

Can the efficiency of the Croatian tax authorities be improved?

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Article**

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Abstract

The goals of this article were to determine whether the efficiency of tax authorities in Croatia improved over the period 1997-2012 and to identify how their efficiency can be improved in the future. According to our research the administrative costs of taxation in Croatia, as a percentage of GDP, decreased slightly over the past fifteen years but still remain above the EU average. Thus, there is a need to reduce the administrative costs of taxation, first by identifying and abolishing nuisance taxes that raise very little revenue and have high administrative costs. Second, special attention should be devoted to analysing and reducing the service expenses of tax authorities (especially IT expenses and expenses for telephone, mail and transportation services). The main problem related to research into administrative costs in Croatia over a longer period is the lack of relevant and reliable data, and hence the Croatian tax authorities should collect more data and release them to the public.

Keywords: administrative costs, taxation, Croatia

1 INTRODUCTION AND LITERATURE REVIEW

The process of collecting taxes is far from cost-free. Indeed, the process involves certain costs that the literature typically divides into administrative costs (ACs) and compliance costs (CCs) (see, for example, Sandford, Godwin and Hardwick, 1989). This paper focuses on ACs, which include public-sector costs related to the enforcement (administration) of existing tax legislation, including proposals for changes to that legislation that are proposed by the relevant public revenue collection authorities (for additional information, see Sandford, 1995; Sandford et al., 1995; and Sandford, Godwin and Hardwick, 1989:3). A practical definition of ACs is also provided in Allers (1994:33), who describes ACs as public-sector costs that either would not exist in the absence of a tax or would disappear if a particular tax were abolished.

There has been widespread research into this topic worldwide.¹ Based on an analysis of 60 studies on ACs and CCs since 1980, Evans (2003) concludes that in countries where ACs have been explored, the costs rarely exceed 1% of the tax revenues that are collected by the administration; further, ACs impose a smaller burden (in both absolute and relative terms) than do CCs (for additional details, see Evans, 2003:72). The most prominent organisation that explores ACs is the Organisation for Economic Co-operation and Development (OECD), which has released five publications with internationally comparable data on the tax systems and tax administrations of 52 countries (i.e., all of the OECD, EU and G20 countries) (OECD, 2004; 2006; 2009; 2011 and 2013). According to the most recent OECD publication (2013), there are stark differences in AC-to-GDP ratios among the observed countries during the period 2004-2011; however, in one-third of

¹ For example, see Sandford, Godwin and Hardwick (1989); Sandford et al. (1995); Evans, Pope and Hasseldine (2001); Lignier and Evans (2012); and OECD (2004, 2006, 2009, 2011, 2013).

those countries, the ratio ranged between 0.15% and 0.25%. A relatively low share of ACs in GDP (below 0.12%) is primarily observed in countries with low tax burdens and those where major taxes are not always administered by the national government (e.g., Chile, Estonia, Mexico and the USA). A continuous downward trend in this ratio is observed in a small number of countries, including Australia, Denmark, France, Lithuania, Malaysia, Mexico, the Netherlands, Norway, Russia and the UK, but no explanation is offered as to the cause of this phenomenon.

In Croatia, the issue of ACs was first explored by Ott and Bajo (2000), who found that in the five-year period between 1995 and 1999, ACs accounted for approximately 0.55% of GDP; given their size, these costs left substantial room for savings. The authors emphasised the importance of determining the ACs for each type of tax; however, they argued that this determination was impossible because there was no record of ACs by type of tax, and the allocation of overhead (general costs) to individual tax types posed a particular problem. Bratić and Pitarević (2004) found that ACs continued to account for an average of 0.55% of GDP during the period 1997-2001, but the accuracy and relevance of the data (which were difficult to access) pose a serious challenge for research.² Blažić (2004) demonstrated that the total taxation costs in Croatia accounted for 3.13% of GDP from June 2001 to June 2002, of which ACs and CCs accounted for 0.47% and 2.66% of GDP, respectively. More recently, Bratić and Šimović (2010) analysed the cost efficiency of tax authorities in Croatia during the period 2000-2007 in comparison with OECD member countries. They concluded that the Croatian Tax Administration (TA), Customs Administration (CA) and Financial Police (FP) have the worst cost efficiency.

The goals of this article were to determine whether the efficiency of tax authorities in Croatia improved over the period 1997-2012 and to identify how their efficiency can be improved in the future. We argue, however, that a primary problem is a lack of information relevant to the examination of ACs in Croatia over a longer period of time. As a percentage of GDP, the total ACs of taxation in Croatia have fallen slightly over the past fifteen years but remain above the average for EU member states. The OECD (2013:178) indicates that the efficiency/effectiveness of tax authorities is typically assessed as the “cost-to-collection” ratio (calculated as the percentage share of ACs in the revenues that are collected by a country’s tax administration). Assuming other variables remain constant, a decline in this indicator over time suggests a fall in relative costs (i.e., an efficiency improvement) and/or a rise in collected revenues (i.e., an effectiveness improvement). However, according to the OECD (2013), this indicator should be interpreted with caution, as several factors that are unconnected with tax authorities’ efficiency/effectiveness can affect it. Other authors also emphasise the need for caution in cross-country comparisons of ACs using the “cost-to-collection” ratio (see Sand-

² Researchers in other transitional countries have also faced both data unavailability and poor data quality when conducting their analyses. For example, in exploring ACs in the Czech Republic, Vitek and Pubal (2002) argue that data are only available at the aggregate level, which is often inadequate for calculating ACs and CCs for particular types of taxes.

ford, 1995:405; Sandford, 2000 and Evans, 2006). For example, Sandford (2000:119-123) notes that cross-country comparisons based on the “cost-to-collection” ratio are difficult for the following reasons:

- Data collection does not typically employ a standardised methodology in the different countries, as there are differences in how ACs are defined and in the types of revenues that are collected by tax authorities; for example, certain tax authorities collect social contributions and customs duties, whereas others do not.
- A country’s demographic, political, social, economic and legal circumstances can have a strong influence on the “cost-to-collection” ratio because of the following:
 - differences in the tax structure (e.g., the value added tax (VAT) registration threshold is low in some countries but high in others, and collecting taxes from a large number of small taxpayers results in high ACs);
 - differences in the taxpayer structure (e.g., the larger the number of self-employed taxpayers, the higher the ACs);
 - differences in tax rates (e.g., countries with large total tax revenues as a percentage of GDP have heavy tax burdens and are associated with lower “cost-to-collection” ratios than countries with similar taxes but lower tax burdens);
 - changes in revenues that are not associated with changes in tax rates (e.g., unusual economic growth rates or inflation); and
 - several other factors that can influence the ratio, such as the introduction of new taxes.

