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Working Paper

Tax compliance costs: A review of cost burdens and cost structures

arqus Discussion Paper, No. 178

Provided in Cooperation with:

arqus - Working Group in Quantitative Tax Research

Suggested Citation: Eichfelder, Sebastian; Vaillancourt, François (2014) : Tax compliance costs: A review of cost burdens and cost structures, arqus Discussion Paper, No. 178, Arbeitskreis Quantitative Steuerlehre (arqus), Berlin

This Version is available at:

<https://hdl.handle.net/10419/104539>

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Arbeitskreis Quantitative Steuerlehre
Quantitative Research in Taxation – Discussion Papers

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arqus Discussion Paper No. 178

November 2014

www.arqus.info

ISSN 1861-8944

Tax compliance costs:

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Version: November 2014*

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Abstract

Our paper provides a comprehensive report of empirical research on tax compliance costs. Compared to previous reviews, our focus is on average costs for sub-groups (individual taxpayers, small businesses, large businesses) and the composition of the cost burden with regards to different cost components (in-house time effort, external adviser costs, other monetary expenses), different taxes (e.g. income tax, value added tax) and different activities like tax accounting and tax planning. In addition, we give a short review of the most important compliance cost drivers and discuss the underlying causes of tax complexity and compliance costs.

Keywords: tax compliance costs, cost structures, cost burdens, cost drivers

JEL classification: H21, H24, H25

1. Introduction

Both individuals, in their private capacity or as part of a household, and businesses, either incorporated or sole proprietorship, interact with the tax system as taxpayers and tax collectors. They thus must comply with complex tax laws and as a consequence are burdened with tax compliance obligations that are presumed to increase with complexity. Complexity of taxation is a widely-discussed subject of the economic and public finance literature (among others Alm 1996, Kaplow 1996, Slemrod 1996, Slemrod and Yitzhaki 1996, Slemrod and Yitzhaki 2002), as it has serious consequences for the efficiency and the equity of taxation.

From an efficiency perspective, costly compliance activities can be regarded as a waste of economic resources, as they increase the effective tax burden of individuals and businesses without increasing the revenues of the government. Survey evidence suggests further that the economic burden of tax compliance decreases with growing business size (e.g. Slemrod and Venkatesh 2002) and rises with the international orientation of taxpayers (e.g. Blumenthal and

* We are thankful to John Guyton and Michael Schorn for helpful comments and advice.

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Slemrod 1995). Therefore, compliance costs could distort economic decision-making as well as the optimal allocation of resources. For example, the especially high burden of self-employed taxpayers and small businesses may reduce the number of business start-ups (Djankov et al. 2002). In addition, research provides evidence that tax complexity can result in economically wrong decisions (Rupert, Single, and Wright 2003), influences risk-taking behavior (Ackermann, Fochmann, and Mihm 2013), increases the demand for tax advice (Christian, Gupta, and Lin 1993, Eichfelder et al. 2012) and affects the willingness of taxpayers to comply with tax rules (Alm, Jackson, and McKee 1992, Erard and Ho 2003, Alm et al. 2010).

From an equity perspective, the overall effect of tax complexity can be regarded as ambiguous (Cuccia and Carnes 2001). On the one hand, certain complex tax rules (e.g. child tax credits, deductibility of certain private expenses) account in detail for the capability of taxpayers to pay their fair share to the society and should, therefore, result in a more ‘equal’ post-tax income distribution (Kaplow 1996). On the other hand, complex tax rules imply the necessity of interpretations and the possibility of making mistakes (De Bartolome 1995, Rupert, Single, and Wright 2003), which may either result in too high or too low tax payments when compared to those enhancing the ‘equal’ distribution. Hence, complex rules might provide tax planning opportunities for certain well-informed taxpayers. In addition, assertive tax planning by some taxpayers may induce the enactment of anti-tax-avoidance rules (e.g. thin-capitalization rules, see Buettner et al. 2012), which should increase the overall complexity of a tax system.

While the need for tax simplification is often raised in political debate in Western countries, the measurement of tax complexity is not an easy task. Simple proxy variables like the number or the volume of tax regulations do not distinguish between complex rules and simplifying provisions (e.g. lump-sum deductions) and cannot be regarded as convincing. Therefore, economists typically rely on estimates of the cost burden to comply with taxes as a proxy for tax complexity (Slemrod 1984, Sandford, Godwin, and Hardwick 1989). Alternative proxies are tax uncertainty (Alm, Jackson, and McKee 1992), the understandability of tax instructions (Milliron 1985), as well as the quantity and the difficulty of tax calculations (De Bartolome 1995, Cuccia and Carnes 2001). While these alternative proxies have been widely applied in experimental research, they should be extremely hard to measure in a ‘real world’ situation and are not discussed in detail in this paper.

Work on measuring tax compliance costs goes back to the 1930s when Haig (1935) carried out the first mail survey of American corporations. Notwithstanding ten compliance cost

studies carried out in the USA in the 1950s and 1960s, often at the state level, along with one Canadian and one German one, the seminal contribution in this field is widely recognized as that of Cedric Sandford (1973). Since then, an increasing body of work has been produced using various survey instruments and addressing increasingly more precise issues. This paper presents a review of empirical studies on the amount and the structure of tax compliance costs. Hence, we update previous literature reviews as provided by Vaillancourt (1987), Allers (1994), Vaillancourt (1999), Evans (2003), Evans (2008), and Vaillancourt and Clemens (2008). We limit ourselves in our main tables to the 1984-2014 period, the last 30 years.

Compared to previous reviews, our focus is on average costs for sub-groups (individual taxpayers, small businesses, large businesses) and the composition of the cost burden with regards to different cost components (in-house time effort, external adviser costs, other monetary expenses), different taxes (e.g. income tax, value added tax) and different activities like tax accounting and tax planning. Thus, our paper provides a recent review of relevant papers and also offers a detailed analysis of the existing knowledge on the level and structure of the most widely applied empirical measure of tax complexity.

Our focus is not on studies investigating compliance cost drivers by regression analyses, which go back to Slemrod and Sorum (1984) and Vaillancourt (1989). Nevertheless, we give a short review of the most important compliance cost drivers. A more detailed discussion is provided by Blaufus, Eichfelder, and Hundsdorfer (2013) for individual taxpayers and by Smulders (2013) for business taxpayers. For recent estimates see also Marcuss et al. (2013), Vaillancourt, Roy César, and Barros (2013), and Hodge and Guyton (2014).

We concentrate on gross compliance costs as most studies do not provide an estimate for net compliance costs. Therefore, we do not account in detail for 1) benefits resulting from delays between income receipts and tax payments (cash benefits), 2) benefits for the management resulting from an in-house use of tax-relevant information (managerial benefits) and 3) the deductibility of compliance costs from the tax base – for example as business expenses (tax deductibility). While these benefits generally reduce the burden of a taxpayer, they are typically not sufficient to compensate compliance costs. That holds especially for small businesses (Tran-Nam et al. 2000, Lignier 2006). In contrast to managerial benefits, cash benefits and tax deductibility reduce the compliance costs of a taxpayer by transferring the cost to the government. Hence, they only affect the distribution of costs, but not the burden for the society. As the quantification of managerial benefits is difficult, most studies ignore this aspect or provide only qualitative information (e.g. improvements of record keeping

system, better knowledge of financial affairs; see Lignier 2009a and Lignier 2009b for more detailed information and references).

The paper is structured as follows. In Section 2, we provide a short outline on methods of compliance cost measurement and issues encountered in this kind of work. Section 3 analyzes existing evidence regarding the size of the cost burden. The cost structure is discussed in Section 4, while Section 5 provides a short review of compliance cost drivers. Section 6 concludes.

2. Measurement of tax compliance costs: methods and issues

2.1. Methods

Measuring tax compliance burdens is typically done by private scholars either as research for government agencies, for research institutes, for think tanks or as a pure academic endeavor. In addition, there exist valuable investigations by consultancy firms (Arthur D. Little, Opinion Research Corporation, and Coopers & Lybrand 1988, Colmar Brunton 2005, Business New Zealand and KPMG 2007), international institutions (OECD 2001, European Communities 2004, IFC and World Bank 2009) and revenue authorities (Inland Revenue 2010a, Inland Revenue 2010b). In contrast with other areas of public policy research (e.g. investments of private companies, public administration costs), compliance costs of individuals and businesses are generally not collected or reported regularly as part of the output of public statistics offices. As a result, there is a lack of panel data on compliance costs. A more detailed discussion of various tax and regulatory compliance costs calculation methodologies is provided in European Commission (2013).

The main part of the existing literature relies on structured surveys¹ with a relatively small sample size compared to the underlying population (typically taxpayers, sometimes tax advisers like in Slemrod and Venkatesh 2002, or FIAS 2007). By contrast, research based on qualitative interview information is scarce (Evans 2003, Evans 2008). For example, Buchan et al. (2012) use case study methods to analyze the impact of GST rate changes on compliance costs.

The data base of compliance cost surveys is typically gathered by mail, e-mail, telephone or personal interviews. Other forms of cost measurement may include diary studies or time and motion studies. Diary studies account for potential errors of cost measurement by regular diary entries. Time and motion studies use stopwatches to measure the time required for well-

¹ By contrast, studies on audit fees are typically based on disclosed accounting information (Hay, Knechel, and Wong 2006).

specified compliance processes. While these sophisticated forms of cost measurement might result in more reliable cost estimates for a specific observation (Blažić 2004a), they are typically limited to small scale research (Allers 1994, Wallschutzky 1995). In addition, it seems questionable if the use of stopwatches is appropriate to measure the “true” burden of all cost elements (e.g. tax planning or a meeting with the tax adviser).

