

# Can the efficiency of the Croatian tax authorities be improved?

---

**Bronić, Mihaela; Bratić, Vjekoslav**

*Source / Izvornik:* **Tax reforms: experiences and perspectives, 2014, 59 - 78**

**Conference paper / Rad u zborniku**

*Publication status / Verzija rada:* **Published version / Objavljena verzija rada (izdavačev PDF)**

*Permanent link / Trajna poveznica:* <https://urn.nsk.hr/urn:nbn:hr:242:506459>

*Rights / Prava:* [In copyright](#)/[Zaštićeno autorskim pravom.](#)

*Download date / Datum preuzimanja:* **2025-03-13**



*Repository / Repozitorij:*

[Institute of Public Finance Repository](#)

# CAN THE EFFICIENCY OF THE CROATIAN TAX AUTHORITIES BE IMPROVED?

**MIHAELA BRONIĆ**, INSTITUTE OF PUBLIC FINANCE, ZAGREB

**VJEKOSLAV BRATIĆ**, INSTITUTE OF PUBLIC FINANCE, ZAGREB

---

JEL CLASSIFICATION: H11, H83

## ABSTRACT

*The goals of this article were to determine whether the efficiency of tax authorities in Croatia improved in the period 1997-2012 and to identify how the efficiency can be improved in the future. We argue that the administrative costs of taxation in Croatia, as a percentage of GDP, decreased slightly during the past fifteen years, but the costs in Croatia remain above average for EU countries. Since in the analysed period expenses for telephone, mail and transportation services were high in absolute terms, and the steepest growth has been in IT expenses, leases and rentals and intellectual and personal services, special attention should be given to analysing and reducing these costs. The main problem related to the research of administrative costs in the longer period in Croatia is lack of relevant data, so Croatian tax authorities should collect more data and release it to the public.*

*Key words: 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 more information, see Sanford, 1995 and 1995a; and Sandford, Godwin and Hardwick, 1989:3). A practical definition of ACs is also provided in Allers (1994:33), which 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.<sup>1</sup> 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; ACs impose a smaller burden (in both absolute and relative terms) on the public sector than do CCs (for more details, see Evans, 2003:72). The most prominent organisation that explores ACs is the Organisation for Economic Co-operation and

---

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

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; but still in one-third of those countries, the ratio ranged between 0.15% and 0.25%. A relatively low share of ACs in the GDP (below 0.12%) is primarily observed in countries with low tax burdens and in countries 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 overheads (general costs) to individual tax types posed a special 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) poses a serious challenge for research.<sup>2</sup> Blažić (2004) showed 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) analyse the cost effectiveness of tax administration in Croatia during the period 2000-2007 in comparison with OECD member countries, concluding that Croatia's Tax Administration (TA) belongs to the group of average-efficient tax administrations, but that overall, Croatia's total tax authorities, including the TA, Customs Administration (CA) and Financial Police (FP), represent the worst performance.

The goals of this article were to determine whether the efficiency of tax authorities in Croatia improved in the period 1997-2012 and to identify how the efficiency can be improved in the future. We argue that the primary problem is a lack of relevant information for examining ACs in Croatia over a longer period of time. As a percentage of GDP, the total ACs of taxation in Croatia has fallen slightly over the past fifteen years but remains above the average for EU member states. The OECD (2013:178) indicates that the efficiency/effectiveness of tax authorities is usually 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 tax revenues (i.e., an effectiveness improvement). However, according to the OECD (2013), this indicator should be

---

<sup>2</sup> Researchers in other transitional countries have been faced with both the unavailability and poor quality of data for analysis. For example, for 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.