Both Sandford (2000:123) and the OECD (2013) point out that the potential maximum tax revenues that can be collected by tax authorities are an extremely important factor, especially in international comparisons. Thus, countries with similar “cost-to-collection” ratios can be completely different with respect to efficiency, which is measured as the ratio between collected and potential maximum tax revenues.

The OECD (2013:179-182) notes that the ratio between costs and GDP (calculated as the percentage share of ACs in GDP) might be more appropriate for international comparisons. However, this indicator should also be employed with caution, as several factors that are unrelated to tax authorities’ efficiency can influence the ratio between costs and GDP (e.g., large investments in new technologies, costs arising from a new tax or frequent GDP revisions).

Despite all these deficiencies, ACs are calculated and compared to establish differences among countries. These differences, to the extent that they can be associated with the efficiency of tax administrations, are then analysed and explored for each individual country (Sandford, 2000:137). Therefore, we explain the research methodology for ACs in Croatia, and then we compare ACs between Croatia and the EU. Finally, we present conclusions on how to improve the efficiency of the Croatian tax authorities.

2 METHODOLOGY AND DATA

As noted above, ACs in Croatia include the costs of three institutions that are responsible for collecting taxes and customs duties: the TA, CA and FP.³ ACs are primarily financed from the state budget and, to a lesser extent, from these three institutions' own revenues. Ott and Bajo (2000) note that for a more complete analysis of Croatia's ACs, the total ACs should also include the costs of the institution that actually collects and maintains records of tax and customs duties; before 2001, this institution was the Payment Operations Institute, and since 2002, the institution has been the Financial Agency (FINA). Ott and Bajo (2000) also suggest including the costs of the courts that decide tax and customs cases in the analysis.⁴

Regrettably, data on the costs of FINA and the courts could not be obtained, as they are not publicly available. A request for access to the information filed with the Ministry of Justice and FINA was unsuccessful because (1) they responded that they were not in possession of the requested data; or (2) they promised to submit the data at a later date (but never did). According to FINA reports, its Treasury System Support Centre performs certain activities on behalf of the TA on a contract basis, but the centre invoices the Ministry of Finance (MF) instead of the TA⁵ for those services. Therefore, the services that FINA provides on behalf of the TA and the costs of these services should be further investigated, as they are not produced by the TA but should be included in the ACs. However, these costs are currently reported within the MF's budget and are not clearly separated from other costs.

Sandford (2000:117) and Evans (2006:2-3) detail additional costs that should be included in the ACs, such as parliamentary costs related to the enactment of tax legislation. Although the costs mentioned by Sandford and Evans are not addressed in this research, future explorations of these costs in the Croatian context would be useful.

³ The FP existed from 28 December 1992 to 31 December 2001 before being abolished. The FP did not operate from 1 January 2002 to 31 December 2005, and the Agency was reinstated from 1 January 2006 to 6 March 2012 before being abolished again. The work of the FP was regulated by the Financial Police Law (in Croatian *Zakon o financijskoj policiji*). According to that Law (NN 177/04, 55/11 and 25/12), the FP performed financial monitoring of the legality, regularity and timeliness of accounting, registration and payment of budget revenues and fees prescribed by particular laws (especially those regarding excise taxes, social security contributions, concession and lease agreements).

According to the Customs Service Act (in Croatian *Zakon o carinskoj službi*, until 2001 NN 53/91 and 106/93, in the period from 2001 to 2009 NN 67/01, in the period from 2009 to 2013 NN 83/09, 49/11 and 34/12, and from 2013 NN 68/13 and 30/14) the most important tasks of the CA is that it is responsible for the assessment and collection of customs duties, VAT and other mandatory public charges at the import and export of goods and implements customs control measures, including verifying the facts relevant to the taxation or customs clearance of goods.

⁴ The costs of courts imply the costs of administrative courts that are the first to adjudicate individual tax and customs disputes (in Zagreb, Split, Rijeka and Osijek) and the costs of the High Administrative Court in Zagreb, which is the second to adjudicate these disputes (on appeals of first-instance decisions). The General Tax Act prescribes legal remedies in tax proceedings (Articles 159 through 171 of the *Opći porezni zakon*, NN 147/08, 18/11, 78/12, 136/12 and 73/13).

⁵ FINA performs the following revenue-related activities, the analytical records of which are maintained by the TA: (1) supporting the system of recording and assigning public revenues, and (2) conducting other activities on behalf of the TA, such as assessment activities, recording, supervision, collection and enforcement of certain local revenues on behalf of the local government units (for additional information, see FINA, 2012).

This article uses reports from the MF, TA and CA.⁶ According to the economic classification followed in Croatia's state budget, ACs include operational costs/expenses (e.g., for employees, spent materials and IT services) and costs/expenses for the procurement of capital assets (e.g., buildings and office equipment). However, these reports are often inadequate to perform the necessary analyses. Thus, determining the ACs for each tax is impossible because the costs are not monitored according to the type of tax. Moreover, it would be interesting to determine the specific amounts of tax revenues collected by the TA and the CA, but this was impossible in this study because we lacked data on the amount of the VAT on imports that is collected by the CA.

Nonetheless, this is the first study on Croatia in which the collection costs of social contributions are included in the ACs for 2001 and 2002. Until 2001, social contributions were collected by separate institutions (i.e., the Croatian Pension Insurance Institute, the Croatian Health Insurance Institute and the Croatian Employment Service), which had the status of extra-budgetary funds. The costs of these institutions (and revenues from social contributions) were not reported in the state budget. Researchers have been unable to include the costs that are generated by these institutions in the ACs, as the available data did not clearly indicate what share of these costs are related to the collection of social contributions versus the payment of various benefits (e.g., pensions, sickness benefits and health protection). Thus, previous studies did not include the costs of these institutions in the total ACs, and for the same reason, the revenues from social contributions collected were not included in the total revenues that are collected by tax authorities.⁷

Although the TA performed certain activities related to social contributions⁸ even before 2001, in July 2001, the TA became responsible for all of Croatia's operations related to social contributions, including the assessment, record-keeping, collection, supervision and enforcement of contributions, as well as the management of misdemeanour proceedings (*Zakon o Poreznoj upravi*, NN 67/01). Consequently, the TA budget (and thus the ACs) has included costs related to pension-insurance contributions since 1 July 2001 and unemployment and health insurance contributions since 1 January 2002. Moreover, at the same time, revenues from social contributions are included in the total revenues that are collected by tax authorities.

⁶ This article considers Annual reports on the execution of the state budget of the Republic of Croatia for the period 2000-2012 (Ministry of Finance, 2000-2012); information on TA expenditures in relation to the financial plan for the period 1995-2006 (Tax Administration, 1995-2006); the Revenue and expenditure statements, receipts and outlays of the TA for the period 2002-2012 (Tax Administration, 2002-2012); Reports on the number of employees, total annual revenues and total annual costs of the CA for the period 1997-2012 (Customs Administration, 1997-2012); and the Revenue and expenditure statements, receipts and outlays of the CA for the period 2005-2012 (Customs Administration, 2005-2012). These sources are not always reliable, i.e., the numbers for the same types of data occasionally differed across different reports, especially for the period before 2004, and hence the authors were forced to choose which numbers to include in the analysis.