Carrying out a survey requires making the following choices (for a more detailed discussion see for example Allers 1994, Sandford 1995, World Bank 2011 and Vaillancourt, Roy César, and Barros 2013):

1. Settling on a universe of tax actors as the relevant sampling group: This will depend on the tax(es) of interest. If one is interested in a specific tax, such as either the property tax or the carbon tax (Pope, 2014), then the relevant reference group will be either the universe of property taxpayers or the universe of carbon taxpayers. Note that this will not include tax-exempt entities. If one is interested in all taxes, then one targets all taxpayers either paying or collecting at least one tax (either property tax or income tax or any other tax).
2. Obtaining a population list for the targeted universe: This can be easy or difficult; easy if one has access to the official list of taxpayers/collectors of the tax authorities and difficult if one must use information derived from non-official sources (e.g. directories of various kinds, membership lists for various bodies...). This is one aspect that can make comparisons among different studies difficult.
3. Drawing a representative sample from the targeted universe: A sample cannot be representative in all respects. Therefore, it is important to carefully select the sampling variables (e.g. age and/or income for individuals, size and/or industry for firms).
4. Selecting the relevant time period for the survey: It is the common practice of work in this area to survey annual costs. In order to reduce a potential reminder bias, the time period should be as close as possible to the most time-consuming compliance activities (e.g. filing a tax return or closing a financial year).
5. Selecting the relevant geographic area: While marginal, issues arise with respect to non-resident individual taxpayers or foreign affiliates.
6. Selecting a survey method: The choices will be determined by both cost considerations and the availability of technologies. Until 2010, internet-based surveys were rare. They are now becoming common in some countries but not feasible in others.
7. Carrying out the survey: This requires scheduling activities and ensuring they are carried out in a timely fashion in particular with respect to reminders and interactions

with respondents. One issue can be the scope of the study, which might be limited to tax compliance costs, but might also include non-tax compliance costs (e.g. costs of complying with environmental regulations, statistical obligations).

The focus on most previous studies on tax compliance costs is on taxes of a specific country. Therefore, the number of comparative multi-country databases is low (see OECD 2001, European Communities 2004). The largest multi-country database is produced as part of the “Doing Business” project of the World Bank providing estimates on regulatory burdens for 189 countries (World Bank 2013). While the benefit of this data is a comparative analysis of almost all major economies in the world, it suffers from problems noted below.

Contrasting survey-based research, tax compliance costs are estimated by the “Paying Taxes”-team of PwC and the World Bank in cooperation with national tax experts of the corresponding countries. For each country, the number of consulted tax experts varies between one expert and more than five experts. Cost estimation is based on an assumed standard business case to obtain comparable results for all relevant countries. Therefore, “Doing Business” provides a comprehensive volume of expert estimates on compliance burdens, but not representative survey-based cost estimates. There exists a considerable variance of estimated time burdens. For example, “total tax time” for a business in 2014 has been estimated as 36 hours in Bahrain, 105 hours in Australia, 131 hours in Canada, 175 hours in the United States, 218 hours in Germany and 2,600 hours in Brazil (PwC and World Bank 2013). Taking into account the lack of transparency and representativeness of cost measurement, these time burdens should be interpreted with caution. For example, survey-based average estimates for the Ukraine exceed the corresponding time burdens of “Doing Business” by more than 100 % (IFC and World Bank 2009, p. 96).

Some work provides estimates of compliance costs based on the derivative or indirect use of surveys. Vaillancourt and Blais (1995) use cost estimates for a base year and the number of line items of Canadian personal income tax forms in order to simulate the cost burden of later years. Erard and Vaillancourt (1993) use a similar approach to simulate the cost of introducing a separate personal income tax in Ontario. A different approach is applied in German studies using the opportunity cost of a prepared tax declaration (e.g. RWI 2003). Within these studies, average tax adviser costs per declaration are calculated on the basis of the German Tax Adviser Fee Act (*German: Steuerberatergebührenverordnung*). Disadvantages of such approaches include the reliance on assumptions (e.g. on an average adviser fee for a certain group of taxpayers) or the limitation to a subset of costs. For example, the opportunity-cost-based estimate of RWI (2003) only considers the average tax

preparation costs of a tax return and does not account explicitly for other relevant cost elements like book-keeping, tax planning or gathering information.

The oldest simulation approach of compliance costs appears to be the model of Arthur D. Little, Opinion Research Corporation, and Coopers & Lybrand (1988) that has been developed for the U.S. Internal Revenue Service (IRS). As this ADL methodology had a number of limitations (Contos et al. 2011, Contos et al. 2012), the IRS and the U.S. treasury department have in the last 15 years developed a number of more sophisticated simulation models for different groups of taxpayers, such as the Individual Taxpayer Burden Model ITBM (Guyton et al. 2003), the Small Business Burden Model (SBBM) (Contos et al. 2009) and the Business Taxpayer Burden Model BTBM (Contos et al. 2012). These simulation models are based on a comprehensive data analysis combining survey data and tax return data. For example, the ITBM uses information on 15,447 survey responses and tax returns (Guyton et al. 2003).

Another important simulation method used in order to estimate the compliance burden of businesses is the “Standard Cost Model” SCM (SCM Network 2005), which has been widely applied by European countries (e.g. Germany, the Netherlands, UK). While this model provides a simplified and cost-efficient method for the ex-post and even ex-ante estimation of compliance costs, the cost definition used and the implementation of measurement may have some limitations compared to the IRS approach.

While the IRS methodology is based on comprehensive and statistically representative empirical data raised by taxpayer surveys, cost estimates using SCM are typically derived from small scale research of “normally-efficient” businesses. In doing so, each compliance obligation is broken down into administrative “standard activities”. Then, the costs of each activity are measured. The number of businesses usually differs according to the relevance of compliance obligations. Costs of less important or less complex obligations may also be quantified by experts or simulation. The International SCM Manual works with five businesses in the first step and takes the median of the measured values (SCM Network 2005, pp. 41-42). Only if the variance of these five values seems to be high, the SCM Manual recommends further investigations. While such an approach can provide an estimate of the compliance burden of a specific activity (e.g. filing the corporate income tax return) for a “typical” business, it generally lacks representativeness. As cost burdens may vary significantly between taxpayers (Sandford 1995, Contos et al. 2012), this might result in erroneous cost estimates. Furthermore, the SCM is focused on regular “standard” compliance obligations being regarded as relevant from the perspective of public authorities. Therefore,

the approach does typically not account for temporary compliance costs (e.g. business start-up costs, temporary costs resulting from a change of tax laws) and non-obligatory compliance costs like the costs of tax planning. In addition, while measuring the cost burden rather from an authority than from a business perspective, relevant cost elements might be neglected. As a result, estimates of the standard cost model should be interpreted cautiously (Helm 2006, Keyworth 2006). For example, the German SCM estimated that the compliance costs of German thin-capitalization rules were 18 € per business, while non-representative statements of German tax advisers implied corresponding advisory costs ranging from 5,000 € to 100,000 € per business (Eichfelder et al. 2010, p. 69).

2.2. Methodological issues

As compliance costs are typically measured by – more or less representative – surveys, we now turn to four major methodological problems of survey-based cost measurement. The first one is the possible impact of survey non-response on cost estimates. This matters, since there are considerable variations in survey response in compliance cost surveys. The response rate of Hansford and Hasseldine (2012) is 1 percent, that of Eichfelder and Schorn (2012) and Slemrod and Venkatesh (2002) range from about 7 percent to 12 percent, while OECD (2001) and European Communities (2004) report response rates ranging from 19 percent to 83 percent.

From a theoretical perspective, the impact of non-response on compliance cost estimates is not straightforward. On the one hand, there may be an incentive for businesses with high cost burdens to participate in a survey in order to put public pressure on standard-setters and governments to reduce tax complexity (Tait 1988). On the other hand, businesses with a low degree of cost-efficiency and a high compliance burden might be unwilling to participate in compliance cost surveys because they do not want to waste their resources on additional bureaucratic effort (Sandford 1995). This second argument is underlined by evidence of low survey response rates from small businesses for which the cost burden with respect to a size indicator would be relatively high (e.g. Allers 1994, p. 113, Contos et al. 2012, Eichfelder 2013).

Wicks (1965) reports anecdotal evidence on the overestimation of costs in view of low response rates. Allers (1994) supplemented the survey questionnaire with an additional postcard asking the simple question if the survey participant had a high or low burden compared with others. Using information on respondents that answered the postcard but not the regular questionnaire, Allers (1994, p. 112) provides evidence for cost-underestimation

due to survey non-response. Using a similar method, Collard et al. (1998), Rametse and Pope (2002) and Susila and Pope (2012) find no empirical support for a biased estimate. The same holds for Schoonjans et al. (2011), Evans, Tran-Nam, and Lignier (2014) and Tran-Nam, Evans, and Lignier (2014), who compare cost burdens of early and late survey respondents (with late response being regarded as similar to non-response). Furthermore, using variation in response rates of subsamples of Belgian businesses from 2000 to 2006, Eichfelder (2013) does not find evidence for a non-response bias. All in all, empirical evidence does therefore not suggest a clear and significant bias of cost estimates due to a low response rate. Nevertheless, an impact of non-response can also not be ruled out. Methods to correct for different response rates of subsamples have been discussed by Brick et al. (2010).

The second issue, potentially more severe, results from the potential framing of survey questionnaires. Since the pioneering contribution of Tversky and Kahnemann (1974) it is well known that framing has an impact on the perception of risks and costs. Thus the wording of survey questions might very well affect compliance cost estimates (Sandford 1995). Klein-Blenkers (1980) asked German enterprises for an aggregate cost estimate, as well as for an itemization of cost components (bookkeeping costs, costs of tax law changes, etc.). He found that the sum of cost components was almost twice as high as the aggregate estimate.² There are two possible explanations for that outcome. 1) Significant parts of the cost burden have been neglected within the aggregate estimate. 2) The sum of cost components has been biased by “double-counting” of cost elements. The first explanation is supported by anecdotal evidence of Schoonjans et al. (2011), who argue that more detailed questions on compliance costs (= itemization of cost elements) increases the reliability of cost estimates. Eichfelder (2013) provides further evidence that the temporal dimension of cost measurement (cost measurement per year instead of cost measurement per month) can have a strong impact on the outcome. According to his analysis, cost estimates derived on a yearly basis are on average about 40 % smaller compared to monthly cost estimates. Combining Klein-Benkers (1980) and Eichfelder (2013), there seems to be a strong impact of the design of survey questionnaires on cost estimates. This clearly restricts the comparability of cost estimates derived by using different survey instruments.

