Tax Compliance Costs: Selected Post-transitional Countries and the Czech Republic

Jan Pavel\textsuperscript{a}, Leoš Vítek\textsuperscript{a,}\textsuperscript{*}

\textsuperscript{*} University of Economics, Faculty of Finance and Accounting, W. Churchilla 4, Prague 3 130 67, Czech Republic

Abstract

The paper presents the tax compliance costs (TCC) measurements in the Czech Republic, Slovakia, Slovenia and Croatia during the last decade and discusses methods and results of different studies. The authors also present their results of the Czech TCC measurements in 2004 and 2008 for the VAT, corporate income tax, personal income tax of employees and self-employed. The paper uses the econometric analysis to shows which factors affect the size of the TCC at tax payer’s level and analyses how the tax payer’s size and other factors influence the relative volume of TCC.

Keywords: Compliance Costs; Czech Republic; Slovakia; Slovenia; Croatia.

1. Introduction

Tax system may be efficient, provided that the administrative costs (AC) of government associated with the tax collection, costs of private sector, compliance costs caused by the fulfillment of tax duty (TCC) and the costs resulting from the distortions caused by taxation (deadweight losses) are minimized (Zee 1995). In literature (Pavel and Vítek, 2012), the administrative and compliance costs are also referred to as the transaction costs of the tax system. None of the three cost groups includes tax duty per se; it only represents transfer of utility from private to public sector.

* Corresponding author. Tel.: +420-224-095-172 ; fax: +420-224-095-128.
E-mail address: leos.vitek@vse.cz
In the past decades, the importance of the compliance taxation costs has been accentuated for several reasons. Theoretically, it is necessary to perceive them along with tax as part of the overall reduction of net income, or utility, respectively, of tax payers. Through the economic costs of obtaining resources for government expenses, this has an impact on the discourse regarding the setting of an optimum tax system (Alm, 1996) and an optimum size of government (Feldstein, 1997). Such costs are important for the practical economic and tax policy from the point of view of the supply theory: they limit the production capacity of the economic system and profitability of companies, and thus function similarly as higher tax rates or a broader tax base. On the European level and in the OECD, the attempt to support economic growth manifests itself through the policy of restricting administrative burdens, whereas the administrative burdens associated with the fulfillment of tax liabilities are (in the amount of 46 %) estimated as their biggest part (OECD, 2001). In the Czech Republic, the effort to cut compliance costs has reflected in a proposal for a system change in tax administration where the key declared objective is to create a unified tax collection place, which would reduce the compliance costs of tax payers and tax obligors.

Compliance costs of taxation are one of the instruments designed for measuring the complexity of tax system. The basic methodological framework of studying compliance costs is stipulated in the publications of Sandford et al. (1989) and Sandford (1995). The compliance costs of taxation are defined here as the costs of tax payers caused by the fulfillment of the liabilities imposed upon them by the tax legislation and tax administration in addition to their actually paid taxes. These costs would cease to exist if the tax was abolished.

Total operating costs of taxation (transaction costs of the tax system) include compliance cost and also administrative cost of the tax system:

\[ TOC = CC + CB + AC + AB + OC \]  

where TOC are total operating costs of the tax system, CC and CU are compliance costs and benefits of private sector, AB and AB are administrative costs and benefits of public sector and OC are other cost connected with paying of taxes.

TCC are problematic in the economic system for several reasons. First, it is not a transfer of utility from the private sector over to government, i.e. that scarce resources are being utilized inefficiently in an economic system. Second, empirical studies show a regressive nature of the compliance costs with respect to the size of a tax entity, which means that they represent a heavier burden for small and medium-sized businesses or entrepreneurs. Third, higher compliance costs may, according to Erard and Ho (2003), encourage tax evasions. And fourth, according to Eichfelder and Schorn (2009), compliance costs tend to grow in tax payers’ cross-border activities and thus disturb functioning of the unified EU internal market.