⁷ However, because of the inclusion of costs related to social contributions in our study, the total ACs during the periods before and after 2001/2002 are not fully comparable.

⁸ One example is the supervision of the correctness and timeliness of the calculation and payment of contributions (see the *Opći porezni zakon*, NN 71/99).

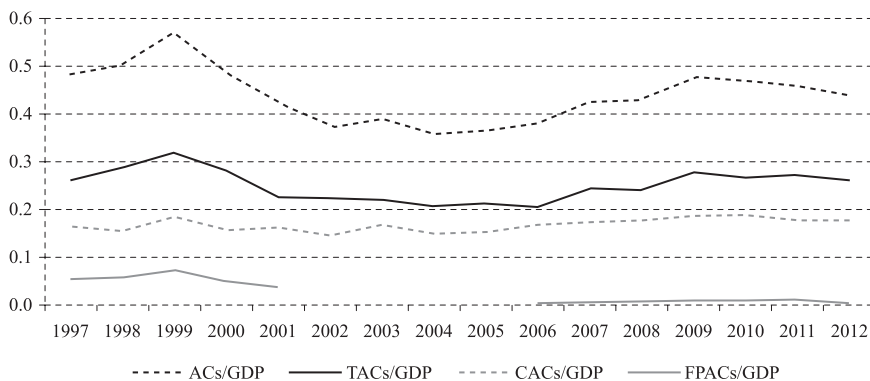
The analysis of key indicators of the Croatian tax authorities' (in)efficiency compared to the average indicators for EU member states is presented below. Then, we suggest costs that the Croatian tax authorities could reduce.

3 ANALYSIS OF ADMINISTRATIVE COSTS IN CROATIA IN THE PERIOD 1997-2012

As depicted in figure 1, the total ACs in Croatia declined by approximately 10% in 2012 from 1997 (from 0.48% to 0.44% of GDP). The largest AC-to-GDP ratio was recorded in 1999 (0.58%).

FIGURE 1

ACs in Croatia, as a percentage of GDP, 1997-2012



TACs: Tax Administration costs; CACs: Customs Administration costs; FPACs: Financial Police Administration costs.

Source: Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

The sharpest declines in ACs were observed in 2000 and 2001, when a rise in GDP coincided with a decline in ACs in absolute terms. From 2005 to 2010, the AC-to-GDP ratio again increased but fell slightly after 2010 as the economic situation in Croatia deteriorated. As a result, in 2012, Croatia spent 0.44% of its GDP on administering tax and customs legislation. To establish whether the total ACs in Croatia are high, we compare them with the EU average, despite all of the constraints and deficiencies (i.e., differences in methodology).

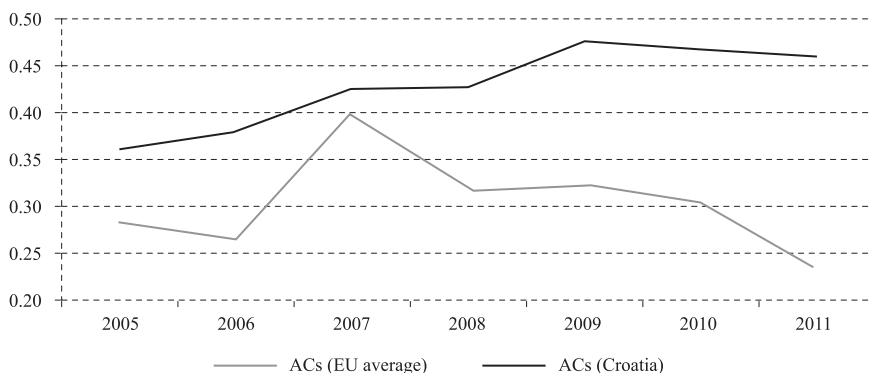
As plotted in figure 2, Croatia's ACs exceeded the EU average⁹ in the period 2005-2011. Annex 1 features ACs as percentages of GDP for individual EU member states in the period 2005-2012. The AC data for the period before 2005 were not available for all EU member states, and the available data for the period after 2005 do not clearly detail the actual composition of ACs for each country. Interestingly, in 2007, Croatia's ACs were near the EU average, but they increased after 2007

⁹ Note that the number of EU member states changed during that period, as Bulgaria and Romania joined the EU in 2007.

(to 0.46% of GDP in 2011), while the EU's average ACs fell markedly (to 0.23% of GDP in 2011).

FIGURE 2

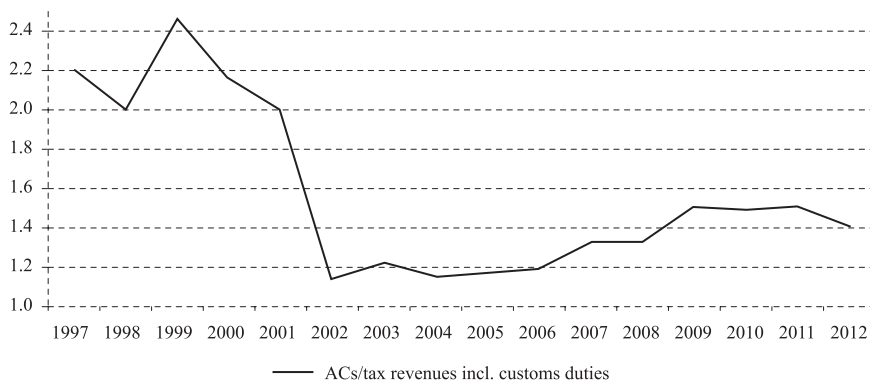
A comparison of ACs between Croatia and the EU, as a percentage of GDP, 2005-2011



Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

FIGURE 3

*ACs in Croatia as percentage of collected tax revenues, 1997-2012**



* For the purposes of this analysis, "collected tax revenues" are the tax revenues of the state budget.