The third issue is the valuation of the compliance time. Wallschutzky (1995) provides evidence, that self-assessments of survey participants may not be consistent over a number of

² Somewhat similar results are also reported by Sandford et al. (1981), p. 41, Rametse and Pope (2002) and Chittenden, Kauser, and Poutziouris (2005). However, these studies interpret the difference of the aggregate cost estimate (including psychological costs) and the sum of cost components as a form of psychological costs, which then becomes – in contrast to theoretical considerations – negative.

repeated interviews. In addition, there is no universally accepted method regarding this measurement issue and this is one reason why international comparisons of compliance burdens are delicate. For example, Slemrod and Sorum (1984) rely on the taxpayer's post-tax earnings per working hour, Sandford, Godwin, and Hardwick (1989) on subjective estimates of the taxpayer, Allers (1994) on average GDP per working hour and Vaillancourt (2010) on the taxpayer's gross earnings per working hour. Another issue is how to ascribe a value of time to individuals who have withdrawn from the labour force (e.g. retirees) and thus have no hourly wage, disclosed or not³, in the survey (Vaillancourt, Roy César, and Barros 2013). With an aging population, this may become an important issue in some countries.

The fourth issue is the allocation of both shared or entangled costs including time burdens of internal staff members, adviser costs for mixed issues (e.g. advice relevant for tax accounting and financial accounting) and other business expenses that fall under overhead (e.g. room costs, expenses for computer hardware). That holds especially for the allocation of tax and accounting compliance costs (Evans, Carlon, and Massey 2005) and the aggregate payroll costs of withholding taxes on wage income and social security contributions. As a result, there may be a misallocation of financial accounting or social security compliance costs as tax compliance costs or even a "double-counting" of overheads. Therefore, compliance costs of social security contributions are typically considered as part of the tax compliance burden (Collard et al. 1998).

3. Size of the cost burden

In this part of the paper, we present average estimates of tax compliance costs for different types of taxpayers. Differences between estimated cost burdens should be interpreted cautiously as they might be driven by methodological issues. There are at least four aspects of a potential bias: (1) Differences in taxpayer coverage might affect average costs as compliance costs are not evenly distributed across types of taxpayers. For example, Klun (2004) and Blažić (2004a) do not include self-employed taxpayers with high compliance costs to calculate the compliance burden of the income tax on individual taxpayers. (2) Differences in the definition of the cost burden and the design of the survey instrument. (3) The valuation of the time effort is not standardized. In the case of Australia, Pope and Fayle (1990) use a higher cost value per hour than Tran-Nam et al. (2000). (4) Cost burdens might be affected by

³ Non-disclosure is usually addressed using imputation methods through matching characteristics of respondents and refusals (Vaillancourt, Roy César, and Barros 2013).

the allocation of costs between taxpayers and the tax administration; we do not address this here and thus we focus exclusively on studies measuring tax compliance costs.

Table 1 presents a selection of studies measuring the compliance burden of individual taxpayers. Cost estimates are typically based on information of (semi-)structured survey questionnaires and refer to taxes on income. We report the relevant country, the number of survey respondents (effective sample size), the range of estimates for the average time effort, the cost burden per (taxable) income and the cost burden per tax revenue. It should be noted that if the tax rate – ceteris paribus – decreases, the cost-per-tax revenue ratio increases. If available, we report estimates for taxpayers with employment income (EM) as major income source, capital income (CA) and income from self-employment (SE).

Study	Country	Cases	Time burden (hs)	Cost per income	Cost per tax revenue	Comments
Slemrod/Sorum (1984)	USA	600	EM:18.2 SE: 57.2	1.4%	5.0-7.0%	Minnesota sample including state income tax
Tiebel (1986)	Germany	1,933	11.2	--	--	Including Wealth tax
Sandford/Godwin/ Hardwick (1989)	UK	1,776	EM:3.4-11.7 SE:9.1-20.8	EM:0.8-1.5% SE:1.5-6.8%	3.6%	including Capital gains tax
Vaillancourt (1989)	Canada	1,673	EM:4.8 SE:8,0	--	2.5%	
Pope/Fayle (1990)	Australia	1,098	EM:5.6 CA:17.0 SE:33.8	EM:0.9-2.3% CA:2.6-11.2% SE:3.1-16.1%	7.9-10.8%	
Blumenthal/Slemrod (1992)	USA	708	EM:22.5 SE:59.8	--	--	Minnesota sample including state income tax
Allers (1994)	Netherlands	4,743 (1,319)	3.0 (2.3)	--	1.4% (17%)	Income tax (wealth tax), in addition 1.5hs time of helpers
Diaz/Delgado (1995)	Spain	2,355	6.8	--	3.3%	
Malmer (1995)	Sweden	2,000	EM:1.1 SE:6.3	--	1.7%	
Evans et al. (1997)	Australia	1,665	8.5	--	4.0-5.6%	
Delgado Lobo/Salinas- Jimenez/Sanz Sanz (2001)	Spain	2,388 (2,449)	3.6 (2.2)	--	1.8% (1.2%)	Tax year 1998 (1999)
Chattopadhyay/Das- Gupta (2002b)	India	172	EM:27.9 SE:88.1	EM:1.8% SE:10%	--	
Guyton et al. (2003)	USA	15,447	EM:13.8 SE:59.5	--	8.3%	Cost per tax revenue refer to Council of Economic Advisers (2001)
RWI (2003)	Germany	278	15.8	0.9-3.7%		
Blažić (2004a)	Croatia	300	1.7	--	0.9%	Self-employed not included
Klun (2004)	Slovenia	222	1.7	0.06-0.7%	2.5%	Self-employed not included
Mathieu/Waddams Price/ Antwi (2010)	UK	320	4.5	--	--	
Vaillancourt (2010)	Canada	2,000	EM:7.7 SE:10.7	--	2.2-3.2%	
Marcuss et al. (2013)	USA	7,685	12.5	0.5-2.2% (max. 83.3%)	--	Based on ITBM survey 2010; max. burden of 83.3% for low-income taxpayers (< 5,000 \$ per year)
Blaufus/Eichfelder/ Hundsdoerfer (2013)	Germany	894	EM:7.1-8.8 SE:20.6-35.9	EM:0.4-1.5% SE:1.0-4.5%	3.1-4.7%	Quota sampling
Tran-Nam/Evans/ Lignier (2014)	Australia	517	EM:8,3	-	EM: 5,5%	

Remarks: EM: employment income; SE: self-employment income; CA: Capital income.

Table 1: Compliance costs of households, 1984-2014⁴

⁴ The numbers for Allers (1994) are based on calculations for households (Allers 1994, p. 169). Estimates for cost-per-tax revenue ratios in Evans et al. (1997) refer to Evans et al. (1997), pp. 27, 65. Including capital gains taxes, this cost-per-tax revenue ratio would increase to 6.8% (see Tran-Nam et al. 2000).

In spite of considerable differences in cost estimates, Table 1 documents that cost burdens of employees are typically below 1 % of income, while the burden of self-employed taxpayers is significantly higher. Extremely high cost-per-income ratios of up to 83.3 % have been reported by Marcuss et al. (2013). This is mainly driven by households with very low pre-tax incomes (< 5,000 U.S. \$ per year). Estimates on the cost-per tax revenue ratio lie in a range from 0.9 % (Blažić, 2004a) to 10.8 % (Pope and Fayle, 1990).

The typical cost elements are the time effort, the external adviser costs and other monetary expenses. The composition of these cost categories is documented by Table 2. The main part of the cost burden is basically the time effort. Calculating an unweighted average of all estimates in Table 2, the monetary equivalent of the time effort (time costs) accounts for about 70 % of the aggregate compliance burden. External costs encompass about 25 % of the cost burden. Other monetary expenses are rather unimportant with an average proportion of about 5 %.

Study	Country	Cases	Time burden	External costs	Other monetary expenses	Comments
Slemrod/Sorum (1984)	USA	600	84%	13%	3%	Minnesota sample including state income tax
Sandford/Godwin/Hardwick (1989)	UK	1,776	46%	52%	2%	Including Capital gains tax
Pope/Fayle (1990)	Australia	1,098	65%	32%	3%	
Blumenthal/Slemrod (1992)	USA	708	78%	19%	3%	Minnesota sample including state income tax
Díaz/Delgado (1995)	Spain	2,355	63%	32%	4%	
Evans et al. (1997)	Australia	1,665 (903)	72% (66%)	20% (23%)	6% (11%)	Net compliance costs, including (excluding) self-employed, 2% (12%) cost of capital
Delgado Lobo/Salinas-Jimenez/Sanz Sanz (2001)	Spain	2,388 (2,449)	78% (69%)	20% (26%)	2% (5%)	Tax year 1998 (1999)
Chattopadhyay/Das-Gupta (2002b)	India	172	61%	19%	20%	
Guyton et al. (2003)	USA	15,447	77%	21%	2%	Excluding state income taxes
RWI (2003)	Germany	278	64%	34%	2%	Including appeals
Klun (2004)	Slovenia	222	90%	1%	10%	Self-employed not included
Mathieu/Waddams Price/Antwi (2010)	UK	320	64%	33%	3%	

Table 2: Cost categories of households, 1984-2014

Data for the U.S. (Contos et al. 2011) and Canada (Vaillancourt, Roy César, and Barros 2013) show significant increases in the use of paid tax preparers and tax software over time. Therefore, the share of time burdens is most likely going down in future periods.

In case of business taxpayers, there is only a limited number of studies providing information on the cost-per-income ratio. For that reason, we focus for this group on the ratio of costs to turnover. Nevertheless, there are also alternative cost proxies with reference to business size including the cost burden per employee (Vaillancourt, Roy César, and Barros 2013) and the ratio of compliance costs to total assets (Slemrod and Venkatesh 2002, Contos et al. 2012). Note that existing studies generally focus on taxable businesses and do not account for

compliance costs of non-taxable entities (e.g. compliance costs of maintaining tax-exempt status, see Blumenthal and Kalambokidis 2006).

