption (as at December 2013)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Separate statements</th>
<th>Tax fillings</th>
<th>EU countries</th>
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</thead>
<tbody>
<tr>
<td>A1</td>
<td>IFRS required</td>
<td>Independent tax rules</td>
<td>Estonia</td>
</tr>
<tr>
<td>A2</td>
<td>IFRS required</td>
<td>Statutory accounts</td>
<td>Number of adjustments</td>
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<td>Cyprus (L)  Bulgaria (M)  Croatia (H)</td>
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<td>Malta (M)</td>
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<td>A3</td>
<td>IFRS required</td>
<td>Other methods</td>
<td>Number of adjustments</td>
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<td>Czech R. (H)</td>
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<td>B1</td>
<td>Local GAAP required</td>
<td>Independent tax rules</td>
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<td>Local GAAP required</td>
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<td>Independent tax rules</td>
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<td>Slovakia (H)</td>
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Source: Authors’ direct analysis of relevant accounting and tax acts: EY 2014; PwC 2014a; PwC 2014b; IASB 2014.
Figure 1 captures the classification of mutual relationship of corporate and tax accounting regimes in the European Union after the IFRS adoption. The classification follows the principles outlined above; each country is assign to respective group with reference to (a) the analysis of legal acts regulating financial reporting and taxation in given country;\(^7\) (b) studies of EY (2014), PwC (2014a), PwC (2014b) and review of jurisdiction profiles by (IASB 2014). Contrary to the model of Watrin, Ebert and Thomsen (2014), our BTC grouping is solely grounded on the provisions of income tax acts, which set the required adjustments of accounting income to calculate taxable profit.\(^8\) The former model is more appropriate for empirical research (eg, in studies detecting tax motivated earnings management); our measure is more suitable for the ordering of regulatory regimes. Watrin, Ebert and Thomsen’s (2014) measure captures the real differences between accounting and taxable profit (because of permanent and temporary differences); the observations on company level are then aggregated and averaged on country level. However, factual discrepancies reported by firms cannot measure the level of ‘BTC de jure’ precisely, as it could be hardly expected that each company be engaged with all potential adjustments requested by legal acts on taxation. In addition, this measure of ‘BTC de facto’ is of ex-post nature and it varies with changes in business operations, even if both accounting and taxation regimes are stable. Our approach determines the BTC ex-ante, and it is invariant unless an amendment in accounting or tax rules occurs.\(^9\)

We have identified seven real scenarios of mutual relationship between financial reporting and taxation systems relevant for the EU listed companies. Theoretically, nine scenarios may have occurred, as there are three variants for the preparation of separate financial statements of listed companies and three variants of tax regime. Following the option in Article 5 (a) of Regulation (EC), EU member states may decide that listed companies are required, permitted, or prohibited to apply IFRS in their annual accounts. Furthermore, corporate taxation (a) can be based on statutory accounts of firms – highlighted pink at Fig. 1; (b) may use completely independent rules – highlighted yellow; (c) may require different set of accounting principles than applied in statutory financial statements – highlighted green. However, two possible scenarios are not followed by any EU country.

Only Estonia and the Netherlands prefer a complete independence of accounting and taxation, thus exhibiting no BTC. Estonia is probably the extreme EU state regarding the corporate taxation, as no taxation of companies’ profits is mandated by Estonian

\(^7\) Direct analysis was performed for the majority of new EU countries, which are subject of more frequent misspecifications in empirical models mentioned in this paper. Authors used own knowledge of both languages and the regulatory regimes of these countries. In case of absence of language knowledge and for majority of the old EU members, we refer to two studies (PwC and E&Y) on corporate taxation; and to two studies (PwC and IASB) on the extent of IFRS adoption by countries. We refer to several studies in order to eliminate the risk of errors, which may be contained in a single study.

\(^8\) Using analogy from another field of accounting research concerning with the approaches to measurement of accounting harmonisation, our measure addresses the ‘BTC de jure’: Watrin, Ebert and Thomsen (2014) dwell on the ‘BTC de facto’.