Sources: Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

The percentage share of ACs in Croatia's total tax and customs revenues declined sharply in 2001 and 2002 (from 2.16% in 2000 to 1.14% in 2002, see figure 3).¹⁰

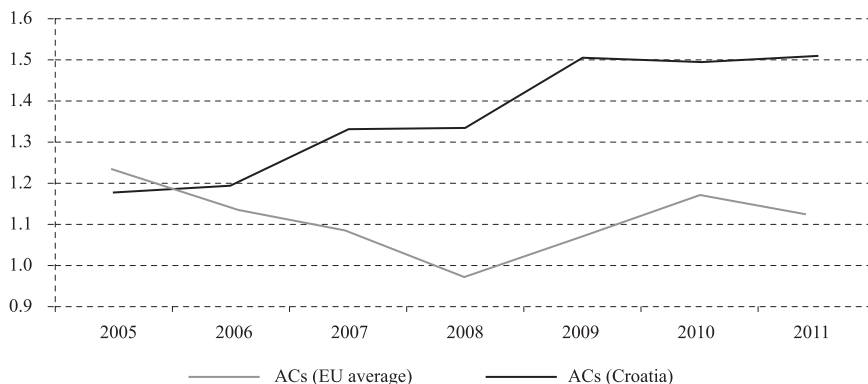
¹⁰ State budget non-tax revenues (such as property income, various administrative fees, and penalties) are not included into revenues collected by TA, CA and FP because we did not have information how much TA, CA and FP participate in administration of these revenues. This should be investigated in future studies. Additionally, because the TA collects taxes on behalf of some local government units, charging a fee in the amount of 5% of collected tax revenues, we wish to know the number of local government units for which the TA collects taxes in order to find out how much of these taxes should be included into revenues collected by TA. However, the TA has not responded to this inquiry, and this also remains to be investigated in future.

Specifically, the cost of collecting 100 kuna in tax and customs revenues in 2002 was 1.14 kuna. The most important cause of the declines in ACs as percentage of collected revenues in 2001 and 2002 was the previously explained inclusion of social contributions in collected tax revenues. Social contributions constitute the second most abundant source of tax revenues after VAT. In the period 2000-2012, social contributions accounted for approximately 34% of total tax revenues at the general government level (see annex 2). Additionally, GDP increased during this period, ACs decreased in absolute terms and the FP was abolished. After 2002, ACs increased slightly, reaching 1.4% of collected tax revenues in 2012.

From the previous figures, it is possible to conclude that ACs in Croatia should be reviewed and if possible reduced. Thus, first, there is a need to identify and review “nuisance” taxes that raise very little revenue (and may have high administrative and compliance costs as in other countries (see Chittenden, Foster, and Sloan, 2010:159)). It might be more effective if some of these “nuisance” taxes were entirely eliminated. Although there is a need for detailed analysis, at first glance it appears that in Croatia some of following taxes might be strong candidates for “nuisance” taxes: certain property taxes (e.g., the public land use tax or second home tax), consumption taxes, excluding the VAT and excise taxes (e.g., trading name tax), and/or certain other small taxes (see annex 2). In other words, the “nuisance” taxes should be first step of an investigation of ACs. Figure 4 compares Croatian ACs as percentage of collected revenues with the EU average.

FIGURE 4

ACs in Croatia and the EU, as a percentage of collected revenues, 2005-2011

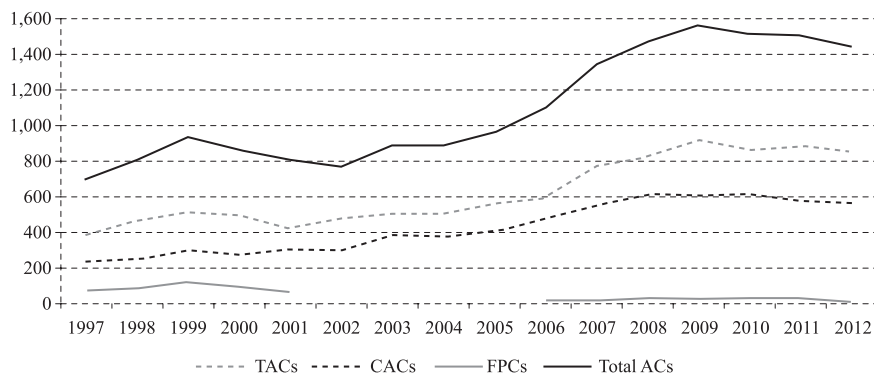


Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

In 2005, ACs in Croatia accounted for approximately 1.2% of collected revenues, which was nearly equal to the EU average. However, a reversal of this trend occurred after 2005, when ACs in Croatia steadily increased to approximately 1.5% of collected revenues in 2011. Moreover, the average EU ACs decreased to 1.1%

of collected revenues in 2011. Thus why the Croatian tax authorities appear to be inefficient relative to the EU average remains an open question, and hence we examine the structure of ACs in Croatia in greater detail below.

FIGURE 5
ACs by institution, in million kuna, 1997-2012



TACs: Tax Administration costs; CACs: Customs Administration costs; FPACs: Financial Police Administration costs.

Sources: Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

From 1997 to 2012, total ACs more than doubled in absolute terms (from approximately 700 million kuna to slightly more than 1.4 billion kuna). From 1997 to 2009, TACs and CACs generally increased in absolute terms, with the exception of the years 2000, 2001 and 2002. TACs and CACs declined slightly after 2009 (figure 5). In the period 2004-2012, total ACs rose by approximately 60% (from 886 million kuna to approximately 1.4 billion kuna). For the entire period 1997-2012, TACs accounted for 50-60% of the total ACs, while the remaining ACs were primarily CACs (while the Financial Police Administration's costs (FPACs) were almost negligible).

An analysis of financial statements for the period 2004-2012 reveals that the largest expenses were recorded for staff and service expenses and accounted for the bulk of the total ACs (approximately 90% – table 1).

As table 2 indicates, staff and service expenses increased steadily over the observed period (staff expenses increased by 46%, from 631 million kuna to 921 million kuna, and service expenses increased by more than 330%, from 96 million kuna to 420 million kuna). Therefore, a detailed analysis of staff and service expenses is presented below.

For the EU countries, only data on salary expenses were available. According to the available data, in the period 2005-2011, the share of salary expenses in ACs in

Croatia¹¹ was below the average of the EU member states. In the period 2005-2011, the EU average was approximately 70% of the total ACs. In a review of previous studies, Sandford (2000:118) reports that staff expenses represent the largest costs and typically account for approximately three-quarters of the total ACs.

TABLE 1

*ACs as a percentage of total administrative costs, 2004-2012.**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average 2004-12
Staff expenses	80	72	74	67	66	63	64	64	64	68
Material and energy expenses	4	5	5	4	4	4	4	4	4	4
Service expenses	12	18	16	23	25	29	27	27	29	23
Other current expenses	0	1	0	1	0	0	0	0	0	0
Capital expenses	3	5	5	6	5	5	5	5	3	5
Total ACs	100	100	100	100	100	100	100	100	100	–

* Only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

Source: Ministry of Finance (2000-2012).

TABLE 2

*ACs, in million kuna, 2004-2012**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012/2004 (change in %)
Staff expenses	631	668	775	898	971	975	971	966	921	46
Material and energy expenses	36	43	48	51	55	56	57	54	57	60
Service expenses	96	165	167	316	369	446	410	409	420	336
Other current expenses	3	5	4	7	6	4	5	4	4	14
Capital expenses	26	43	55	78	70	78	73	75	38	42
Total AC	793	924	1,049	1,351	1,472	1,560	1,516	1,508	1,439	–

* Only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

Source: Ministry of Finance (2000-2012).