Taking into account that the absolute cost burden and the costs per turnover are strongly correlated to firm size, we provide different estimates for small enterprises (SE) as well as for medium and large enterprises (MLE). Small enterprises are defined as businesses with less than 50 employees.⁵ Bandwidths are presented when a group (SE and/or MLE) is subdivided into two or more business size classes. We generally consider the burden of business income taxes, the value added tax (respectively sales taxes if there is no VAT) and payroll taxes (wage taxes, social security contributions and other payroll taxes). In most studies, the compliance costs of social security contributions are not itemized and can therefore not be separated from other payroll taxes and contributions.

Study	Country	Cases	SE Cost per Turnover	MLE Cost per Turnover	Comments
Täuber (1984)	Germany	373	1.2-3.2%	0.18-0.75%	Costs of wholesale traders excluding social security compliance costs and large firms
Hunkeler (1985)	Switzerland	231	0.4-1.5% (0.2-0.8%)	0.24% (0.12%)	Including (excluding) personnel sector/payroll taxes and material expenses, lower bound
Sandford/Godwin/ Hardwick(1989)	UK	54	3.7%	0.17-0.62%	Exclusively corporations
Vaillancourt (1989)	Canada	309	2.1-3.8%	0.05-0.62%	Exclusively payroll taxes
Sandford/Hasseldine (1992)	New Zealand	4,841	0.4-13.4%	0.03-0.09%	
Allers (1994)	Netherlands	1,053	0.3-1.9% (0.2-1.4%)	0.01-0.18% (0.01-0.10%)	Including (excluding) temporary costs of tax law changes
Pope/Fayle/Chen (1994)	Australia	571	0.1-3.0%	0.01-0.02%	Exclusively income tax
Wurts (1995)	Canada	200	0.1-0.4%	--	Exclusively VAT
Ariff/Ismail/Loh (1997)	Singapore	111	--	0.01-0.06%	Exclusively business income tax
Erard (1997)	Canada	59	--	0.04%	Exclusively business income tax of large firms
Evans et al. (1997)	Australia	2,425	3.4%	0.17-0.18%	Excluding material expenses
Loh et al. (1997)	Malaysia	48	--	0.01-0.04%	Exclusively business income tax
Plamondon/Zussman (1998)	Canada	1,507	0.2-5.7%	--	
Chan et al. (1999)	Hong Kong	58	--	0.02-0.13%	Exclusively business income tax
OECD (2001)	OECD	7,859	0.4-7.0% (0.2-3.4%)	0.35-3.40% (0.21-1.64%)	Cost estimates for 11 OECD countries including (excluding) personnel area/payroll taxes, lower bound
Chattopadhyay/ Das-Gupta (2002b)	India	45	0.4-1.3%	0.01-0.16%	Exclusively business income tax
Blažić (2004b)	Croatia	257	2.2-15.0%	--	
Blažić (2004c)	Croatia	339	1.1-4.0%	0.09-0.47%	
European Communities (2004)	EU	700	2.6%	0.02%	Exclusively income tax and VAT
Kayser et al. (2004)	Germany	1,220	1.6-3.2% (1.0-2.1%)	0.22-0.76% (0.12-0.46%)	Including (excluding) social security costs
Colmar Brunton (2005)	New Zealand	1,907	0.2-21.0%	--	Excluding material expenses
SBP (2005)	South Africa	1,140	0.4-2.9%	0.003-0.3%	Excluding payroll taxes
Kegels et al. (2002-2008)	Belgium	1,018	3.3-12.5%	0.07-0.22%	Excluding payroll taxes and material expenses, estimate based on Eichfelder and Kegels (2014)
IFC/World Bank (2009)	Ukraine	2,082 (1,028)	0.8-8.2% (0.6-11.1%)	0.07-0.21% (--)	Compliance burden of companies (sole proprietors)
Inland Revenue (2010a)	New Zealand	1,639	0.3-13.0%	--	Excluding material expenses
Kegels (2010)	Belgium	446	2.1-4.2%	0.062-0.56%	Excluding payroll taxes and material expenses

⁵ This corresponds to the firm size criteria of the European Communities as reported in the recommendation K 1422 of the 6th of May 2003, Official Journal of the European Union of the 20th of May 2003, L 124/36. If this information is not available, we refer to the size criteria of the underlying study respectively turnover (< 2 Mio €).

Schoonjans et al. (2011)	Belgium (Flanders)	151	2.0-10.4%	--	Not explicitly including material expenses
Kegels (2012)	Belgium	416	2.3-5.5%	0.086-0.79%	Excluding payroll taxes and material expenses
Susila/Pope (2012)	Indonesia	213	--	0.004-0.11%	
Evans/Lignier/ Tran-Nam(2013)	Australia	79	--	0.004%	
Evans/Tran-Nam/ Lignier (2014)	Australia	682	1.2-9.0%	0,2%	Excluding material expenses

Remarks: SE: Small enterprises; MLE: Medium and large enterprises

Table 3: Tax compliance costs of businesses, 1984-2014⁶

Table 3 documents a significantly higher relative cost burden per turnover of small enterprises compared to medium and large enterprises. In the case of small enterprises, costs can make up a considerable part of turnover (in a number of studies more than 10%) implying a significant reduction of profitability. It should be considered that return-on-sales (turnover) is for most industries and size classes typically below 20 %. Therefore, cost burdens of say five percentage points of turnover would imply a much stronger reduction of net earnings (typically 25% and more in this case).

This is documented by empirical evidence. Chattopadhyay and Das Gupta (2002b) report a cost-per-turnover ratio of 1.3 % and a cost-per-income ratio of 8.4 %. According to Blažić (2004c), a cost-per-turnover ratio of 1.1 % (4.0 % for small businesses) corresponds to a cost-per-income ratio of 18.4 % (74.2 % for small businesses). For micro businesses in the U.S., compliance costs can amount to 150 % of net earnings after the deduction of tax compliance costs (DeLuca et al. 2007). This would imply a reduction of pre-cost profits by about 60 % resulting from tax compliance costs. There is also evidence that tax compliance costs may exceed cash tax payments in case of small businesses (Pope, Fayle, and Chen 1994, Blažić 2004b). All in all, the evidence suggests that small businesses can be severely burdened by tax compliance obligations.

As documented by Table 3, the relative compliance burden decreases strongly with business size. This is mainly due to economies of scale. Thus, a higher frequency and volume of tax-relevant compliance activities increases the cost-efficiency of tax compliance (Gunz, Macnaughton, and Wensley 1996, Verwaal 2000, p. 99). In addition, there is a spreading of fixed costs over more tax activities making the usage of specialized staff members, automatized routines or a tax department more profitable for large firms (Collard et al. 1998, Collard and Godwin 1999, Hudson and Godwin 2000).

⁶ The data of Kayser et al. (2004) has been analyzed by Eichfelder and Schorn (2012). The data of De Vil and Kegels (2002), Joos and Kegels (2004), Janssen, Kegels, and Verschueren (2006) and Kegels (2008) has been documented and analyzed by Eichfelder and Kegels (2014) (estimate of Kegels et al. 2002-2008). Note that Eichfelder and Kegels (2014) refer to the average of cost-per-revenue ratios and not – like Kegels (2010) and Kegels (2012) – to a ratio of averages. In addition, there were changes in the Belgian questionnaire overtime, which likewise affected cost measurement (Eichfelder 2013). Therefore, these estimates are not fully comparable to each other.

Similar to individual taxpayers, internal time effort and personnel expenses are the most relevant part of the cost burden of business taxpayers. This is documented by Table 4. Note that personnel costs include payments for the administrative staff as well as opportunity costs of managers and firm owners:

Study	Country	Cases	Personnel costs	External costs	Other monetary expenses	Comments
Sandford/Godwin/Hardwick (1989)	UK	680	78%	17%	5%	Value added tax (VAT)
Sandford/Godwin/Hardwick (1989)	UK	783	84%	12%	4%	Payroll taxes and social insurance contributions
Sandford/Hasseldine (1992)	New Zealand	2,954	80%	15%	1%	VAT, 4 % audit costs
Sandford/Hasseldine (1992)	New Zealand	1,887	88%	9%	3%	Payroll taxes and social insurance contributions
Sandford/Hasseldine (1992)	New Zealand	2,954	54%	42%	3%	Business income tax
Allers (1994)	Netherlands	1,053	64%	29%	7%	Including unpaid helpers (personnel costs)
Pope/Fayle/Chen (1994)	Australia	849	43%	52%	5%	Business income tax (corporations)
Slemrod/Blumenthal (1996)	USA	365	54%	16%	29%	Business income tax, large businesses
Universität Mannheim (1996)	Germany	21	63%	18%	19%	Including non-tax compliance costs
Collard et al. (1998)	UK	909	50%	23%	27%	Payroll taxes and social insurance contributions
Slemrod/Venkatesh (2002)	USA	443	59%	25%	17%	Business income tax; middle-sized businesses
Blažić (2004b)	Croatia	257	75%	9%	15%	Small businesses
Blažić (2004c)	Croatia	339	42%	18%	40%	Including unpaid helpers (personnel costs)
Kayser et al. (2004)	Germany	1,220	53%	35%	12%	Including non-tax compliance costs
Klun/Blažić (2005)	Slovenia	122	58%	26%	16%	
Susila/Pope (2012)	Indonesia	213	66%	27%	7%	
Palil et al. (2013)	Malaysia	173	59%	26%	15%	
Evans/Lignier/Tran-Nam (2013)	Australia	79	46%	34%	20%	Large businesses

Table 4: Cost categories of businesses, 1984-2014⁷

Calculating an unweighted average of all estimates in Table 4, 65 % are due to personnel costs. Adviser fees for external support account for a significantly lower fraction of 23 %, while other monetary expenses amount on average to about 12 %. Note that the ratios in Table 4 might be biased by measurement error if for example overheads for computer hardware were not correctly allocated to tax compliance activities. Nevertheless, these estimates clearly show the importance of in-house personnel costs for firms.

