The Relationship between Tax and Book Income after Adoption IFRS in the Czech Republic in Comparison with Other European Countries

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Abstract—Prior literature provides evidence consistent with one book and tax system (the strong dependence between tax and book income) leads to a decrease in opportunistic behaviour by a company ́s managers and allow tax authorities to further control a company ́s reported earnings. Book and tax income was practically separated in 2005 for compulsory or mandatory users of IFRS in the Czech Republic. Using the effective tax rate and book-tax differences I find a greater increase/decrease after the year 2005 in comparison with the period before for companies using IFRS compared others. I interpret this evidence as indicating that two separate systems (book and tax) could lead to managers manipulating earnings and tax aggressiveness as both at once.

***Index Terms*—IFRS, tax base, book income, effective tax rate, book-tax differences.**

I. Introduction

The relationship between corporate income tax and accounting is one of the most discussed issues at present. This topic is even more current since IFRS was adopted by the European Union. Until recently, the tax base was derived from the accounting profit defined by Czech accounting law. However, from 2004 there are companies which have to use IFRS in bookkeeping and financial reporting. IFRS requires a different standard to that of Czech accounting regulation. However, Czech tax regulation has not accepted this change in the field of European accounting harmonization and still directs to pay tax on the basis of Czech accounting regulation for all entities. The fear of an adverse change in tax collection is one of the main reasons why the Czech Tax Administration does not allow income tax to be calculated according to any profit or loss modelled on IFRS.

Currently, some entities in the Czech Republic, according to the Accounting law (Art. 19 (9)), are required to apply accounting and financial reporting International Financial Reporting Standards (IFRS): *Accounting entities which are issuers of securities registered on a securities market in some of the member state of European Union, will use International financial reporting standards for bookkeeping and financial* reporting. The use of IFRS the in case of consolidation is also described: *Consolidating entities, which are issuers of securities registered on a securities market in some of the member state of European Union, will use International financial reporting standards for preparation of the consolidated financial statements and annual report.* The same paragraph says that the other consolidated entities (non issuers of securities registered on a securities market) can use IFRS in their consolidated financial reporting. It means there several types of accounting entities in the Czech Republic:

1) Issuers of securities registered on a market in EU – IFRS mandatory for individual financial reporting as well as for consolidated financial reporting.
2) Nonissuers of securities and nonconsolidated entities– IFRS prohibited for individual financial reporting.
3) Nonissuers of securities however consolidated entities (parent companies) – IFRS optional for consolidated financial reporting as well as for individual financial reporting.
4) Nonissuers of securities however entities included in the consolidation in IFRS (subsidiaries) – IFRS permitted for individual financial reporting.

Compared to the aforementioned acceptation of IFRS in the Czech accounting and financial reporting, the Czech tax legislation derives the income tax base for all entities from accounting profit or loss without influence of IFRS, but just on the basis of the Czech accounting regulation. According to §23, part 2, point a) of the Law on Income Tax No. 586/1999: *"For tax base determination it must be always resulted from profit or loss without the influence of IFRS"*

Whether an entity is required or voluntarily accepts IFRS for individual financial reporting must always determine profit or loss as if applied whole year Czech accounting regulation (Czech GAAP). In any case there is relatively strong dependence between tax and book income in the Czech Republic, due to the fact that the tax base is derived from accounting profit (albeit in accordance with Czech GAAP) although with number of adjustments.

II. IFRS Adoption Not Only for Tax Purposes across the EU

Although the European Union issued the regulation No 1606/2002 which is focused on application of IFRS in EU, there are differences in the scope of acceptance of these standards across European countries. While the Czech Republic adopted IFRS not only for consolidated financial

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statements but also for individual financial statements, many countries accepted IFRS only for consolidated financial reporting.