From table 3, it is clear that particular attention should be devoted to analysing IT services expenses, as they increased from approximately 3% to 51% of total service expenses in the period from 2004 to 2012. It is interesting that these IT services expenses are only related to maintenance and support for existing software and not to purchasing new software/hardware.

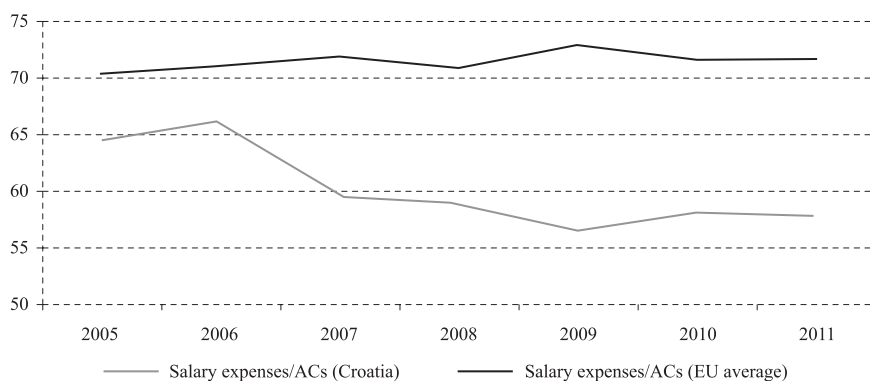
As shown in table 4, of service expenses, expenses for IT services grew the most rapidly (by more than 7,000%, from approximately 3 million kuna to 214 million

¹¹ Salary expenses in Croatia only include salaries and social security contributions. Other staff expenses are not included (e.g., fieldwork and separation allowances).

kuna). Leasing and rental expenses also increased sharply (by more than 300%, from 7 million kuna to 30 million kuna), as did intellectual and personal-service expenses (by approximately 800%, from 2 million kuna to 21 million kuna). Expenses for telephone, mail and transportation services were also high in absolute terms during the observed period, as they constituted an average of approximately 90 million kuna annually. Consequently, both the TA and CA should analyse the mentioned expenses in detail and examine whether and to what extent these expenses should be reduced.

FIGURE 6

*Salary expenses in Croatia and the EU, percentage of ACs, 1997-2011**



* For Croatia, only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

TABLE 3

*Service expenses, 2004-2012, as a percentage of total service expenses**

Expenses	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average 2004-12
Telephone, mail and transportation services	50	61	46	27	25	27	24	21	18	33
Current and investment maintenance services	11	8	13	9	8	7	11	3	7	9
Utility services	16	13	12	7	7	6	7	2	2	8
Leases and rentals	7	6	8	6	5	4	6	7	7	6
Intellectual and personal services	2	2	3	4	7	17	8	4	5	6
IT services	3	3	3	37	40	34	38	52	51	29
Other services	11	8	15	10	7	5	6	11	10	9
Total service expenses	100	100	100	100	100	100	100	100	100	-

* Only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

Source: Ministry of Finance (2000-2012).

TABLE 4

Service expenses, in million kuna, 2004-2012*

Expenses	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012/2004 (change in %)
Telephone, mail and transportation services	48	101	77	85	93	119	100	84	76	57
Current and investment maintenance services	10	13	21	28	31	31	45	13	28	166
Utility services	15	21	21	23	26	28	28	9	9	-44
Leases and rentals	7	9	14	18	19	19	24	29	29	323
Intellectual and personal services	2	3	5	13	26	77	34	17	21	841
IT services	3	5	5	116	149	149	156	214	214	7,455
Other services	10	13	25	33	26	22	24	43	43	326
Total service expenses	96	165	167	316	369	446	410	409	420	-

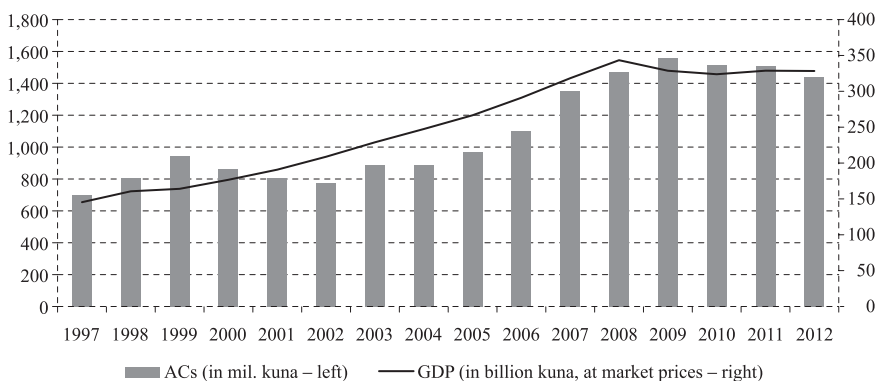
* Only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

Source: Ministry of Finance (2000-2012).

Finally, it would be interesting to examine whether increases/decreases in ACs are related to tax legislation changes in Croatia; one could determine whether the total ACs rose during the years in which the most radical changes in the national tax system occurred. One can assume that every change in tax law leads to a rise in ACs, as there is, for example, a need for new employees to manage a more complex system. Annex 3 reports major changes in the most important types of taxes (the personal income tax, corporate income tax, VAT and social contributions) in Croatia in the period 1997-2012. However, as changes in tax legislation are frequent in Croatia (tax rates and/or tax bases are changed nearly annually), it would be highly difficult to establish any causality between tax legislation changes and changes in total ACs.¹² Thus, the need to collect cost data by type of tax should be strongly emphasised.

FIGURE 7

ACs and GDP developments in Croatia, 1997-2012



Source: Ministry of Finance (2000-2012).

¹² The year 1999 is perhaps an exception, as ACs rose markedly after one of the most radical tax changes (which occurred in 1998) – the introduction of the VAT.

Figure 7 suggests that the increase in ACs in Croatia during the period 2002-2012 could be related to economic growth (GDP movements); the TA, CA and FP simply have higher expenditures during periods of economic growth, whereas they spend less during economic downturns. More analysis is needed to explain this relationship, but the previous tables and figures suggest that one of the reasons is that during the periods of economic growth, in addition to staff expenses, the costs for IT services increased dramatically (costs related to maintenance and support for existing software).

4 CONCLUSIONS

The goals of this article were to determine whether the efficiency of the Croatian tax authorities improved over the period 1997-2012 and to identify how their efficiency can be improved in the future. The key indicator of the analysis (ACs as a percentage of GDP) declined during the observed period but remained above the EU member state average. Therefore, the TA and CA should intensify their efforts to reduce ACs. The tax authorities should seek to collect the maximum revenue at the minimum cost within the existing taxation framework (Sandford, Godwin and Hardwick, 1989:203). The first action that the tax authorities could take is to identify and, if possible, abolish nuisance taxes that raise very little revenue and have high administrative costs. Second, there is a need for a thorough analysis of ACs to establish whether they can be reduced. According to the present analysis, staff expenses, IT expenses and expenses for telephone, mail and transportation services represent the largest expenditure categories. Consequently, both the TA and CA should devote particular attention to analysing these expenses to determine whether and to what extent they can be reduced.