interpreted with caution, as several factors that are unconnected with tax authorities' efficiency/effectiveness can have an influence. Other authors also emphasise the need for caution in cross-country comparisons of ACs using the 'cost-to-collection' ratio (see Sandford, 1995:405; Sandford, 2000; Evans, 2006; and OECD, 2013). 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 from different countries does not typically use a standardised methodology, as there are differences in how ACs are defined and in the types of revenues that are collected by tax authorities; for example, some 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:
  - differences in 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 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) emphasise the potential maximum tax revenues that can be collected by tax authorities as an extremely important factor, especially in international comparisons. Thus, countries with similar cost-to-collection ratios can be completely different in terms of efficiency, which is measured as the ratio between collected and potential maximum tax revenues. Therefore, the OECD (2013:179-182) notes that the ratio between costs and GDP (calculated as the percentage share of ACs in GDP) is more appropriate for international comparisons of tax authorities' efficiency. However, this indicator should also be used 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 of 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 about 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.<sup>3</sup> 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 in the analysis the costs of the courts that decide tax and customs cases.<sup>4</sup>

Regrettably, data on the costs of FINA and the courts could not be obtained, as these data are not publicly available. A right of access to the information was unsuccessful with the Ministry of Justice and FINA because 1) they responded that they were not in possession of the requested data; and 2) they promised to submit the data at a later date (but never did). According to FINA reports, the 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 TA<sup>5</sup> 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) indicate additional costs that should be included in the ACs, such as parliamentary costs related to the enactment of tax legislation and the costs of interest-free loans in the private sector when there is no obligation for a taxpayer to pay tax to the government at the time when a taxable business transaction occurs (e.g., the VAT is payable only at the end of an accounting period). 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.

<sup>3</sup> 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.

<sup>4</sup> 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 against first-instance decisions). The General Tax Act prescribes legal remedies in tax proceedings (Articles 159 through 171 of the General Tax Act, Croatian version, NN 147/08, 18/11, 78/12, 136/12 and 73/13).

<sup>5</sup> FINA performs the following revenue-related activities, the analytical records of which are maintained by the TA: 1) supporting the system of recording and allowing 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 more information, see FINA, 2012).

This article uses reports from the MF, TA and CA.<sup>6</sup> According to the economic classification that is used in Croatia's state budget, ACs include operational costs/expenses (for employees, spent materials and IT services), costs/expenses for the procurement of capital assets (e.g., buildings and office equipment) and expenses for financial assets and loan repayments (usually, the repayment of the principal of received loans). However, these reports are often inadequate to make the necessary analyses. Thus, determining the ACs for each tax is impossible because the costs are not monitored according to type of tax. Additionally, because the TA collects taxes on behalf of some local government units charging a fee in the amount of 5% of collected revenues for, we wish to know the number of local government units for which the TA collects taxes. However, the TA has not responded to our inquiry.

Nonetheless, this is the first research for 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 Agency), the Croatian Health Insurance Institute and the Croatian Employment Service, which had the status of extra-budgetary funds. The costs of these institutions (along with revenues from social contributions) were not reported in the state budget. Researchers have not been able to include the costs that are generated by these institutions in ACs, as the available data do not clearly indicate how much 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 do not include the costs of these institutions in the total ACs, and for the same reason, the revenues from collected social contributions are not included in the total revenues that are collected by tax authorities.<sup>7</sup>

Although the TA performed some activities related to social contributions<sup>8</sup> even before 2001, in July 2001, TA took over all of Croatia's operations related to social contributions, including assessment, record-keeping, collection, supervision and enforcement of contributions, as well as the management of misdemeanour proceedings (Tax Administration Act, NN 67/01). Consequently, the TA budget (and thus the ACs) has included costs from pension-insurance contributions since 1 July 2001 and unemployment and health-insurance contributions since 1 January 2002. At the same time, revenues from social contributions are included in the total revenues that are collected by tax authorities.

---

<sup>6</sup> This article uses 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 budget financial plan for the period 1995-2006 (Tax Administration, 1995-2006); 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 Revenue and expenditure statements, receipts and outlays of the CA for the period 2005-2012 (Customs Administration, 2005-2012).

<sup>7</sup> 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.

<sup>8</sup> One example is the supervision of the correctness and timeliness of the calculation and payment of contributions (see the Tax Administration Act, NN 71/99).