\(^9\) On the other side, a change in financial reporting or tax legal acts may influence our regulatory-based criterion of BTC, but the real BTC may remain unchanged, if companies are not engaged in transactions governed by the amended legal provisions. Therefore, the approaches of Watrin, Ebert and Thomsen (2014) or Atwood, Drake and Myers (2010) should have priority in empirical research investigating company-specific characteristics, as our measure is incapable to incorporate real business practices.
government; only dividends are taxable on distribution. Other countries follow a more common approach, under which accounting profit is somehow adjusted for tax purposes. Financial standards used in separate financial statements can then decisively determine the tax base. The largest group contains 11 countries, which mandate listed companies to prepare not only consolidated, but also separate financial statements in compliance with IFRS. Majority of them allow calculating tax profit based on statutory income, which results in application of IFRS for taxation, too – see Scenario A2. The number of adjustments differs within the group; the association between accounting and tax profit may thus vary significantly. For example, Danish firms may expect that their accounting income will be (almost) equal to their tax profit. On the other hand, a high number of adjustments required eg by Croatian tax rules may loosen the linkage. Despite allowing IFRS to be tax base, the resulting tax obligation could be effectively independent on the figure reported in IFRS income statement in countries with high number of adjustments.10 The Czech Republic is the only country not permitting IFRS for taxation, despite listed companies must prepare both consolidated and individual statements according to IFRS. For income tax purposes, Czech listed companies have to firstly transform their statutory accounting income (based on IFRS) to accounting income based on Czech GAAP; consequently Czech GAAP income is adjusted (for relatively high number of instances) to taxable profit.

Class B contains seven states, which have not allowed the usage of IFRS in statutory accounts of listed companies. Separate financial statements have to be prepared in accordance with local GAAP. The starting point for tax filings is statutory income, which is modified according to tax principles. In these countries, IFRS adoption has not any material impact on traditional relationship of corporate and tax accounting, and BTC has remained (almost11) the same.12 Finally, Group C is made up by ten countries (including the Netherlands) passing the Article 5 (a) option on companies. Listed companies may decide whether they will maintain their statutory accounts according to local GAAP or whether they switch to IFRS completely for both sets of statements. This company-wide variability in financial reporting has to be addressed also in the tax area. Six states permit the use of IFRS in tax filling, although with relatively significant extent of adjustments. The Netherlands has an independent tax system and three countries do not tied-up tax profit with statutory accounting income automatically. Latvia and Portugal oblige the companies, if reporting under IFRS regime, to calculate additionally the income according to local GAAP, which is then adapted for tax fillings.13 Finally yet importantly, Slovak policy-makers permit listed companies applying IFRS in statutory accounts to calculate income tax either according to the IFRS or Slovak GAAP rules. For both cases, many adjustments have been:

10 The divergence between both profits may be magnified by the existence of special tax rules for listed companies and other entities reporting under IFRS, as in case of Romania.
11 There two exceptions resulting from the local GAAP reforms. Germany underwent quite substantial reform of corporate law relating to financial reporting, which aimed at harmonising of German GAAP with IFRS (through Das Bilanzrechtsmodernisierungsgesetz (BilMoG)). Similarly, Spanish GAAP were partially converged with IFRS, too. Consequently, the number of adjustments of accounting income grew, which has loosened the strict conformity between both systems.
12 Hungary is deliberating the extension of IFRS usage also for separate financial statements of listed companies. However, the taxation shall be still based on Hungarian GAAP. If reform approved, Hungary will follow the same Scenario like the Czech Republic.
13 The same model as chosen by the Czech Republic. However, Portuguese GAAP are highly converged with IFRS, therefore the conversion should not be too complex.
to be made in tax returns. In addition, specific provisions are applicable in the first fiscal period, for which IFRS-based taxation was selected. A complex set of tax requirements should ensure that tax expense payable would be the same regardless which type of financial reporting\textsuperscript{14} and tax regime\textsuperscript{15} will be adopted.\textsuperscript{16}

Inspired by concerns about inappropriateness of IFRS based taxation, the researchers attempt to evaluate possible effects, which may be elicited by switching to this system of taxation. Eberhartinger and Klostermann (2007) survey confidential tax data of Austrian companies to evaluate the potential impact of IFRS on discounted tax burden under different scenarios of taxation rules. Taking into account relatively a huge BTC in Austria, they did not find any material effect on tax expense surprisingly. In two scenarios, some tax advantages for companies are identified; the last scenario exhibits only immaterial tax disadvantages. Although IFRS are perceived to be less conservative and thus tend to premature recognition of profits, the assumption that IFRS-based taxation would be higher than local GAAP taxation was not confirmed.\textsuperscript{17}