Compliance costs associated with a tax system may have a different nature and origin. It may involve the “classic” compliance costs (costs of employees, time, premises and external supplies of goods and services), cash-flow costs, psychological costs. Compliance costs may be compensated for by utilities associated with the existence of tax system (cash-flow utilities and management utilities) and then determine the social compliance costs of taxation in private sector (SCC) or, according to other authors (Tran-Nam et al., 2000), the net compliance costs of taxation (NCC):

\[ SCC = CC_K + CC_{CF} + CC_{MC} - CU_{CF} - CU_M \]  

where SCC are social compliance costs of taxation, CC_K are “classical” compliance costs of taxation, CC_{CF} are cash flow costs of private sector, CC_{MC} are psychological costs of taxpayers, CU_{CF} and CU_{MU} are cash flow and managerial benefits of the private sector from the existence of a tax system.

The key studies dedicated to compliance costs’ measurement have been conducted in Great Britain (Sandford, 1973) and in the USA (Slemrod and Sorum, 1984). Meta-analysis of the compliance costs’ measurement studies is provided by Vaillancourt (1987), Evans (2003 a 2008), Coolidge (2012), and for the period of 2000-2010 also by Susila and Pope (2012).

The aim of this paper is to compare the size of the compliance costs of taxation in the selected Central European countries, and to apply the econometric analysis as to show which factors influence their size on the level of individual tax payers in the Czech Republic.
2. Data and methods

The measurement of compliance costs is based on their determination in taxpayers. Some of the following methods are applied as to measure the compliance costs: (i) structured questionnaires, (ii) structured interviews with respondents, (iii) studies of time and work costs of taxpayers conducted by experts with participation of the taxpayers, and (iv) simulation and modeling of the compliance costs in standardized situations by means of estimated itemized costs associated with the fulfillment of tax liabilities (Vaillancourt, 1987).

The total size of compliance costs is determined by several factors. First, by the quantity of taxpayers; second, by the structure of tax base; third, by the link between tax base and other tax bases (deduction of the tax base, or the tax, respectively, from other taxes may facilitate reporting), and fourth, by the system of reporting and control.

The measurement of compliance costs causes several methodological issues, which are important for the comparison of the results obtained:

- Definition of the compliance costs (costs of accounting for SMEs).
- Types of costs (cash flow, psychological costs and utilities are usually excluded).
- Coverage (majority of studies measure CC for one tax; low revenue taxes are not subject to analysis).
- Overestimation or underestimation of compliance costs by respondents.
- Collection of data via questionnaires, or through interviews conducted with respondents, or methods of expert estimation (e.g. standard cost model SCM – see ISCMN, 2005).
- Representativeness and return rate of responses.
- Time valuation.

The studies of compliance costs usually include the data collected from the responses to the questions regarding the volume of time spent processing tax agenda according to the type of tax or type of activity, accounting procedures and their time demand, access to and use of internet and electronic agenda associated with taxes, demanding nature and frequency of tax audits, tax morals, quality of tax administration and sometimes also the issues associated with the tax optimization and planning. Since the survey is usually conducted in business entities, the questionnaires are distributed to a group determined by stratified random selection from the database of active entrepreneurs. The return rate is rather low and usually does not exceed 10%.

Micro data for Czech Republic and Croatia has been based on interviews with self-employed persons and management specialists in the firms. Slovak and mostly also Slovenian micro data has been based on line questionnaires. For described research has been also used data from the tax databases of the national tax agencies. Macro data for the tax revenues comes from Eurostat database. In the econometric part of the paper a standard methods of econometric analysis are used.

3. Results

The share of taxes to GDP in selected countries is lower than the EU28 average. The Slovak Republic has the lowest overall tax burden, Czech Republic and Croatia are similar and below EU average. The longer-term declining trend in taxation can be seen in Croatia and in particular in Slovakia.