In addition, descriptive statistics provide some evidence that the fraction of external costs to total costs decreases with firm size (Allers 1994, p. 129, Collard et al. 1998, margin no. 4.3). This fits well with the hypothesis that large firms are more cost-efficient compared to small firms. Therefore, outsourcing compliance activities should be less important for large firms (Coolidge, Ilic, and Kisunko 2009, Eichfelder and Schorn 2012). In addition, there is some evidence that the relevance of other monetary expenses has increased by reason of automation

⁷ The estimates for Klein-Blenkers (1980) and Täuber (1984) are based on our calculations. Corresponding to DeLuca et al. (2007), we assume an average compliance effort of 25 U.S. \$ per hour for DeLuca et al. (2005).

processes and tax compliance software in recent decades (Sandford, Godwin, and Hardwick 1989, pp. 84, 114, Collard et al. 1998, no. 4.3, Contos et al. 2012).

There exists a considerable number of studies implying a high relevance of tax compliance costs compared to the overall burden of ‘red tape’. Other activities imposed on firms with a high administrative burden are typically employment law, environmental law and statistics. The ratio of tax costs to the sum of all of these compliance burdens ranges typically from about one third to two thirds.⁸ Therefore, tax compliance can be interpreted as the generally most burdensome compliance process for businesses.

In addition to the regular costs of tax compliance, there are temporary cost burdens resulting from the introduction and adaption of new tax regulations. These costs are generally referred to as start-up costs or temporary costs (Allers 1994). While minor changes of tax laws are frequent and imply a constant learning process in compliance activities, there exist also major changes with high start-up costs like the introduction of a new tax. Costs of major revisions are typically a high burden and may in the first year exceed the regular burden of tax compliance (Gunz, Macnaughton, and Wensley 1996, Pillai 2000). Small scale evidence for small Australian businesses suggests that the introduction of the Australian goods and services taxes (GST) resulted on average in start-up costs of 319 % (median 184 %) of the regular burden in a given year (Tran-Nam and Glover 2002, Glover and Tran-Nam 2005). The average start-up cost of small businesses amounted to 1.9 % of turnover and 17.8 % of the average profit before taxes. Similar to the regular costs, the relative start-up cost decrease with firm size. Using a sample of 868 observations, Rametse and Pope (2002) report a range of start-up costs for the Australian GST of 14.9 % (smallest size class) to 0.3 % (largest size class) of turnover. Temporary costs of a corresponding size should also be expected if a taxpayer is obliged for the first time to comply with an existing tax (e.g. in case of a firm start-up).

4. Structure of the cost burden

4.1. Relevance of taxes

Compliance obligations of **individual taxpayers** are mainly driven by taxes on income. In a number of countries (e.g. Australia), there exist taxes for specific sources of income like capital gains taxes or fringe benefits taxes. Furthermore, there might be different income taxes

⁸ Corresponding estimates for all four compliance cost categories are for example provided by Hamer (1979), Klein-Blenkers (1980), Hunkeler (1985), Tiebel (1986), OECD (2001), Kayser et al. (2004), Business New Zealand and KPMG (2005), Business New Zealand and KPMG (2007), Kegels (2008), Kegels (2010), Kegels (2012) and Government of Canada (2013).

at the federal level, the state level and the local level. In some countries, there exist also wealth taxes or succession/death taxes. In those cases, the compliance costs of wealth taxation are typically high for households. Tiebel (1986) finds that 40 % of the compliance time of German taxable households in the 1980's resulted from wealth taxation. Also the results of Sandford and Morrissey (1985) and Allers (1994) implicate a high compliance burden for the wealth tax. By contrast, Vaillancourt (2013) finds a relatively small compliance burden for the Canadian property tax, a tax on a subset of wealth, with an average time effort of 0.5 hours and out-of-pocket expenses of 8 Canadian \$ per individual taxpayer. For an average taxpayer of the Canadian personal income and property tax, the compliance burden of the property tax amounts to about 5-10% of the burden of the income tax.

Regarding **business taxpayers**, there are not only compliance obligations for taxes on income, but typically also for taxes on turnover (value added taxes or sales taxes). Employers have further to consider withholding taxes on wage income driven by the income tax (PAYE system), social security contributions and other taxes. Table 5 documents the percentages of costs resulting from business income taxes (BIT), payroll taxes (PAYT) and value added taxes or sales taxes (VAT/SAT). By reason of cost allocation problems, we focus on the sum of payroll taxes (including wage taxes and public social security contributions). In addition, we also report results for other taxes. If other taxes are related to taxes on income (BIT), payroll (PAYT) or turnover (VAT/SAT), they are also included in corresponding figures.

Study	Country	Cases	BIT	PAYT	VAT/SAT	Comments/Other taxes
Täuber (1984)	Germany	373	32%	16%	20% (VAT)	Local business income tax 9% (BIT), wealth tax 9%, property tax 8%, car tax 5%, other taxes 10%
Sandford/Godwin/ Hardwick (1989)	UK	54	27%	34%	27% (VAT)	
Sandford/Hasseldine (1992)	New Zealand	4,841	65%	11%	24% (VAT)	
Allers (1994)	Netherlands	1,053	17%	43%	29% (VAT)	Property tax 1%, excise taxes 1%, import duties 3%, environmental levies 1 %, dividend tax < 1 %, environmental levies 1 %
Pope (1995)	Australia	3,285	86%	12%	2% (SAT)	
Evans et al. (1997)	Australia	2,425	55%	36%	8% (SAT)	Exclusion of social security taxes, capital gain s tax (BIT) 4% , fringe benefits tax (PAYE) 5%, other taxes 1%
Blažić (2004b)	Croatia	257	31%	22%	31% (VAT)	Other taxes 16 %
Blažić (2004c)	Croatia	339	19%	25%	47% (VAT)	Other taxes 8 %
European Communities (2004)	EU	700	70%	--	30% (VAT)	VAT
Colmar Brunton (2005)	New Zealand	1,907	51%	10%	39% (VAT)	Exclusion of social security taxes, fringe benefits tax (PAYT) 1%
DeLuca et al. (2005)	USA	7,083	67%	33%	--	
Klun/Blažić (2005)	Slovenia	122	23%	10%	67% (VAT)	
FIAS (2007)	South Africa	3,429	17%	41%	42%	Based on cost estimates of external tax advisers
IFC/World Bank (2009)	Ukraine	2,082	41%	31%	13% (VAT)	Compliance cost structure of companies; VAT including costs of unified tax (2%); other taxes 15%
Inland Revenue (2010a)	New Zealand	1,655	21%	40%	38% (VAT)	Exclusion of social security taxes, fringe benefits tax (PAYT) 6%
Schoonjans et al. (2011)	Belgium (Flanders)	151	11%	21%	50% (VAT)	Environmental tax 2%, other taxes and non-allocated special activities (e.g. audits) 16%
Smulders et al. (2012)	South Africa	5,865	31%	31%	38% (VAT)	Based on internal compliance costs, other taxes, capital gains tax (BIT) 1%
Susila/Pope (2012)	Indonesia	213	28%	29%	44% (VAT)	

Barros/Vaillancourt (2013)	Canada	8,271	25%	32%	36% (VAT/SAT)	The estimate of PAYT includes payroll taxes; the estimate of VAT includes retail sales tax Internal costs (external costs) of big businesses, capital gains tax (BIT) 3% (2%), fringe benefits tax (PAYT) 12% (5%), other taxes 8% (15%) Based on compliance hours of SME's
Evans/Lignier/ Tran-Nam (2013)	Australia	79	56% (68%)	18% (8%)	16% (9%) (VAT)	
Evans/Tran-Nam/ Lignier (2014)	Australia	682	20%	35%	37% (VAT)	

Table 5: Cost structure of different tax types, 1984-2014⁹

Table 5 implies an especially high impact on compliance costs of business income taxes (including capital gains taxes) in Australia, New Zealand and the U.S. However, a diary study of Ritchie (2001) provides evidence for a strong impact of value added taxes in New Zealand on the compliance burden of small businesses. In the early 2000's Australia introduced a more costly (in terms of compliance costs) value added tax system instead of the existing wholesales tax (Rametse and Pope 2002, Tran-Nam and Glover 2002). As documented by the estimates of Evans, Tran-Nam, and Lignier (2014) and Evans, Lignier, and Tran-Nam (2013) compared to Evans et al. (1997), this has especially increased the burden of taxes on sales revenue for the smaller businesses.

Recent research from Indonesia and South Africa implies a high impact on costs of the value added tax (Susila and Pope 2012, FIAS 2007, Smulders et al. 2012). European investigations provide mixed results. The major share of costs can be due to business income taxes (Täuber 1984, European Communities 2004), the value added tax (Blažić 2004c, Klun and Blažić 2005, IFC and World Bank 2009, Schoonjans et al. 2011), or payroll taxes (Klein-Blenkers 1980, Sandford, Godwin, and Hardwick 1989, Allers 1994). Also Kayser et al. (2004) imply a high relative cost of the payroll tax system with a cost share of social security compliance costs (not explicitly considering wage income taxes) of about 40 % compared to the sum of tax compliance costs and social security compliance costs (Kayser et al. 2004, p. 132).

Regarding more specific tax obligations, there is only a limited amount of research results. Based on case studies, Sandford, Godwin, and Hardwick (1989) find withholding taxes retained by banks (e.g. capital gains tax) unimportant from a society's perspective. A more recent study of IW Consult (2006) nevertheless finds that about 20 % of the cost burden of German banks for tax compliance of third parties, statistics, and the prevention of money laundering result from withholding taxes on interest income. Tax compliance costs for third parties amount to 44.4 % of the aggregate compliance burden, 1.8 % of administrative expenses and 4.2 % of the profit before taxes.¹⁰ However, as IW Consult is connected to German industrial associations, these estimates might be interpreted with caution.

⁹ The estimates for Klein-Blenkers (1980) and Täuber (1984) are based on our calculations. Corresponding to DeLuca et al. (2007), we assume an average compliance effort of 25 U.S. \$ per hour for DeLuca et al. (2005).

¹⁰ Own calculations based on IW Consult (2006), pp. 61, 87, 92.