Another country study was processed by Gavana, Guggiola and Marenzi (2015) on a sample of Italian listed companies. Italian listed companies are required to prepare both consolidated and individual financial statements in compliance with IFRS. However, until 2008, IFRS statements were irrelevant for tax purposes, i.e. listed companies were forced to transform statutory individual statements based on IFRS to Italian GAAP and then to reconcile to tax base.\textsuperscript{18} This process was considered unattainable because of complexity and ambiguity of conversion from IFRS to local GAAP, huge divergence of values between both systems, different interpretation of tax rules. Therefore, tax base has been tied on with accounting earnings, regardless accounting system used in statutory individual statements. This variation in taxation setting offers an opportunity to assess the impact on tax burden. The study reveals that the shift to IFRS has produced a quite significant increase in the tax base of about 11 per cent. The last country-specific study of Schanz and Schanz (2010) uses Monte Carlo simulations to analyse the different scenarios for German environment. Depending on the definition of taxable profit (e.g. broad tax base, narrow tax base, cash flow tax base), the simulations yield different results for particular industries. In general, corporate taxation referring to IFRS figures is expected to magnify the tax burden levied on German companies.

There are also several studies calculating the effect on taxation jointly for more countries in order to identify prospective country specifics and differences supposing that a shift to IFRS-based taxation will occur. All models are based on The European Tax Analyzer program (further ‘ETA’), which has been developed for the comparison of international tax burden. The model simulates the life-cycle of an hypothetical

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\textsuperscript{14} Either IFRS or Slovak GAAP.

\textsuperscript{15} In case of IFRS in statutory accounts, IFRS or Slovak GAAP in taxation.

\textsuperscript{16} Following different structure on income statements under local GAAPs compared to comprehensive income statement by IFRS, different impact on earnings and equity can be expected as a result of IFRS adoption (Cordazzo 2013). Having tax rules constructed to reflect particular accounting regime, the shift to IFRS may enable tax avoidance by different recognition or presentation of certain items (especially gains and losses from revaluations).

\textsuperscript{17} However, the perception of higher conservatism of German (or Austrian) GAAP was already broken by the Daimler-Benz case. In connection with the IPO on New York Stock Exchange, the reconciliation of German GAAP profit of DM0.6 billion turned into the loss of DM1.8 billion under US GAAP rules (Zeff 2012).

\textsuperscript{18} Until 2008, Italy pursued the same model as the Czech Republic still uses.
enterprise over a ten-year period; tax burden is expressed as the difference between the pre-tax value and the post-tax value of the enterprise at the end of simulation period (Spengel and Oestreicher 2012). The model can control for all relevant tax rules and it contains fundamental tax and accounting data for 27 EU Member States plus the USA and Switzerland. Jacobs et al (2005), Oestreicher and Spengel (2007), Haverals (2007) use the ETA to test their hypotheses related to induced changes in tax calculation after potential shift to IFRS. Because of the same model and underlying data, they derived at similar results across both countries and industries. On average, the IFRS based tax burden is higher compared to the tax expense calculated with reference to local GAAP. The discrepancies in depreciation and in measurement of inventory (finished and work-in-progress) are recognised as the main factors of a potential higher tax burden. A rather different methodological approach, but with the same results, was adopted by Kager, Schanz and Niemann (2011) and Kager and Niemann (2013). Reconstructing tax balance sheets of Austrian, German and Dutch companies, they estimate that the introduction of IFRS would boost the tax burden. The main sources of increase are intangible assets and provisions; inventories, accounts receivable and accounts payable do not have any material impact on variation in taxation.

Finally, De Simone (2013) investigates the actual impact of IFRS adoption on income tax-motivated profit shifting by multinational entities, which are allowed/required to apply IFRS in their separate financial statements. Using data on the EU separate financial statements and ownership over 2001 to 2010, a significant 16.2 per cent tax-motivated change in reported pre-tax profits was identified following the IFRS adoption by multinational entities, relative to no material change in opportunistic tax behaviour of non-adopters. This is the first study, which empirically challenges the prevailing arguments and empirical evidence against the book-tax conformity analysed in Chapter 2. It demonstrates that the introduction of IFRS has alleviated the tax discipline. Using data from separate financial statements, De Simone (2013) overcomes the methodological shortcomings of Tang (2015) and supplements the results of Watrin, Ebert and Thomsen (2014).19 The paper’s conclusions cannot be, although, utilised to confirm that the IFRS adoption has facilitated the companies to bypass the counterbalance of accounting income and taxable profit. Despite revealed deterioration of fiscal tax revenues because of profit shifting within multinational entities, De Simone (2013) does not address whether the companies were also engaged in opportunistic earnings management in financial statements (both individual and consolidated). If the tax optimising behaviour were compensated by lower accounting earnings, then Desai’s (2005) beliefs on trade-off could be advocated. However, if tax avoidance were accompanied with boosting of accounting profits, then the conclusions of Frank, Lynch and Rego (2009) about insufficient cost levied on companies by legal acts so that they do not have to sacrifice higher accounting earnings to lower taxable profits and vice versa. The findings of De Simone (2013) may then be explained that IFRS-adopters just (ab)used the opportunity given by radical changeover in institutional environment, for which policy-makers and tax authorities had not been prepared sufficiently.20 In any case, additional empirical evidence is desirable to obtain conclusions that are more convincing.