Different way of adopting IFRS has its support in the bellow mentioned EU regulation where is written (in section number 6): *"On 13 June 2000, the Commission published its Communication on 'EU Financial Reporting Strategy: the way forward' in which it was proposed that all publicly traded Community companies prepare their consolidated financial statements in accordance with one single set of accounting standards, namely International Accounting Standards (IAS), at the latest by 2005."* And also in section number 13*: "In accordance with the same principle, it is necessary, as regards annual accounts, to leave to Member States the option to permit or require publicly traded companies to prepare them in conformity with international accounting standards adopted in accordance with the procedure laid down in this Regulation. Member States may decide as well to extend this permission or this requirement to other companies as regards the preparation of their consolidated accounts and/or their annual accounts."*

TABLE I: APPLICATION IFRS IN EUROPEAN COUNTRIES

Country	Consolidate FS		Individual FS
	Listed	Non listed	
France	required	permitted	prohibited
Germany	required	permitted	permitted as long as additionally local GAAP financial statements are prepared and filed
Spain	required	permitted	prohibited
Austria	required	permitted	prohibited
Belgium	required	Permitted (irrevocable choice)	prohibited
Denmark	required	permitted	permitted
Finland	required	permitted	permitted
Hungary	required	permitted	prohibited
Netherlands	required	permitted	permitted
Poland	required	permitted	permitted for listed company and for subsidiaries of a parents preparing their consolidated FS in IFRS

The Table I represents the use of IFRS in accounting and financial reporting in some countries of the European Union.

Because the tax base of income is not derived from consolidated financial statements in the Czech Republic as well as in most European countries the questions remains whether the obligation to report under IFRS for listed companies would be applied only for consolidated financial statements and not for standalone financial reporting.

We can say that none of the EU countries have not fully accepted profit or loss under IFRS as the tax base of income. For example in France there is taxable profit principally based on the statutory accounts with number of adjustments provided in the tax law. Contrast, in Germany, with the introduction of BilMoG on 1st January 2010, the previously existing quasi-dependent relationship has become entirely independent. Due to the revision in Spanish GAAP, which was a partial convergence with IFRS, the tax base of income is also derived from this new modified accounting rules and at the same time a tax law was enacted that was intended to make this transition tax neutral. As well as in the Czech Republic, companies in Hungary are required to file their tax returns based on the local GAAP while taxable profit is dependent (not full dependent) on accounting profit. In Netherlands and Denmark there is taxable profit based on local tax accounting with little or no relationship between taxable and statutory accounts, which may or may not coincide with IFRS or local GAAP. Belgian taxable profit is quasi-dependent on statutory accounts which are generally kept under Belgian GAAP. There are instances where interpretation of Belgian GAAP is influenced by IFRS.

Between countries that have adopted IFRS for tax purposes can include Iceland, Ireland and United Kingdom, where IFRS is already the basis for tax reporting where it is used for financial reporting. Taxable profit is principally passed on the accounting profit however with a number of adjustments provided in the tax law.

III. LITERATURE REVIEW BASED ON OPTIMAL RELATIONSHIP BETWEEN ACCOUNTING AND TAXATION

Supporters of strengthen the relationship between accounting and taxation argue that a one-book system can lead to a decrease in opportunistic behavior by a company ́s managers and allow tax authorities to further control a company ́s reported earnings (Desai 2005, Desai and Dharmapala 2009) [1]) [2]. Many studies have concluded that the difference between book and taxable incomes was increasing throughout the late 1990s. The speculation is, that this difference was caused by managers manipulating both incomes to achieve the best of both worlds: a high reported financial accounting income to shareholders and creditors designed to boost market value and low reported taxable income designed to boost cash flows (by lowering tax payments) and reported financial accounting earnings - due to the lower tax expense (Hanlon, Shevlin 2005) [3]. For example, Deasai (2004)) [4] uses anecdotal evidence from major corporate scandals (Enron, Tyco and Xerox) to show that managers exploit the differences between book and tax reporting opportunistically thereby reducing the quality of corporate earnings measures for both book and tax purposes. Treasury (1999)) [5], Desai (2003) and Boynton at al. (2005)) [6] all document the growth of the spread between aggregate financial statement income and aggregate taxable income as reported by the IRS in the USA. Book income in excess of taxable income is consistent with manipulation of earnings reported to the capital markets, tax aggressiveness, or some combination of these two activities. Moreover Jacobs at al. (2005) [7] look at the IFRS as a ́starting point ́ for determining the taxable income and they find that if the IFRS served as a starting point for determining the taxable income, the tax burden of Czech companies would rise marginally. Deborah Schanz *et al*. (2010) [8] went further in her research. She finds that in most sectors, the distribution of the relative differences of future values of the cash flows, plus changes in inventories, minus depreciation, minus provisions, tax base dominates the other distributions. This means that this tax base definition arouses the smallest differences in the tax burden of companies even though the tax base consists of fewer elements compared to current commercial and tax law. Implementing this tax base avoids major shifts in the tax burden of different industries. This simplified tax base would cause a huge decline in both tax compliance costs and tax planning costs, because the number of tax base elements that deviate from cash flows is reduced when compared to current tax law. The cash flow tax base, which is very simple to calculate, leads always to higher positive differences. This model is based on empirical data form various industries in Germany.