The compliance burden of excise taxes is typically regarded as small from a society perspective or a firm perspective (Sandford, Godwin, and Hardwick 1989, p. 160, Allers 1994, p. 178, Kuliš 2004, Smulders et al. 2012). The evidence for customs is mixed. While Bronić (2004) finds a high burden of customs compliance costs for Croatia, the corresponding burden for businesses in South Africa is small (Smulders et al. 2012). Regarding property taxes, the literature provides mixed results as well. While some studies do not find a relevant impact of this tax on the aggregate burden (Sandford, Godwin, and Hardwick 1989, p. 186, Allers 1994, p. 178), Täuber (1984) allocates 8 percent of the costs for German trade firms to the taxation of immovable property and additional 9 percent to the more general wealth tax. Also the results of Hamer (1979) imply a significant burden of the German wealth tax. Vaillancourt, Roy César, and Barros (2013) find that 7 % of total business compliance costs of Canadian firms are due to the property tax. Vitek, Pavel, and Krbova (2004) also find a high ratio of compliance costs to tax revenue for property taxes in the Czech Republic. For other taxes, the results are typically mixed and quite old. According to Täuber (1984), 5 % of the costs of German trading companies resulted from the car tax, while the results of Hamer (1979) imply significantly lower cost fractions for German handicraft businesses (1.2-2.5 %).¹¹ Sandford, Godwin, and Hardwick (1989, p. 177) find a cost share for the UK car tax of 0.75 %.

4.2. Relevance of compliance activities

Tax compliance costs result from different activities like the collection of receipts, tax accounting, the preparation of the tax return, and tax planning. From an economic perspective, especially the distinction between “unavoidable” compliance costs in the proper sense (e.g. documentation requirements, filing of the tax return) and “avoidable” tax planning costs (e.g. claiming a specific tax credit, consideration of taxes to optimize investment and financing decisions, use of complex tax shelter schemes) should be useful. Corresponding to the existing studies, the fraction of tax planning costs (apart from gathering general information about tax laws) is about 10 % to 20 % of the compliance time effort for **individual taxpayers** (Slemrod and Blumenthal 1992, Chattopadhyay and Das-Gupta 2002a, DeLuca et al. 2005). Hence, the major part of the compliance costs of individual taxpayers is due to documentation activities. This is underlined by Table 6, which documents results on

¹¹ Own calculations based on Hamer (1979), pp. 26, 64, 69, 96, 103, 113.

the allocation of tax compliance time of individual taxpayers for the U.S. federal income tax (see Slemrod and Sorum 1984, Blumenthal and Slemrod 1992 in brackets).¹²

Activities	Self-employed	Employed
Research	7% (9%)	13% (16%)
Record-keeping	73% (64%)	55% (53%)
Return preparation	13% (13%)	26% (18%)
Spent with adviser	8% (5%)	6% (5%)
Arrange financial affairs (planning)	-- (10%)	-- (9%)

Sources: Slemrod and Sorum (1984), Blumenthal and Slemrod (1992)

Table 6: Compliance activities of U.S. individual taxpayers

If we interpret the arrangement of financial affairs as proxy for tax planning, we find that about 10 percent of the compliance time is spent on that activity. By contrast and independent from employment status, record-keeping and return preparation can be identified as the by far most time-consuming activities. This is also documented by Delgado Lobo, Salinas-Jimenez, and Sanz Sanz (2001) and DeLuca et al. (2005). According to RWI (2003) as well as to Blaufus, Eichfelder, and Hundsdorfer (2013), about 2/3 of the burden of the German compliance time for the income tax is due to collecting receipts and related record-keeping, while the preparation of the tax return requires about 1/3 of time effort. For Canada and including the burden of unpaid helpers like friends and family members, Vaillancourt, Roy César, and Barros (2013) find similar results. In addition, conversations with a tax adviser and research activities are also a relevant part of the time effort.

Appeals, modifications of tax returns, and litigation (post-filing compliance costs) are not considered in detail by most studies and are typically limited to a relatively small number of taxpayers (Delgado Lobo, Salinas-Jimenez, and Sanz Sanz 2001, RWI 2003, p. 200, DeLuca et al. 2005). Vaillancourt, Roy César, and Barros (2013) find that tax appeals were carried out by 2.4% of individual tax filers in Canada with a higher likelihood for complex returns and high-income taxpayers. Using official IRS data and considering a wide definition of post-filing processes, Hodge and Guyton (2014) identify about 11.4 million taxpayers burdened by post-filing compliance activities in the U.S. (about 8.5 % of U.S. individual taxpayers if compared to Marcuss et al. 2013). Corresponding compliance costs amount to 4.6 billion U.S. \$ or 8.4 % of the aggregate cost burden (including pre-filing and filing compliance costs estimated by Marcuss et al. 2013). Post-filing compliance costs can nevertheless be a significant burden for the individual taxpayer (Tran-Nam and Blissenden 2001). Hodge and

¹² Regarding Blumenthal and Slemrod (1992) we use the sum of separate activities to calculate the average ratios.

Guyton (2014) find that post-filing compliance costs amount to 38.4 % of average costs for concerned individual taxpayers in the United States.

Table 7 provides an overview about the fraction of tax planning costs to total compliance costs (including planning costs) for **business taxpayers**. Apart from Colmar Brunton (2005), Inland Revenue (2010a) and Vaillancourt, Roy César, and Barros (2013), all studies are exclusively focused on taxes on business income. The underlying cost proxy for the calculation of the fraction of tax planning depends on the respective study.

Study	Country	Cases	Planning costs	Comments
Pope/Fayle/Chen (1994)	Australia	849	14-28%	Total costs as cost proxy
Slemrod/Blumenthal (1996)	USA	365	13-14%	Total costs as cost proxy
Ariff/Ismail/Loh (1997)	Singapore	111	32-58%	Total costs as cost proxy
Erard (1997)	Canada	59	32 (62)%	Personnel costs (external costs) as cost proxy
Loh et al. (1997)	Malaysia	48	40-46%	Total costs as cost proxy
Hanefah/Ariff/Kasipillai (2001)	Malaysia	67	41%	Total costs as cost proxy
Slemrod/Venkatesh (2002)	USA	225 (218)	4-15% (12-14%)	Total (external) costs as cost proxy
Colmar Brunton (2005)	NZ	1,907	2-6%	Personnel costs as cost proxy, business income tax, payroll taxes and VAT
DeLuca et al. (2005)	USA	5,913	3-4%	Time effort as cost proxy
Inland Revenue (2010a)	New Zealand	1,652	1-5%	Time effort as cost proxy, business income tax, payroll taxes and VAT
Vaillancourt/Roy César/Barros (2013)	Canada	23	3%	Large firms: tax minimizing strategies

Table 7: Tax planning costs of business taxpayers

Similar to research on individual taxpayers, tax planning costs are typically not the major part of the cost burden. That holds specifically for the value added tax and payroll taxes (DeLuca et al. 2004, Colmar Brunton 2005, DeLuca et al. 2005, Inland Revenue 2010a). While planning costs seem to be relatively unimportant in case of micro and small businesses (Colmar Brunton 2005, DeLuca et al. 2005, Inland Revenue 2010a, p. 37), they can be a considerable part of the compliance burden regarding medium and large firms (Ariff, Ismail, and Loh 1997, Erard 1997, Slemrod and Venkatesh 2002).

Thus, it may be hypothesized that the fraction of planning costs increases with business size. Descriptive statistics are typically in line with this hypothesis (Ariff, Ismail, and Loh 1997, Colmar Brunton 2005, Inland Revenue 2010a, p. 39). That holds especially if the costs of appeals and litigation are considered as tax planning costs in the broader sense (Slemrod and Blumenthal 1996, Slemrod and Venkatesh 2002).

A theoretical explanation is provided by economies of scale in the tax avoidance technology, which corresponds to the model of Slemrod (2001) and fits well with the general observation of economies of scale in tax compliance processes. Therefore, the costs of book-keeping and tax return preparation decrease in firm size, while tax planning becomes more cost-efficient for large firms. In line with this argument, there is empirical evidence on a negative

correlation between firm size and the effective tax rate (ETR) of businesses (Porcano 1986, Rego 2003, Richardson and Lanis 2007).¹³

Table 8 provides a detailed documentation of the compliance activities of small businesses in New Zealand (Colmar Brunton 2005, p. 39, Inland Revenue 2010a, p. 37) for the goods and services tax (GST i.e. VAT), business income taxes (BIT), payroll taxes (PAYT) and the fringe benefits tax (FBT). For all taxes, book-keeping and tax filing operations are most important. In addition, dealing with tax advisers and – to a lesser extent – learning about tax laws and dealing with the administration are relevant issues. Tax planning is relatively unimportant. That holds especially for payroll taxes, the fringe benefits tax and VAT.

Compliance activities	VAT	BIT	PAYT	FBT
Recording information	49% (55%)	41% (38%)	40% (47%)	30% (37%)
Calculating tax, completing and filing returns, paying tax	24% (21%)	20% (19%)	29% (25%)	28% (30%)
Dealing with tax advisers (including providing information)	10% (10%)	20% (20%)	9% (10%)	17% (8%)
Dealing with administration (IRD)	5% (4%)	6% (5%)	7% (8%)	5% (3%)
Tax planning	3% (2%)	6% (5%)	2% (1%)	3% (2%)
Learning about tax laws (new or existing)	6% (6%)	7% (8%)	9% (10%)	15% (21%)
Other	1% (1%)	0% (4%)	0% (0%)	0%

Sources: Colmar Brunton (2005), Inland Revenue (2010a)

Table 8: Compliance activities of SME's in New Zealand 2004 (2009)

A potential methodological problem emanates from the fact that financial accounting costs might have been misallocated as tax compliance costs. This would imply an overestimation of the relevance of tax accounting activities. For that reason (cost misspecification), the tax and financial accounting overlap is an important area of research. Colmar Brunton (2005) and Inland Revenue (2010a) find a high share in total costs of documentation requirements not only for the business income tax, but also for the value added tax, payroll taxes and the fringe benefits tax, which should not be substantially driven by financial accounting obligations. In addition, Evans, Carlon, and Massey (2005) and Lignier and Evans (2012) find for Australia that tax compliance costs make up a significant part of the aggregate accounting costs (financial accounting and tax accounting). According to Lignier and Evans (2012) about 1/3 (2/3) of the aggregate accounting compliance costs result from tax regulations (financial accounting regulations). For South Africa, FIAS (2007) and Smulders et al. (2012) calculate similar allocations of compliance costs between tax and financial accounting obligations. Thus, taking into account the high relevance of general accounting issues, it should not be unexpected that tax accounting is an important cost-relevant aspect as well.