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19 However, once again with certain misspecifications of model regarding the IFRS entities in Slovakia.
20 A similar remark on unintended consequences of the IFRS adoption by China on public tax revenue, which may overweight capital market benefits, is expressed by Chan, Lin and Tang (2013).
4. CONCLUSION

The uncertainty of future economic development results in absence of unequivocal definition of income. Consequently, decision-specific measures of income are required as solutions of distinct economic problems call for differentiated characteristics of a firm’s performance. The main goal of financial reporting is to provide users of financial statements with information useful in their decision-making, which covers various kinds of investment decisions and contractual arrangements. Furthermore, the selection of financial reporting standards by a company may transmit valuable signals about the economic prospects privately observed by the company’s management. The decision-usefulness; contracting, and signalling function of accounting contributes to mitigate the information asymmetry within the economy, characterised by dispersed incomplete information leading to the existence of moral hazard and adverse selection. Any exogenous regulatory interference mandating the reporting of uniform measure of income can thus debilitated the social value of accounting. On the other hand, concept of income, which is subject to taxation, shall be unambiguous. Taxation infers property rights and therefore the definition of taxable profit shall meet the criteria of simplicity, legal certainty, neutrality, and especially of equality. The same measure of taxable profit is essential in order not to discriminate the taxpayers of the same economic condition.

On the other hand, existence of accounting choices facilitates the management to behave opportunistically and abuse the choices at expense of other parties. Managers may manage either accounting earnings in order to increase their compensation, to avoid penalties from non-compliance with contractual obligations, to meet market expectations. Furthermore, the autonomy of tax regime profit enables managers to drive tax profits in a reverse direction than accounting earnings in order to avoid the tax burden. To merge accounting and tax profit into a single measure used in both systems is believed to an efficient remedy how to restrict the misbehaviour of management. However, the potential benefits of reduced opportunism are accompanied with the loss of informativeness and decision usefulness of accounting information, if managers decide to prioritise the tax profits.

Our paper reviewed the relevant literature on book-tax conformity. We analyse and summarise the advantages and disadvantages of weak compared to tight linkage between financial reporting and taxation definition of income. We thus contribute to current debate, whether accounting and taxation systems shall be constructed dependently or not. The theoretical findings can be relevant also for policy-makers, especially in connection with the IFRS adoption. Despite IFRS are designed primarily for the reporting at capital markets, many countries around the world have decided to mandate or permit the usage of IFRS in separate financial statements. Therefore, IFRS are applied not only for consolidated statements of listed companies, but also in statutory accounts of public and even private companies. As statutory accounts are traditional starting point for the calculation of tax profit in majority countries, policy-makers face a cardinal challenge, whether to allow IFRS-based taxation or not. The degree of book-tax conformity may substantially determine the impact on fiscal revenues from corporate income tax. The deliberations are further complicated by international capital mobility, which facilitate the cross-border profit shifting. The growing number of opportunities to relocate profits to more favourable jurisdiction is available especially to multinational corporations, which report just under the IFRS
regime. This may be risk, but also opportunities for small open economies, which struggle to retain control over taxation.

The previous findings highlight the need to examine, whether and how the adoption of IFRS has affected the relationship between taxation and accounting. The process may influence both the regulatory frameworks (i.e. legal changes) and the business practices of companies. Empirical research (focusing mainly on the EU countries) has already unveiled that companies abused the changeover to IFRS to avoid taxation at some extent. However, these findings are restricted because of partially incorrect research design (Tang 2015) or some misspecification in classification of accounting and tax regimes of certain countries (De Simone 2013; Watrin, Ebert and Thomsen 2014). As the misspecifications relate mostly to the regimes of new EU countries, we analysed regulatory frameworks for financial reporting and corporate taxation for the whole EU with emphasis on the new member states from Central and Eastern Europe. Based on the analysis, we classify the mutual relationship of financial reporting and taxation of EU countries into nine theoretical subgroups. However, the real systems were assigned only to seven subgroups. The proposed classification can serve as the basis for further clustering of countries following similar patterns in construction of taxation system in relation to financial reporting. Finally, the classification can be employed in research studies, when the control for different aspect of ‘de jure book-tax conformity’ is needed.
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