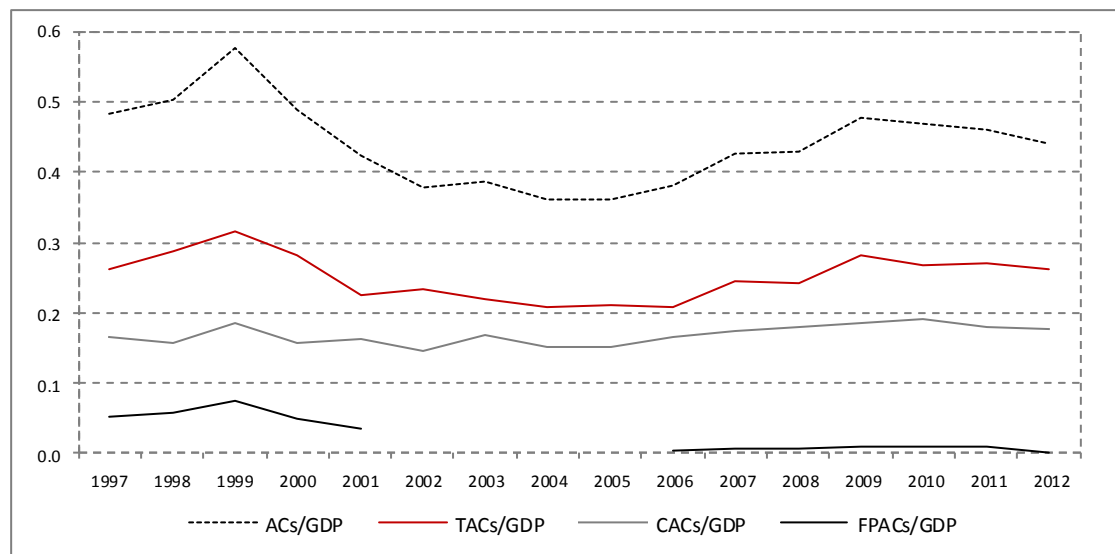
Below, we analyse key indicators of the Croatian tax authorities' (in)efficiency compared to the average indicators for EU member states. Then, we suggest what costs should be reduced by the Croatian tax authorities.

### 3 ANALYSIS OF ACs IN CROATIA IN THE PERIOD 1997-2012

As shown in Figure 1, the total ACs in Croatia dropped by approximately 10% in the period 1997-2012 (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, percentage of GDP, 1997-2012*



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

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

The sharpest decreases 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, AC-to-GDP ratio increased again 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, despite all of the constraints and deficiencies (i.e., differences in scope and methodology), we compare Croatia's ACs with the EU average.

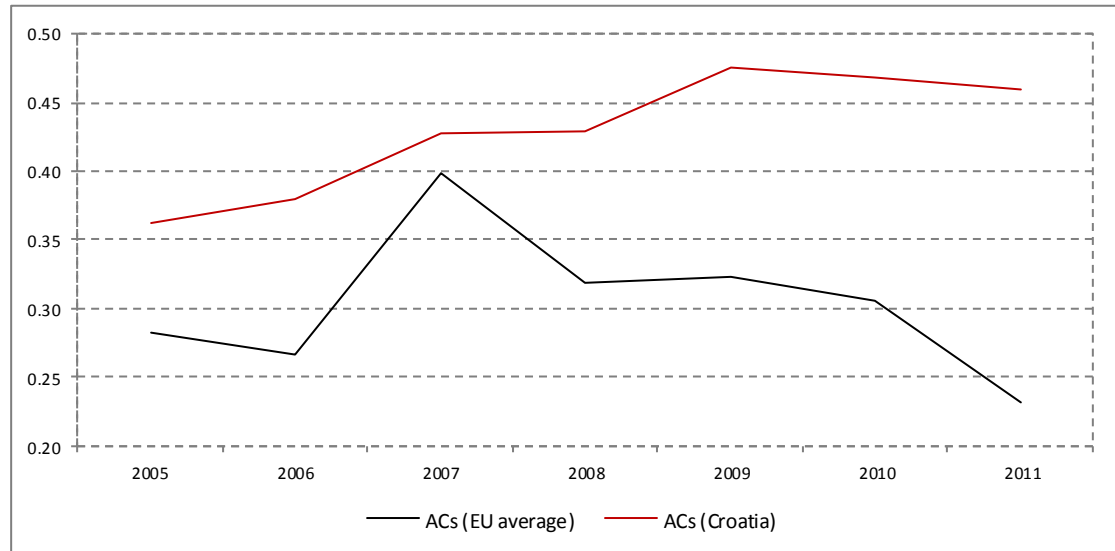
As shown in Figure 2, Croatia's ACs exceeded the EU average<sup>9</sup> in the period 2005-2011. Annex 2 features ACs as percentages of GDP for individual EU member states in the period 2005-2012. The AC data for the period until 2005 were not available for all EU member states, and the available data for the period after 2005 do not clearly show the actual composition of ACs for each country. Interestingly, in 2007, Croatia's ACs were close to the EU average, but they