¹³ Nevertheless, there are also contradictory results, see Zimmerman (1983) and the short review of Richardson and Lanis (2007).

Turning to post-filing compliance costs of businesses, Täuber (1984, p. 133) finds a rather limited relevance of the costs of tax audits with an average cost fraction of 1.9 % for small businesses. However, for bigger size classes the fraction of audit costs increases to 8.9 %. This should be partially driven by the higher probability of tax audits for large firms and is in line with the findings of Slemrod and Venkatesh (2002) for medium and large businesses in the U.S. As documented by Table 9, the results of Slemrod and Venkatesh (2002) provide some evidence that the fraction of tax planning costs and post-filing costs (especially audit costs) increases in firm sizes (measured by assets), while the relevance of recordkeeping and data collection issues decreases in firm size.

Firm size (assets in million U.S. \$)/ Activities	< 5	5-10	10-50	50-100	100-250	250-1.000	>1.000
Tax planning	4%	7% (12%)	12% (13%)	14% (9%)	8% (13%)	15% (14%)	15%
Tax guidance/Information	3%	10% (7%)	10% (8%)	6% (6%)	9% (8%)	9% (8%)	8%
Recordkeeping	9%	31% (5%)	26% (5%)	17% (9%)	13% (2%)	12% (4%)	9%
Other pre-filing costs	0%	N.A. (1%)	1% (2%)	1% (1%)	0% (1%)	1% (1%)	1%
Collecting data	56%	38% (23%)	32% (20%)	29% (21%)	32% (24%)	25% (15%)	16%
Preparation of tax return	4%	2% (28%)	4% (28%)	6% (31%)	14% (24%)	6% (25%)	8%
Calculation of tax	N.A.	N.A. (8%)	0% (8%)	N.A. (9%)	1% (9%)	1% (8%)	2%
Other filing costs	12%	7% (2%)	8% (1%)	14% (2%)	15% (3%)	19% (3%)	23%
Amended returns	N.A.	2% (3%)	2% (2%)	3% (2%)	1% (N.A.)	3% (5%)	2%
Audit process	N.A.	1% (4%)	2% (5%)	3% (3%)	3% (2%)	5% (14%)	10%
Responding to tax administration notices	N.A.	2% (4%)	3% (5%)	4% (7%)	3% (12%)	5% (5%)	4%
Other post-filing	N.A.						

Remarks: own calculations using the results of Slemrod and Venkatesh (2002); rounded percentage values; firm size measured by the value of assets in million U.S. \$.

Table 9: Compliance activities of middle-sized businesses in the U.S.

Table 10 documents the allocation of compliance activities for big business in the U.S. corresponding to Slemrod and Blumenthal (1996) for the tax department, other in-house business units and external advisers.

Compliance activities	Tax department	Other department	Outside assistance	Total costs
Record-keeping	10%	49%	2%	14%
Research	11%	4%	17%	11%
Planning	12%	5%	20%	14%
Dealing with other personnel	7%	6%	3%	6%
Filing returns	30%	9%	7%	21%
Audits	13%	7%	12%	12%
Appeals	4%	2%	12%	5%
Litigation	2%	1%	19%	6%
Preparing information for financial statements	6%	14%	2%	6%
Monitoring tax process	5%	3%	2%	5%
Other	0%	0%	2%	0%

Source: Slemrod and Blumenthal (1996)

Table 10: Compliance activities of big business in the U.S.

Contrasting research on medium and small businesses (Slemrod and Venkatesh 2002, Colmar Brunton 2005, DeLuca et al. 2005, USAID 2008, Inland Revenue 2010a), about one quarter of costs can be allocated to appeals, litigation and especially audits. This should be driven by economies of scale in the compliance process, a higher probability of audit for large firms and a higher willingness of large firms to take on legal disputes. Furthermore, filing the tax return (21 %), record-keeping (14 %), tax planning (14 %) and research (11 %) remain cost-relevant activities. While the preparation of the tax return is mainly executed by the tax department, record-keeping is the most relevant activity for the other in-house business units, while external advisers are especially focused on tax planning, appeals and litigation.

Concluding, the most important activities cost-wise are the documentation requirements (collecting receipts, tax accounting, book-keeping) and the filing of tax returns, while tax planning seems to be only important for large firms. Thus, the reduction of planning options is likewise not the most important cost-saving form of tax simplification. Similar statements hold also for post-filing activities like audits, amended returns, appeals and litigation, which, nevertheless, impact a high burden on affected taxpayers. In addition, the cooperation with tax advisers, tax authorities and the learning of tax rules are significant parts of the cost burden.

5. Compliance cost drivers

The potentially most-relevant driver for high tax compliance burdens is the complexity of tax law, being affected by the number of taxes on the national and regional level (e.g. state income taxes and local income taxes, see Slemrod and Blumenthal 1996, Erard 1997), the number and the understandability of tax regulations (Sawyer 2011, Marcuss et al. 2013, Eichfelder and Kegels 2014), the number of tax rates (e.g. for the VAT), tax exemptions, tax deductions and tax credits for certain situations (Sandford et al. 1981, p. 62, Slemrod 1989, Wurts 1995, DeLuca et al. 2005), the frequency of tax law changes (Rametse and Pope 2002, Eichfelder, Kegels and Schorn 2011), the frequency of tax payments (e.g. monthly payments, Collard and Godwin 1999), the number of tax expenditures (Weinstein 2014) and the existence of anti-tax avoidance rules like transfer pricing guidelines (European Communities 2004) or the alternative minimum tax in the U.S. (Slemrod and Blumenthal 1996, DeLuca et al. 2005).

While it should be clear that complex tax regulations increase compliance costs, the underlying reasons are still a subject of academic debate. Important topics from a political economy perspective are lobbying and tax exemptions for certain groups of taxpayers (Hettich and Winer 2005). Therefore, complexity emanates at least indirectly from tax

preferences for certain groups of individuals or businesses, including rules to limit the access to these preferences. From a game-theoretical perspective, important issues are tax evasion and tax planning (Slemrod and Yitzhaki 2002, Sandmo 2005, Eichfelder and Kegels 2010). Hence, tax complexity results in part from the requirement of tax agencies to prevent aggressive tax evasion and tax avoidance behavior by strict documentation requirements (e.g. transfer pricing guidelines) and complicated anti-tax-avoidance rules (e.g. non-deductible tax losses, alternative minimum tax, thin-capitalization rules, transfer pricing guidelines; see European Communities 2004, DeLuca et al. 2005, Buettner et al. 2014). In addition, the steady development of planning strategies increases the necessity of frequent tax law changes, which implies higher 'start-up' compliance costs (e.g. Rametse and Pope 2002, Tran-Nam and Glover 2005). Last but not least, from a law and economics perspective, an important issue is the general complexity of legal contracts and business operations. It should be considered that tax law generally follows civil law. Therefore, all the complicated contracts, legal structures and business concepts have to be considered by a tax system.

While the complexity of the tax law should be an important driver of compliance costs it is not the whole story. A second important cost driver is tax administration. This includes the customer-orientation of tax authorities (Alm et al. 2010, Eichfelder, Kegels, and Schorn 2011, Eichfelder and Kegels 2014) encompassing the understandability of tax forms, the availability of official staff members, the reliability of administrative statements and suggestions, the appropriateness of compliance obligations, and the proportionality of audit processes. Eichfelder and Kegels (2014) find evidence that customer-friendly Belgian tax authorities reduce the compliance burden of their business customers by about 20 % on average. An important aspect of the current political debate on tax administration is e-government with an emphasis on e-filing and pre-filled income tax returns. In spite of high political expectations in e-government procedures, existing empirical evidence for a significant cost reduction is not very strong (see Vaillancourt 2011 with evidence for Australia, Belgium, Canada/Québec, Spain and the United States/California). Yilmaz and Coolidge (2014) provide only weak evidence for potential cost savings of e-filing in South Africa. They even find higher compliance costs for SME e-filers in Nepal and Ukraine. This somewhat disappointing outcome might be driven by double reporting (paper and e-filing), the legal requirement to file electronically (instead of an e-filing option like in South Africa) and/or complicated e-filing practices in both countries. Moreover, taxpayers seem to need a number of years to learn and effectively use e-filing, while the surveys for Nepal and Ukraine were performed

quite shortly after the introduction of e-filing. Therefore, the results for Nepal and Ukraine should be interpreted with caution.

A further administrative issue is the management of tax compliance processes including the optimal usage of tax software and the outsourcing of compliance activities to tax advisers. Due to economies of scale in the compliance process (see Table 3), the optimal compliance technology depends on a taxpayers' income, with the use of tax software and in-house tax departments being more cost-efficient for larger firms (Collard and Godwin 1999, Hudson and Godwin 2000). While evidence on cost savings due to tax software usage is relatively limited (see Guyton et al. 2005 and Eichfelder and Schorn 2012 with further references), the results of Coolidge, Ilic, and Kisunko (2009), Eichfelder and Schorn (2012) and Eichfelder and Kegels (2014) imply for businesses using paid preparation a negative correlation of the compliance burden and the degree of outsourcing. This holds especially for small businesses and suggests an insufficient use of paid preparation. Hence, a significant number of small businesses seems to rely too heavily on in-house resources and might effectively save money if the use of external tax advice would be extended. It is an open question why businesses might choose not to make use of this opportunity. For example, cash flow constraints may impede replacing the working time of employees or owners by billings of paid preparers. However, considering typical tax adviser fees, this is not a likely explanation for profitable businesses. Alternative explanations are overconfidence of small self-employed businesses as well as mistrust against outsourcing financial affairs (see Eichfelder and Schorn 2012 for a more detailed discussion). From this perspective, one reason for the high compliance burden of businesses in Ukraine could be the extremely low degree of outsourcing tax processes to external advisers (IFC and World Bank 2009, p. 22).