Table 1. Tax to GDP Ratios in Selected Countries and EU28 (% of GDP)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28</td>
<td>40.0</td>
<td>39.8</td>
<td>40.6</td>
<td>40.3</td>
<td>39.6</td>
<td>40.8</td>
</tr>
<tr>
<td>CZ</td>
<td>34.6</td>
<td>35.9</td>
<td>35.4</td>
<td>34.5</td>
<td>33.6</td>
<td>35.0</td>
</tr>
<tr>
<td>HR</td>
<td>37.9</td>
<td>36.7</td>
<td>37.1</td>
<td>37.1</td>
<td>36.4</td>
<td>35.7</td>
</tr>
<tr>
<td>SI</td>
<td>38.1</td>
<td>38.4</td>
<td>38.5</td>
<td>37.5</td>
<td>38.0</td>
<td>37.9</td>
</tr>
<tr>
<td>SK</td>
<td>33.1</td>
<td>31.7</td>
<td>29.4</td>
<td>29.2</td>
<td>28.3</td>
<td>28.5</td>
</tr>
</tbody>
</table>


In advanced and in the monitored countries, the system of public income is based on four key sources: personal income taxes, corporate taxes, social security contributions and VAT. The yield produces approximately 85% of all
tax revenues of governments, and tends to grow over time. Social security contributions dominate (45% of the total tax revenue), followed by VAT.

Table 2. Tax mix in selected countries and EU28 (% of GDP)

<table>
<thead>
<tr>
<th></th>
<th>EU28</th>
<th>CZ</th>
<th>HR</th>
<th>SI</th>
<th>SK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxes on production and import</td>
<td>13.6</td>
<td>12.3</td>
<td>18.2</td>
<td>14.6</td>
<td>10.2</td>
</tr>
<tr>
<td>Current taxes on income, wealth</td>
<td>12.9</td>
<td>7.2</td>
<td>6.1</td>
<td>7.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Capital taxes</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Actual social contributions</td>
<td>13.0</td>
<td>15.6</td>
<td>11.5</td>
<td>15.2</td>
<td>12.6</td>
</tr>
</tbody>
</table>


Out of all post-transitional EU countries, the CC have been analyzed only in several countries: in the CR, the results of smaller groups of entities are showed in Pudil et al. (2004), Vítek and Pavel (2008) and Pavel and Vítek (2010) in respect of ecological taxes. Čižmárik (2013) has estimated results for compliance costs for corporate tax, VAT and income from employment and social security contributions. The results for Slovenia are summarized in Klun (2003, 2004 and 2009) and Klun and Blazic (2005) for VAT and personal income tax for non-entrepreneurs. The results for Croatia were shown by Blazic (2004 and 2004a) for SME’s for personal income tax from business income, VAT and tax on employment and social security contributions. The results these studies are summarized in the following table.

Table 3. Compliance costs in selected countries (CZ, SK, SI and HR): survey of results

<table>
<thead>
<tr>
<th>Study</th>
<th>Country, year</th>
<th>Results</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Čižmárik (2013)</td>
<td>SK (2011; % of revenues)</td>
<td>IncT: 73.4, VAT: 12.3, SSC (H+P): 9.2</td>
<td>on line questionnaires 100 self-employed and firms</td>
</tr>
<tr>
<td>Klun (2003)</td>
<td>SI (2000, % of revenues)</td>
<td>VAT: 25 / 17.1 (according to time valuation)</td>
<td>82 questionnaires 21 ex post interviews</td>
</tr>
<tr>
<td>Blazic (2004)</td>
<td>HR (2001; % of revenues)</td>
<td>PIT: 0.8</td>
<td>300 interviews without self-employed persons</td>
</tr>
<tr>
<td>Blazic (2004a)</td>
<td>HR (2001; % of revenues)</td>
<td>PIT: 31.4, PIT-EE + SSC: 21.9, VAT: 31.0</td>
<td>257 interviews without self-employed persons</td>
</tr>
</tbody>
</table>