Different ideological stream says that taxation issues summarize the following directions: ensuring steady revenue to the state budget, reallocation of resources by redistributing income, efficiency the fiscal device, social policy (James and Nobes, 2002) [9] while accounting issues include useful and relevant information provided to stakeholders, in order to shape the managerial and decision-making process (Nobes and Parker, 2002) [10]. The accounting and tax principle are included I the area of different goals set for financial accounting (Freedman, 1993) [13] and tax accounting, so each principle once stated towards a goal (James and Nobes, 2002) [9]. The relationship between accounting and taxation is best represented to the level of accounting practice by alternatives commonly used to taxable income computation which depend by the level of connection between them. As the level of influence by taxation over accounting, or the magnitude of the connection between them, it has evolved over time and space. (Cuzdriorean and Matis, 2012) [11]. It is true that the introduction of IFRS for listed companies was done due to capital market and accounting information users needs but not for tax influence or needs. Not only for this, European Union left open the option of applying IFRS for unconsolidated financial statements.

IV. Book Tax Differences before and after Adoption IFRS in the Czech Republic

As mentioned above, until 2005 there was relatively strong dependence between book and taxable income in the Czech Republic. All entities (whether listed or not) had to prepare financial statements (individual as well as consolidated) in accordance with Czech GAAP. Simultaneously the tax base was derived from the individual accounting profit under Czech GAAP with number of adjustments mentioned also in the tax return. However since 2005 we can say that there is no relationship between accounting and taxation profit for some companies because of the fact that listed companies must prepare individual financial reporting in accordance with IFRS and nonlisted companies but included in consolidation can prepare individual financial reporting in accordance with IFRS. Nevertheless these companies can not use IFRS profit/loss for taxation, for this purpose they must calculate profit or loss in accordance with Czech GAAP. There has been made no change in the Czech tax law since IFRS was adopted for accounting and financial reporting issues. Book and tax income was practically separated since 2005 for compulsory or mandatory users of IFRS.

There have been about 30 issuers of securities in the Czech Republic who have to use IFRS in their bookkeeping and financial reporting. It was chosen 100 companies which belong to the largest taxpayers in a matter of current tax paid and as I found more than one half of 30 issuers of securities can be classified between 100 the largest taxpayers. As written below since 2005 there is no relationship between accounting and taxation profit for some companies because of the fact that listed companies must prepare individual financial reporting in accordance with IFRS and nonlisted companies but included in consolidation can prepare individual financial reporting in accordance with IFRS. However all entities (whether using IFRS or not) have to still calculate the tax base in accordance with Czech GAAP. Until 2005 there was relatively strong dependence between tax and book income in the Czech Republic for all companies. Since this year listed companies and nonlisted companies but included in consolidation can not use IFRS profit/loss for taxation - book and tax income was separated for these companies.

I examine the effective tax rate of 100 firms from the Czech Republic in the years 2002, 2003 and 2004 – when there was the strong dependence between the tax and book income for all companies in comparison with the years 2005 – 2007 when book and tax income was separated for some companies. I would like to confirm that one tax and book system reduces earnings management activities and tax aggressiveness. Managers have to decide what is more attractive – either to achieve high reported financial accounting income to shareholders and creditors designed to boost market value or low reported taxable income designed to boost cash flows (by lowering tax payments). I state my hypothesis as follows: There is a decrease of effective tax rate before and after 2005 for companies using IFRS in comparison with others.

TABLE II: ETR in Comparison with NTR for the Selected Sample

Companies using IFRS	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Nominal Tax Rate (NTR)	31.0	31.0	28.0	26.0	24.0	24.0
Effective Tax Rate (ETR)	29.1	29.3	26.7	22.5	19.9	19.5
Difference (ETR – NTR)	**-1.9**	**-1.7**	**-1.3**	**-3.5**	**-4.1**	**-4.5**
Nonusers IFRS	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Nominal Tax Rate (NTR)	31.0	31.0	28.0	26.0	24.0	24.0
Effective Tax Rate (ETR)	25.2	25.5	22.8	20.3	18.5	18.3
Difference (ETR – NTR)	**-5.8**	**-5.5**	**-5.2**	**-5.7**	**-5.5**	**-5.7**