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

increased after 2007 (to 0.46% of GDP in 2011) as the EU's average ACs fell markedly (to 0.23% of GDP in 2011).

**FIGURE 2**

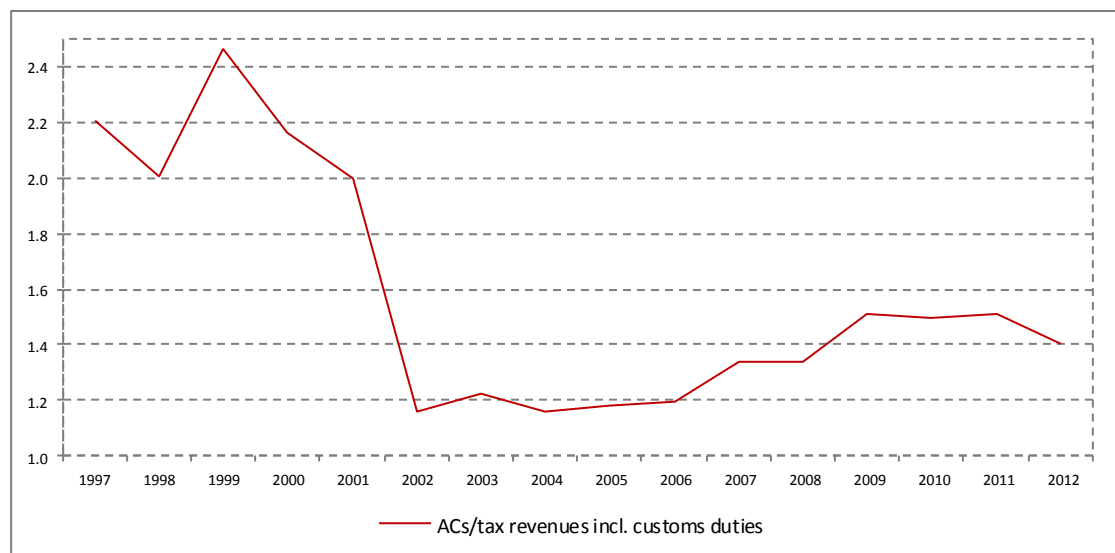
*A comparison of ACs between Croatia and the EU, percentage of GDP, 2005-2011*



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).

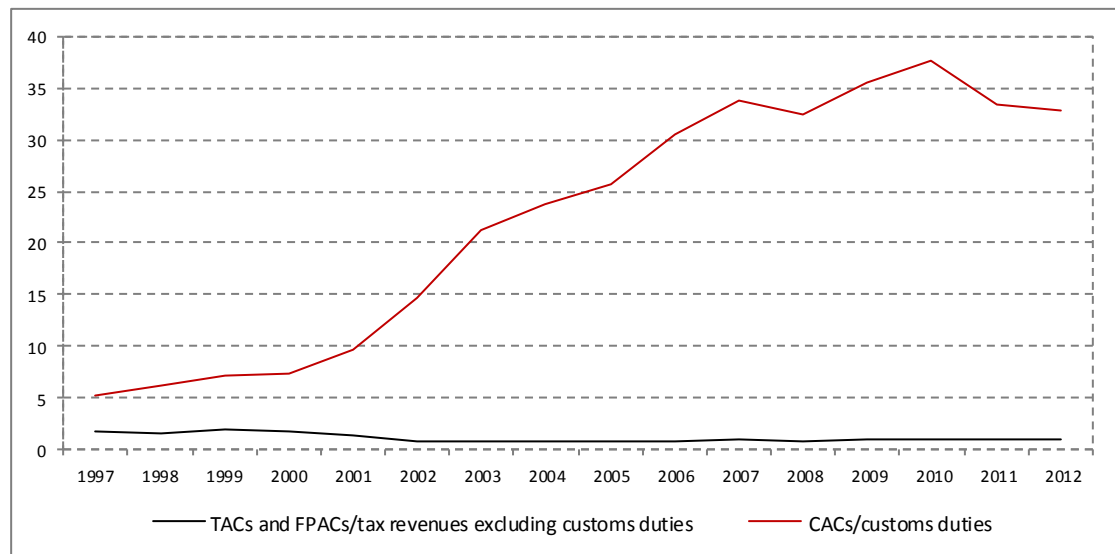
The percentage share of ACs in Croatia's total tax and customs revenues declined sharply in 2001 and 2002 (from 2.2% in 2000 to 1.2% in 2002, see Figure 3). Simply put, the cost of