CIT = corporate income tax, VAT = value added tax, PIT-EE = personal income tax on employees, PIT-SELF = personal income tax on self-employed, CT = tax on cars (CZ: road tax), PT = property tax, SSC-H = health social security contributions, SSC-P, social security contributions on pensions etc., IncT = PIT + CIT;
3.1. Factors affecting the size of the compliance costs: the Czech Republic case

Both measurements in the Czech Republic (2003 and 2007) were based on a similar approach; however, the individual assumptions were slightly different. In both cases, the determination of compliance costs was divided to entrepreneurs-natural entities and to legal entities. The costs associated with bookkeeping were not included in the bookkeeping natural entities, and in entities obliged to keep tax records the costs thereof were included in various ranges because small businesses often declared (approx. 75% of them) that they keep the books or tax records just because of tax liabilities. The results do not include any cash-flow utilities, costs and utilities, psychological costs and management utilities.

The basic selection criteria of the quota selection group was the size of the entity, which is subject to income tax imposed on businesses and has no income as an employee. The selection quota set contained 100 + 100 entities. The data was ascertained through the interviews conducted with the entities in the group. The data on the size structure of the payers’ population under each tax was retrieved from the MF database. Upon completion of the data collection from the individual respondents, the compliance costs of the sample were weighed according to the size structure of the entire population of tax payers/tax obligors. The compliance costs were then recalculated to nationwide absolute values and compared with the collection of the respective taxes for 2007, or 2003, respectively. Evaluation by means of gross wages (CZK 176/hour in 207) was applied in order to evaluate time. Non-profit entities and persons who did not state net turnover (approx. 50 thousand entities out of 330 thousand) were excluded under taxation of legal entities. Costs of accounting were not considered either. Tax turnover was calculated for VAT purposes in the same manner as in natural entities.

The results ascertained are similar in both measurements, except for the income tax of natural entities. Data on the payment of statutory insurance was not available in the first measurement procedure.

The data obtained in the Czech Republic via questionnaire survey in 2008 may be applied in order to estimate the total size of the compliance costs and to identify the factors which affect their size on the level of individual taxpayers. Therefore, two regression models were put together, whereas the first regression model applied the data obtained from natural entities and the other one processed the data obtained from legal entities. As explanatory variables, the authors selected the value of relative compliance costs, which were calculated in natural entities as a share of the compliance costs in the tax base, and in the case of legal entities as a share of the compliance costs in the company’s turnover.

The following explanatory variables were applied:
- Taxpayers turnover (turnover).
- Relative CC to turnover of taxpayer – natural entities (relCC(N))
- Relative CC to turnover of taxpayer – legal entities (relCC(L))
- Indicator (share) showing which part of the compliance costs is formed by external service payments.
- Complexity of tax system perceived by tax payer – scale 1–5 (diff).
- Approach of tax administrators to clients perceived by tax payer – scale 1–5 (exam1).
- Professional capacity of tax administrators perceived by tax payer – scale 1–5 (val2).
- In natural entities: number of taxes (num) the given payer was registered for.
- In legal entities: type of legal form – two artificial variables applied (sro).

The construction of the regression models and completed tests relating to the assumptions of the method of least squares were performed upon the findings and recommendations presented in Gujarati (1995) and Wooldridge (2009). Logarithmic log model was applied.

The following formulas show the results of the regression models in both natural and legal entities. Since heteroscedasticity of the data was identified, the estimation was made by means of the HC method (heteroscedasticity correction). The models presented herein show relatively high values of coefficients of determination, specifically in legal entities.
Natural entities
\[ \text{relCC}(N) = 7.4816 - 2.0750 \times \log(\text{turnover}) + 0.1251 \times \log(\text{turnover})^2 + 0.1981 \times \log(\text{share}) + 0.6971 \times \log(\text{num}) \]

Legal entities
\[ \text{relCC}(L) = 10.2909 - 2.1371 \times \log(\text{turnover}) + 0.0822 \times \log(\text{turnover})^2 + 0.2019 \times \log(\text{share}) + 0.3418 \times \log(\text{diff}) - 0.7097 \times \log(\text{exam1}) + 0.2025 \times \text{sro} \]

All coefficients are statistically significant at least at the 1% significance level. R2 for natural persons is 0.54 and for legal entities 0.88.