There are in general two types of book-tax differences – temporary differences and permanent differences. Temporary differences are differences between book and taxable incomes in one period that will reverse out in future period (Hanlon, 2012). Firm ́s reported deferred tax expense is firm ́s temporary book-tax differences (similar to Hanlon 2005, Philips at al. 2003 and others). In contrast, permanent differences are income or expense items which are different between book and tax and will never reverse. The extant literature provides evidence consistent with large book-tax differences indicating lower earnings quality or tax aggressiveness. I state my hypothesis as follows: There is an increase of the book-tax differences before 2005 and after for companies using IFRS.

The tables below shows the effective tax rate (ETR) in comparison with the nominal tax rate (NTR) in years 2002 – 2007 for companies using IFRS since 2005 and nonusers IFRS during this period. While ETR of nonusers IFRS was not practically changed (the minimum level of the difference is 5.2 and the maximum level is 5.8), ETR for companies using IFRS since 2005 was significantly changed.

I interpret this evidence as indicating that two separate systems (book and tax) could lead to managers manipulating earnings or tax aggressiveness or both at one. Because this significant increase of difference for users IFRS between 2004 and 2005 (1.3 in 2004 and 3.5 in 2005) could be caused by distinctions in IFRS and Czech GAAP – Czech GAAP could calculate the lower book income thanks its accounting rules and principles in comparison with IFRS rules and this aspect could entail the decrease of ETR between 2004 and 2005, I also looked at the year 2004 for companies using IFRS since 2005. As already written since 2005 companies have to compulsory adopt IFRS (if they are listed companies) thus they compulsory prepared financial statements in IFRS but not only for the year 2005 but also for 2004 as a comparative period. Therefore as only one year we have available financial statements of 2004 in accordance with Czech GAAP and also in accordance with IFRS as comparative period to the year 2005. We could observe relationship between two profits calculated in one year (2004) in accordance with IFRS and Czech GAAP of companies using IFRS. There is relative strong dependence between these two profits and even in this year, the reporting profit in accordance with IFRS was in most cases lower than profit under Czech GAAP.

Because taxable profit is not publicly available, I use financial statements data to calculate book-tax differences. I calculate the taxable profit for all companies as follows:

1) Current tax = taxable profit x tax rate
2) Taxable profit = current tax/tax rate

Then I subtract from the taxable profit the change in the firm´s net operating loss. Then I subtract from the result the firm´s reported income before taxes to calculate the total book-tax differences (Hanlon, 2012).

TABLE III: AVERAGE BOOK-TAX DIFFERENCES FOR THE SELECTED SAMPLE

Companies using IFRS	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Average Total book-tax differences in mil. CZK	1,769	1,721	1,674	2,820	2,993	3,011
Nonusers IFRS	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Average Total book-tax differences in mil. CZK	952	1,051	1,181	1,411	1,527	1,559

We can again observe the higher increase of average total book-tax differences after adoption IFRS for companies using IFRS in comparison with nonusers. I interpret this evidence as indicating that two separate systems (book and tax) could lead to managers manipulating earnings or tax aggressiveness or both at one.

V. CONCLUSION

This paper investigate whether separate book and tax systems lead to increase of both at once – tax aggressiveness and earnings management manipulation. Until 2005 there was relatively strong dependence between book and taxable income in the Czech Republic. All entities (whether listed or not) had to prepare financial statements (individual as well as consolidated) in accordance with Czech GAAP. Simultaneously the tax base was derived from the individual accounting profit under Czech GAAP with number of adjustments mentioned also in the tax return. However since 2005 we can say that there is no relationship between accounting and taxation profit for some companies because of the fact that listed companies must prepare individual financial reporting in accordance with IFRS and nonlisted companies but included in consolidation can prepare individual financial reporting in accordance with IFRS. Nevertheless these companies can not use IFRS profit/loss for taxation, for this purpose they must calculate profit or loss in accordance with Czech GAAP. Since this year listed companies and nonlisted companies but included in consolidation can not use IFRS profit/loss for taxation - book and tax income was separated for these companies.

Our results are consistent with two (book and tax) independent systems being associated with the larger decrease of the effective tax rate and the larger increase of book-tax differences for companies using IFRS in comparison with others in the Czech Republic. I compare the period before the year 2005 and after this year to show the condition before and after the adoption of IFRS.

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