In the period 2002-2012, ACs in Croatia were primarily related to economic growth (GDP movements), as the expenditures of the TA, CA and FP are higher when the economy is strong and lower during economic downturns. During periods of economic growth, in addition to staff expenses, the costs for IT services increased dramatically (costs related to maintenance and support for existing software).

As in previous studies (e.g., Ott and Bajo, 2000; Bratić and Pitarević, 2004; Vitek and Pubal, 2002), this research was constrained by the unavailability of public data. Due to inadequate data, ACs cannot be attributed to individual types of taxes, which is a situation that should be improved in the future. Such information would help the TA and CA to establish which taxes are the most expensive to administer and find appropriate measures, if necessary and/or possible, to reduce the underlying costs. To obtain a better picture of the total cost of collecting taxes and to be able to minimise them, in addition to researching administrative costs, it is also necessary to research the compliance costs of each tax because there is an element of transferability between administrative costs and compliance costs (as the government may assign the responsibilities for and costs of collecting taxes to tax-

payers instead on its own administration). Efforts should also be made to establish the costs that are generated by FINA, the institution that collects and maintains tax records on behalf of the TA and CA, the costs of courts that adjudicate tax and customs cases, and parliamentary costs related to enacting tax legislation.

ACs in EU member states, as a percentage of GDP, 2005-2012

	Administrative costs of tax administration/ gross domestic product, measured as a percentage*							Significant factors affecting cross-country comparisons of ratios
	2005	2006	2007	2008	2009	2010	2011	
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Croatia	0.36	0.38	0.43	0.43	0.48	0.47	0.45	Tax Administration, Customs Administration, Financial Police
Hungary	0.30	0.33	0.40	0.39	0.40	0.42	0.38	
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	0.41	0.36	
Belgium	0.38	0.36	0.34	0.34	0.35	0.33	0.35	
Netherlands	0.42	0.41	0.39	0.35	0.37	0.35	0.33	
Slovenia	n.a.	n.a.	0.26	0.27	0.28	0.29	0.29	
Germany	0.30	0.29	0.28	0.28	0.29	0.29	0.28	
Portugal	0.26	0.25	0.25	0.25	0.27	0.27	0.26	
Poland	0.31	0.29	0.28	0.24	0.23	0.27	0.25	
Cyprus**	n.a.	n.a.	n.a.	0.18	0.19	0.25	0.25	
Ireland	0.24	0.24	0.24	0.27	0.29	0.26	0.25	Costs include customs duties
United Kingdom	n.a.	n.a.	0.34	0.28	0.29	0.27	0.24	
EU average	0.28	0.27	0.40	0.32	0.32	0.31	0.23	
Romania	n.a.	n.a.	0.25	0.23	0.20	0.13	0.23	
France	0.26	0.25	0.24	0.23	0.24	0.23	0.23	
Bulgaria	0.33	0.25	0.21	0.22	0.24	0.24	0.23	
Latvia	n.a.	n.a.	0.35	0.36	0.34	0.29	0.23	
Luxembourg	0.25	0.22	0.22	0.23	0.25	0.23	0.22	
Finland	0.21	0.21	0.20	0.21	0.23	0.21	0.21	
Denmark	0.37	0.30	0.29	0.30	0.31	0.21	0.20	
Czech Republic	0.22	0.22	0.20	0.19	0.20	0.19	0.20	
Slovakia	0.22	0.20	0.17	n.a.	n.a.	0.18	0.18	
Italy**	0.27	0.26	0.29	0.19	0.21	0.19	0.17	Some major costs not included
Sweden	0.19	0.19	0.19	0.18	0.18	0.18	0.17	Costs exclude debt collection
Lithuania	n.a.	n.a.	0.23	0.22	0.21	0.17	0.16	
Austria	n.a.	n.a.	0.15	0.19	0.20	0.16	0.15	
Spain	n.a.	n.a.	0.13	0.13	0.13	0.13	0.13	Costs include customs duties
Estonia	n.a.	n.a.	3.69	1.91	1.86	1.82	0.11	

* GDP at market prices in millions of national currency units.

** Cyprus: The data were revised to correct errors that were detected in the original data. Payments made on behalf of the Inland Revenue Department and VAT by other government departments are not reflected in these specific years.

Italy: Calculations prior to 2009 are based on cost data that were provided for tax-related functions of the revenue body (Agenzia Entrate), tax-related work of the separate tax police body (Guardia di Finanza), and separate tax debt collection functions (Equitalia); data are not provided for subsequent years.

Source: OECD (2013).

ANNEX 2

Total tax revenues of the consolidated general government, in percentages, Croatia, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average 2000-2012
PIT	11.5	9.6	9.5	8.9	9.0	8.5	8.8	9.0	8.9	9.1	8.4	8.5	8.8	9.1
CIT	3.7	4.2	4.9	5.3	5.1	6.1	7.1	8.0	8.8	8.3	5.8	6.7	6.9	6.2
SOC. C	31.2	32.1	33.2	33.7	34.3	34.1	33.7	33.6	33.8	35.2	35.1	35.5	33.8	33.8
Payroll tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Property taxes*	1.2	1.0	0.8	0.7	0.9	0.8	1.0	1.0	1.0	0.9	0.8	0.8	0.7	0.9
VAT	33.6	34.7	34.2	34.8	35.0	35.3	34.7	34.1	34.5	32.8	34.3	34.7	36.3	34.5
Excise taxes	11.8	12.4	13.0	12.9	12.4	11.9	11.5	11.0	9.9	9.7	10.8	10.3	10.0	11.4
Other consumption taxes**	0.5	0.4	1.0	0.9	1.1	1.1	1.4	1.4	1.2	1.2	1.4	1.6	1.6	1.1
Taxes on international trade and transactions	5.8	4.8	2.7	2.2	1.9	1.7	1.6	1.5	1.6	1.5	1.5	1.6	1.6	2.3
Other taxes	0.7	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.3	1.2	2.0	0.3	0.3	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Abbreviations: CIT – corporate income tax; SOC.C – social contributions; PIT – personal income tax; VAT – value added tax.

* Property taxes are: the real property transaction tax, inheritance and gift tax, public land use tax and second home tax.

** Other consumption taxes excluding VAT and excise taxes (e.g., motor vehicle tax, boat tax, slot machine tax, trading name tax, tax on gains from games of chance).

Source: Ministry of Finance (2012); IMF (2014).