A third important cost driver is tax accounting. As documented in Section 4.2, bookkeeping and documentation requirements are the most costly compliance activities. That holds especially for self-employed taxpayers and businesses, which are obliged to calculate their taxable profit on their own. Taking into account strong economies of scale in compliance processes (regressive compliance burden, see Table 3), it should therefore not be unexpected that self-employed taxpayers and small businesses have the by far highest cost burden. Note that there can exist considerable differences between tax accounting and financial accounting. As a result, the financial accounting system has to deal with temporary book-tax differences and permanent book-tax differences (see Hanlon and Heitzman 2010), which in turn increase the compliance burden. A high burden of book-keeping activities also emanates from the value added tax (see Table 8). Similar to the income tax, VAT tax rules have to be considered

by the financial accounting system and will result in corresponding compliance costs. An additional burden is borne by employers, who have to calculate and withhold payroll taxes from their employees, which again implies an increase in accounting obligations (see Table 5, Table 8). That holds especially for taxes on fringe benefits, as the value of fringe benefits can be hard to establish (Pope, Fayle, and Chen 1993, Evans et al. 1997, DeLuca et al. 2005).

International tax issues can be regarded as a fourth main source of tax complexity. Note that taxpayers with international transactions have to comply with national tax laws of at least two countries as well as with double tax treaties and potential other international tax rules (e.g. OECD transfer pricing regulations, EU parent-subsidiary directive). As a result, international tax problems may become extremely complex. It is therefore no surprise that existing studies generally find higher compliance costs for international earnings of individual taxpayers and businesses (Blumenthal and Slemrod 1995, European Communities 2004, DeLuca et al. 2005). This can also matter in federations such as the United States where constituent units have different tax rules. It then becomes an inter-regional problem and increases the number of taxes (Gupta and Mills 2003). Further important aspects of compliance costs may be the legal form and industries of businesses. However, corresponding results strongly depend on national tax rules and are not generalizable.

6. Conclusion

Based on a review of empirical contributions on the tax compliance burden of individual and business taxpayers we are able to make a number of statements on major properties of tax compliance costs. An important result is the target-specific impact of tax compliance burdens and tax complexity. While the burden of employees and large businesses is relatively small, there is clear evidence on high burdens for small businesses and self-employed taxpayers. This is mainly driven by two aspects. (1) The tax compliance process is focused on private businesses as administrative units. Businesses and self-employed taxpayers care about tax accounting regulations, calculate their taxable profit by themselves, comply with sales and value added tax obligations and withhold taxes for their employees. By contrast, employees typically have to file their income tax return based on the payroll accounting of their employer. In addition, the calculation of the taxable income of employees is less complex, as tax accounting regulations are not an issue. The high relevance of book-keeping and accounting obligations for self-employed taxpayers and small businesses is documented by Table 6 and Table 8 of this paper. (2) There exist considerable economies of scale within the tax compliance process driven by learning behavior, the decreasing relevance of overheads

and specialization advantages. Therefore, the cost burden per turnover of large firms may be below 0.01 percentage points, while the corresponding ratio of small firms may be several percentage points and can even exceed the regular tax payment. Thus, compliance costs might be an obstacle for entrepreneurship and self-employment (Djankov et al. 2002, Grilo and Irigoyen 2006).

Compared to other compliance obligations and sources of ‘red tape’, tax compliance costs (including social security compliance costs) are an important part of the overall burden. Therefore, reducing tax complexity can be regarded as an appropriate strategy to tackle ‘red tape’ in general. Despite from an increasing relevance of paid preparation and software usage, the in-house burden (including personnel effort and other monetary expenses) is still the major cost element. The relevance of external adviser costs decreases with firm size, while investments in hardware and software are more relevant for large firms. In addition to regular costs, there are also temporary compliance costs resulting from having to conform with new rules (from a taxpayer perspective). These costs are most relevant in case of the introduction of a new tax, major tax law changes or the start-up of new economic activities (e.g. the foundation of a firm) and can exceed regular compliance burdens during the first year.

The main burden for individual taxpayers is the income tax. However, wealth taxes may also imply a high burden for individuals. The most relevant taxes for businesses taxpayers are taxes on income, the value added tax (VAT) and withholding taxes on wage income including social security contributions (payroll taxes). VAT seems to be significantly more costly than more simple sales taxes (see Table 5). Furthermore, taxes on movable and immovable property (property tax, wealth tax) should be connected with a significant burden if the valuation of the underlying assets (e.g. real property, other taxable assets) is complex. This is mainly driven by valuation problems (e.g. regarding the value of immovable property). In addition, import duties can be a relevant burden, while excise taxes are regarded as relatively unimportant.

Bookkeeping, tax accounting and tax return preparation are the most costly compliance activities, while tax planning and post-filing activities (amended returns, tax audits, appeals, litigation) are generally less important. That holds especially for self-employed taxpayers and small firms with a high relative cost of compliance obligations and a main cost focus on documentation requirements, tax accounting and tax return preparation. Also for employees the main part of costs lies on the collection of documents, filing the tax return and other documentation requirements. The relevance of tax planning costs increases in firm size. That holds also for the costs of audits, appeals and litigation. Again, this should be driven by

economies of scale. While large firms are more cost-efficient in compliance processes in the proper sense, they seem to be also more cost-efficient in tax planning, which justifies more professional and more costly planning activities like tax shelters, complex financial structures and shifting income to low-tax countries. As a result, appeals, audits and litigation become more relevant as well.

Regarding the drivers of tax compliance burdens, the most relevant aspects are 1) tax law complexity (including the number of taxes, the understandability of regulations and the complicacy of calculations), 2) tax administration (including the customer orientation of authorities, e-government issues and the efficiency of taxpayers to manage compliance processes), 3) tax accounting issues (including the high burden resulting from documentation requirements as well as the connection with financial accounting rules) and 4) international (inter-regional) problems of taxation, which generally increase compliance burdens (e.g. double tax treaties, transfer pricing guidelines, multiple tax base sharing formulas).

Taking into account that compliance costs are generally a burden for an economy, tax simplification remains an important target for fiscal policy. That holds especially with regards to self-employed taxpayers and small businesses with the effectively highest burden of tax compliance. While this general statement should be rather undisputed, it still remains an open question, what should be the most effective and promising ways of reducing tax complexity. While e-government, pre-filled income tax returns and e-filing have been important topics of tax policy debate in recent times, the empirical evidence on corresponding cost savings is relatively weak (e.g. Hudson and Godwin 2000, Verwaal 2000, Guyton et al. 2005, Vaillancourt 2011, Eichfelder and Schorn 2012, Yilmaz and Coolidge 2014). However, Eichfelder and Kegels (2014) find evidence that a general customer orientation of administrative authorities should significantly reduce costs. Furthermore, the findings of Coolidge, Ilic, and Kisunko (2009) and Eichfelder and Schorn (2012) imply potential cost savings due to a higher demand for tax preparation services; tax deductibility or not for individuals or firms may be one driver of the demand for such services.

A weak point of existing data on tax compliance costs is the lack of international data bases including more than one country (OECD 2001, European Communities 2004). As a result, international comparisons of the complexity of tax systems are a delicate issue. Thus, while existing results for individuals/households imply a relatively high burden in Australia and the U.S., this finding should be interpreted with caution (Blaufus, Eichfelder and Hundsdorfer 2013). Research based on a simulation of compliance hours for a fictional business case instead of an empirical measurement of costs (PwC and World Bank 2013) is a first step but

is probably insufficient to achieve that target. Comparative research including more than one country would also allow for best practice considerations of questions such as: why the VAT of country A might be much more costly compared to country B. This might enhance our understanding, what aspects of the tax code might be most problematic. In addition, such comparisons might also build up political pressure, which is generally a prerequisite of tax simplification. From our perspective, internationally comparable analyses of tax compliance burdens should be an important target for future research. A recent cross-country study for small businesses in Australia, Canada, South Africa and the United Kingdom is provided by Evans et al. (2014).

Another problem of the existing quantitative information is the lack of panel data. Therefore, our knowledge on the development of cost burdens over time is limited. For example, Evans, Tran-Nam, and Lignier (2014) conclude that compliance costs of small and medium businesses in Australia have more than doubled in real terms between 1995 and 2012. Somewhat similar results are provided by Smulders et al. (2012) for South Africa comparing their cost estimates to previous research (FIAS 2007, USAID 2008). By contrast, the results of Contos et al. (2011) imply a reduction of real compliance costs for U.S. individual taxpayers of about 7.5 % between 2000 and 2007 in spite of an increase in tax law complexity. Inland Revenue (2010b) provides evidence for a limited reduction of compliance costs for small businesses in New Zealand. These contradictory results demand further research.

Last but not least, an important issue for further research should be the overlap of tax accounting and financial accounting. The existing research clearly suggests that gathering receipts, record-keeping and tax accounting are main elements of the tax compliance burden. In addition, the close connection of tax accounting and financial accounting might bias cost estimates due to a misallocation of overheads. From a compliance cost perspective, an obvious possibility to reduce tax compliance costs would be book-tax accounting conformity (see Zinn and Spengel 2012 with further references). However, such a development is hard to implement given anti-tax avoidance rules and international accounting regulations like International Financial Reporting Standards. In spite of these important issues, the number of studies analyzing tax and accounting compliance costs is relatively small (Evans, Carlon and Massey 2005, FIAS 2007, Lignier and Evans 2012, Smulders et al. 2012).

In conclusion, tax complexity and thus high tax compliance costs are international problems, which are not limited to a specific country or tax system. Moreover, it is still an open question, as to what might be the most promising way to simplify a tax system. Therefore, the

question of Slemrod (1996) “Which is the simplest tax system of them all?” remains unanswered and in need of further research.

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Impressum:

Arbeitskreis Quantitative Steuerlehre, arqus, e.V.

Vorstand: Prof. Dr. Ralf Maiterth (Vorsitzender),
Prof. Dr. Kay Blaufus, Prof. Dr. Dr. Andreas Löffler
Sitz des Vereins: Berlin

Herausgeber: Kay Blaufus, Jochen Hundsdoerfer,
Martin Jacob, Dirk Kiesewetter, Rolf J. König,
Lutz Kruschwitz, Andreas Löffler, Ralf Maiterth,
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ISSN 1861-8944