Both models confirmed the regressive nature of the compliance costs, which means that relative compliance costs tend to be higher in earnings or tax base of smaller tax payers. However, this relationship is not linear but polynomial, which is reflected in statistical significance of the coefficient in the log square (turnover) variable. Therefore, the decline of the relative value of the compliance costs slows down gradually in larger tax payers.

Statistical significance is also showed in the regression coefficient in both types of tax payers in the case of the share of payments made to external entities. In both models, the value of the regression coefficient is ±0.2, which means that the increase of this share by one per cent increases the compliance costs by 0.2%. Therefore, hiring external entities is more expensive than providing for such activities through in-house staff.

Other variables are statistically significant only in one type of tax payers. In natural entities, the value of relative compliance costs grows along with increase of the number of taxes which the payer is registered for; this is quite logical as the number of acts (tax returns, reports, etc.) to be made by the tax payer throughout the year is also increasing.

The model shows some interesting results in legal entities. The entities, which perceive the tax system as complex, show in average higher relative compliance costs than those who perceive it as simple. An opposite relationship was identified in the evaluation of the tax administrators’ attitude. The companies which are less satisfied with the tax administrators’ approach show lower relative compliance costs. The final statistically significant variable is the coefficient in binary variable sro, which means that limited liability companies show in average higher relative compliance costs than other legal forms.

4. Conclusions

Comparison of the compliance costs of taxation in the Czech Republic, Slovakia, Slovenia and Croatia shows that they are relatively high for taxation through personal income taxes. Conversely, taxes with high revenues show relatively lower ratio of compliance costs to tax revenues. Compliance costs are regressive in all compared studies and therefore more heavily for small taxpayers. In compared studies, there are significant differences in the methodology, coverage and time valuation and therefore the results are hardly comparable.

In addition to the issue discussed above regarding the overly high values of the compliance costs associated with certain types of taxes, it is necessary to consider the uneven impact on individual tax payers when constructing a tax system.

The regression models presented herein clearly confirm regressive impacts of the compliance costs, as well as higher cost burden associated with the necessity to purchase services related to correct fulfillment of tax liabilities from external entities. It may be assumed that the need to purchase such services would be directly proportional to the complexity of tax system. Therefore, tax policies should consider mainly the options of facilitating the tax administration in the field of income tax paid by natural entities – entrepreneurs where the values of the compliance costs were on the highest level. It would be also suitable in both natural and legal entities to consider the option of a simplified documentation of tax liabilities in small businesses in order to suppress the regressive nature of the system, at least in part.

The compliance costs may be restricted the most in the areas where they affect a great number of tax entities. Therefore, as per cutting the compliance costs, the introduction of integrated systems of tax and insurance collections is definitely the right direction to go as they would have a positive impact on millions of tax payers` operations in each country each year. In this case, gross estimates of the compliance costs’ savings range
approximately around CZK 1 billion/year in the Czech Republic alone.

High compliance costs associated with the so-called “small” taxes do not necessarily mean that the procedure of payment of these taxes is overly complex. The legislator should consider whether or not the revenue is actually proportionate to the costs spent by the government and the tax payers to the tax collection. If the revenue from these taxes (or fees) is too low and the costs too high, it is necessary either to increase the revenue or to abolish the tax and replace it by different tax or fee instruments.

Acknowledgements

This article has been elaborated as one of the outcomes of research project F1/2/2013 “Veřejné finance ve vyspělých zemích” (“The Public Finances in Developed Countries”) and institutional support IP 100040.

References