Basic changes in personal income tax, corporate income tax, the VAT and social contributions, 1997-2012

	Change	
	Tax bases	Tax rates
1997	<p><i>PIT</i> – the PA increases from 700 to 800 kuna;</p> <p>– tax relief for CDWV is introduced</p>	<p><i>PIT</i> – rates of 25% and 35% are replaced by rates of 20% and 35%</p> <p><i>CIT</i> – the general rate is increased from 25% to 35%</p>
1998	<p><i>VAT</i> is introduced (at the standard rate of 22%)</p>	<p><i>SOC.C</i> – the total rate of the pension insurance contribution is reduced from 25.5% to 21.5%;</p> <p>– the total rate of the health insurance contribution is increased from 14% to 18%;</p> <p>– the child benefit and water contributions are abolished</p>
1999	<p><i>PIT</i> – PA increases to 1,000 kuna</p>	<p><i>VAT</i> – a reduced (zero) rate is introduced for certain products</p>
2000	<p><i>VAT</i> – the list of products that are taxed at the reduced (zero) rate is expanded</p> <p><i>PIT</i> – the PA increases to 1,250 kuna</p> <p><i>CIT</i> – investment incentives are introduced</p>	<p><i>SOC.C</i> – the total pension insurance contribution rate is reduced from 21.5% to 19.5%;</p> <p>– the total health insurance contribution rate is reduced from 18% to 16%</p>
2001	<p><i>VAT</i> – the list of products that are taxed at the reduced (zero) rate is expanded</p> <p><i>PIT</i> – four new types of tax relief are introduced (the employment incentive, education and training incentive, deduction of insurance premiums paid by taxpayers to domestic insurance companies and incentive for self-employed individuals in ASSCs and in the City of Vukovar who determine their income as the difference between receipts and outlays on the basis of business books)</p> <p><i>CIT</i> – a tax on dividends for non-resident legal entities is introduced;</p> <p>– tax relief for ASSCs and investment incentives is changed;</p> <p>– incentives for the City of Vukovar, employment incentives and disabled persons' incentives are introduced</p>	<p><i>PIT</i> – rates of 20% and 35% are replaced by rates of 15%, 25% and 35%</p> <p><i>CIT</i> – the general rate is reduced to 20%</p>
2002	<p><i>PIT</i> – an incentive for HMAs is introduced</p> <p><i>CIT</i> – incentives for HMAs are introduced</p>	<p><i>SOC.C</i> – a special contribution for insurance against accidents at work and occupational diseases is introduced (0.47%)</p>

Change	
Tax bases	Tax rates
	<p><i>PIT</i> – the tax brackets are changed;</p> <p>– PA is increased to 1,500 kuna;</p> <p>– two new types of tax relief are introduced (the research and development incentive and health care and housing allowance)</p>
2003	<p><i>PIT</i> – rates of 15%, 25% and 35% are replaced by rates of 15%, 25%, 35% and 45%</p> <p><i>SOC.C</i> – the total pension insurance contribution rate is increased from 19.5% to 20%;</p> <p>– the total health insurance contribution rate is reduced from 16.47% to 15.5%</p>
	<p><i>SOC.C</i> – pension insurance contributions on salaries and health insurance contributions from salaries are abolished</p>
	<p><i>PIT</i> – the tax brackets are changed;</p> <p>– the PA is increased to 1,600 kuna</p>
2005	<p><i>CIT</i> – the tax on dividends for non-resident legal entities is lifted;</p> <p>– tax relief for companies that are engaged in shipping activities is introduced</p> <p><i>SOC.C</i> – a special contribution for the employment of disabled persons is introduced</p>
2006	<p><i>VAT</i> – the list of products that are taxed at the reduced (zero) rate is reduced</p> <p><i>VAT</i> – the new reduced (10%) rate is introduced</p>
	<p><i>VAT</i> – the list of products that are taxed at the reduced (10%) rate is expanded</p>
	<p><i>PIT</i> – a new form of tax relief is introduced (a deduction from the lump-sum amount of tax on income from crafts and agriculture in the ASSCs, HMAs, City of Vukovar and islands of the first group)</p>
2007	<p><i>CIT</i> – incentives for disabled persons and employment incentives are abolished;</p> <p>– three forms of tax relief are changed (the investment incentive, R&D incentive and education and professional development incentive)</p>
2008	<p><i>PIT</i> – the PA is increased to 1,800 kuna</p>
2009	<p><i>VAT</i> – the standard rate is increased to 23%</p>
2010	<p><i>PIT</i> – the tax brackets are changed; a new form of tax relief is introduced (a voluntary pension insurance premium paid by employers on behalf of their employees)</p> <p><i>PIT</i> – rates of 15%, 25%, 35% and 45% are replaced by rates of 12%, 25% and 40%</p>

		Change	
		Tax bases	Tax rates
2011		<i>PIT</i> – two types of tax relief are abolished (insurance premiums paid by taxpayers to domestic insurance companies and the health care and housing allowance)	
		<i>VAT</i> – the list of products that are taxed at the reduced (10%) rate is expanded	
2012		<i>PIT</i> – the PA is increased to 2,200 kuna; the tax brackets are changed	
		<i>CIT</i> – a tax on dividends and profit shares of non-resident legal entities is introduced;	<i>VAT</i> – the standard rate is increased to 25%
		– investment incentives are replaced by a similar type of relief (investment incentive and incentive for the promotion of investment environments)	
			<i>SOC.C</i> – the health insurance contribution rate is reduced from 15% to 13%

Abbreviations: ASSC – areas of special state concern; CDWV – Croatian Disabled Homeland War Veterans; CIT – corporate income tax; SOC.C – social contributions; HMA – hill and mountain areas; PA – personal allowance (other than the personal allowance for pensioners); PIT – personal income tax; VAT – value added tax.

Source: Zakon o porezu na dodanu vrijednost, Zakon o porezu na dobit, Zakon o porezu na dohodak, Zakon o doprinosima.

REFERENCES

1. Allers, M., 1994. *Administrative and Compliance Costs of Taxation and Public Transfers in the Netherlands*. Groningen: Woltersgroep.
2. Blažić, H., 2004. Troškovi oporezivanja u Hrvatskoj: troškovi poreznih obveznika i troškovi poreznih vlasti. *Financijska teorija i praksa*, 28(3), pp. 271-291. Available at: <<http://www.ijf.hr/FTP/2004/3/blazic1.pdf>>.
3. Bratić, V. and Pitarević, M., 2004. Troškovi poreznih vlasti u Hrvatskoj. *Financijska teorija i praksa*, 28(3), 377-399. Available at: <<http://www.ijf.hr/FTP/2004/3/bratic-pitarevic.pdf>>.
4. Bratić, V. and Šimović, H., 2010. Usporedba troškovne učinkovitosti porezne administracije u Hrvatskoj sa zemljama OECD-a. *Hrvatska javna uprava : časopis za teoriju i praksu javne uprave*, 10 (1), pp. 163-180. Available at: <https://bib.irb.hr/datoteka/469105.2010-1_07_Bratic_Simovic.pdf>.
5. Chittenden, F., Foster, H. and Sloan B., 2010. *Taxation and Red Tape: The Cost to British Business of Complying with the UK Tax System*. London: The Institute of Economic Affairs.
6. Customs Administration, 1997.-2012. *Izvešća o broju zaposlenih, ukupnim godišnjim vlastitim prihodima CU te ukupnim godišnjim troškovima CU financiranim iz vlastitih sredstava CU za razdoblje 1997.-2012*. Zagreb: Ministry of Finance, Custom Administration.
7. Customs Administration, 2005.-12. *Izveštaj o prihodima i rashodima, primicima i izdacima za razdoblje 2005.-12*. Zagreb: Ministry of Finance, Custom Administration.
8. Evans, C., Pope J. and J. Hasseldine (eds.), 2001. *Tax Compliance Costs: A Festschrift for Cedric Sanford*. St Leonards: Prospect Media Pty Ltd.
9. Evans, C., 2003. Studying the Studies: An Overview of Recent Research into Taxation Operating Costs. *Journal of Tax Research*, 1(1), pp. 64-92.
10. Evans, C., 2006. Counting the costs of taxation: an exploration of recent developments in London School of Economics Capital Markets seminar series, presented at London School of Economics Capital Markets seminar series, London, England, 16 October 2006.
11. FINA, 2012. *Godišnji izvještaj o poslovanju financijske agencije za 2011. godinu*. Available at: <www.fina.hr/lgs.axd?t=16&id=13673>.
12. IMF, 2014. *GFS March 2014*. Washington: International Monetary Fund. Available at: <<http://elibrary-data.imf.org/>>.
13. Lignier, P. and Evans, C., 2012. The Rise and Rise of Tax Compliance Costs for the Small Business Sector in Australia, *Australian Tax Forum*, 27(3), pp 615-672.
14. Ministry of Finance, 2000.-12. *Godišnji izvještaj o izvršenju državnog proračuna Republike Hrvatske u razdoblju 2000.-12*. Zagreb: Ministry of Finance.

15. Ministry of Finance, 2012. *Statistički prikaz, No. 217*. Available at: <<http://www.mfin.hr/adminmax/docs/217%20LISTOPAD%202013.pdf>>.
16. Naredba o načinu uplaćivanja prihoda proračuna, obveznih doprinosa te prihoda za financiranje drugih javnih potreba u 2014. godini, NN 17/14. Zagreb: Narodne novine.
17. OECD, 2004. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2004*. Available at: <<http://www.oecd.org/ctp/administration/CIS-2004.pdf>>.
18. OECD, 2006. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2006*. Available at: <<http://www.oecd.org/ctp/consumption/CIS-2006.pdf>>.
19. OECD, 2009. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2008*. Available at: <<http://www.oecd.org/ctp/administration/CIS-2008.pdf>>.
20. OECD, 2011. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2010*. Available at: <<http://www.oecd.org/ctp/administration/CIS-2010.pdf>>.
21. OECD, 2013. *Tax Administration 2013: Comparative Information on OECD and Other Advanced and Emerging Economies*. Available at: <<http://www.oecd.org/ctp/administration/tax-administration-series.htm>>.
22. Opći porezni zakon, NN 147/08, 18/11, 78/12, 136/12, 73/13. Zagreb: Narodne novine.
23. Ott, K. and Bajo, A., 2000. Troškovi oporezivanja u tranzicijskim zemljama: iskustvo Hrvatske. *Financijska teorija i praksa*, 24(2), pp. 169-188.
24. Sandford, C. (ed.), 1995. *Tax Compliance Costs Measurement and Policy*. Bath: Fiscal Publications.
25. Sandford, C., 1994. International Comparisons of Administrative and Compliance Costs of Taxation. *Australian Tax Forum*, 11(3), pp. 291-309.
26. Sandford, C., 1995. Minimising Administrative and Compliance Cost. In: C. Sandford, ed. *More Key Issues in Tax Reform*. Bath: Fiscal Publications.
27. Sandford, C., 2000. *Why Tax Systems Differ: A Comparative Study of the Political Economy of Taxation*. Bath: Fiscal Publications.
28. Sandford, C., Godwin, M. and Hardwick, P., 1989. *Administrative and Compliance Costs of Taxation*. Bath: Fiscal Publications.
29. Tax Administration, 1995.-2006. *Izdaci Porezne uprave u odnosu na financijski plan proračuna u razdoblju 1995.-2006*. Zagreb: Ministry of Finance, Tax Administration.
30. Tax Administration, 2002.-12. *Izveštaj o prihodima i rashodima, primicima i izdacima u razdoblju 2002-12*. Zagreb: Ministry of Finance, Tax Administration.
31. Vítek, L. and Pubal, K., 2002. Evaluation of the Effectiveness of the Tax Collection – the Case of the Czech Central and Local Governments in the Czech

Republic in: *Delivering Public Services in CEE Countries: Trends and Developments*, ed.: Jan Finlay and Marek Debicky. Bratislava: NISPAcee. p. 485. Available at: <<http://unpan1.un.org/intradoc/groups/public/documents/NISPAcee/UNPAN004338.pdf>>.

32. Zakon o carinskoj službi, NN 53/91, 106/93, 67/01, 83/09, 49/11, 34/12, 68/13, 30/14. Zagreb: Narodne novine.
33. Zakon o doprinosima, NN 147/02, 175/03, 177/04, 84/08, 152/08, 94/09, 18/11, 22/12, 144/12, 148/13, 41/14. Zagreb: Narodne novine.
34. Zakon o financijskoj policiji, NN 89/92, 16/93, 94/93, 28/94, 177/04, 55/11, 25/12. Zagreb: Narodne novine.
35. Zakon o Poreznoj upravi, NN 71/99, NN 67/01, NN 94/01. Zagreb: Narodne novine.
36. Zakon o porezu na dobit, NN 109/93, 106/96, 127/00, 163/03, 177/04, 181/04, 90/05, 57/06, 146/08, 80/10, 22/12, 148/13. Zagreb: Narodne novine.
37. Zakon o porezu na dodanu vrijednost, NN 47/95, 106/96, 164/98, 105/99, 54/00, 73/00, 90/05, 76/07, 94/09, 87/09, 22/12, 136/12, 73/13, 148/13. Zagreb: Narodne novine.
38. Zakon o porezu na dohodak, NN 106/96, 164/98, 33/00, 127/00, 150/02, 163/03, 30/04, 177/04, 73/08, 80/10, 114/11, 22/12, 144/12, 125/13, 148/13. Zagreb: Narodne novine.