collecting 100 HRK in tax and customs revenues in 2002 was 1.2 HRK. The most important cause of the slumps in ACs in 2001 and 2002 was the previously explained inclusion of social contributions in tax revenues. Social contributions constitute the second most abundant source of tax revenues after the VAT. In the period 2000-2012, social contributions accounted for approximately 34% of the total tax revenues at the general government level (Ministry of Finance, 2000-2012). Additionally, the 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.

**FIGURE 4**

*ACs by institution (TA, CA and FP), percentage of collected revenues, 1997-2012*



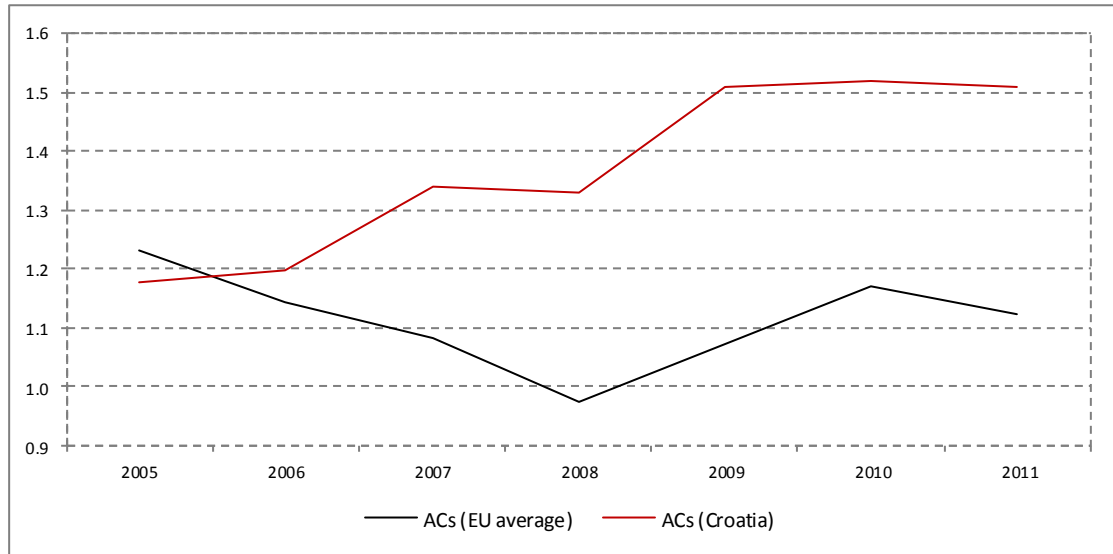
*TACs: Tax Administration's costs; CACs: Customs Administration's costs; FPACs: Financial Police administration's costs.*

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

Figure 4 shows that the growing share of ACs in the total collected tax revenues is primarily due to an increase in CA costs (CACs). Specifically, whereas CACs increased, customs duties declined over the observed period. CACs accounted for 5% of customs duties in 1997 and for as much as 33% in 2012 (a six-fold increase), which means that the cost of collecting 100 HRK in customs duties in 2012 was 33 HRK. Figure 5 compares Croatia with the EU average.

**FIGURE 5**

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

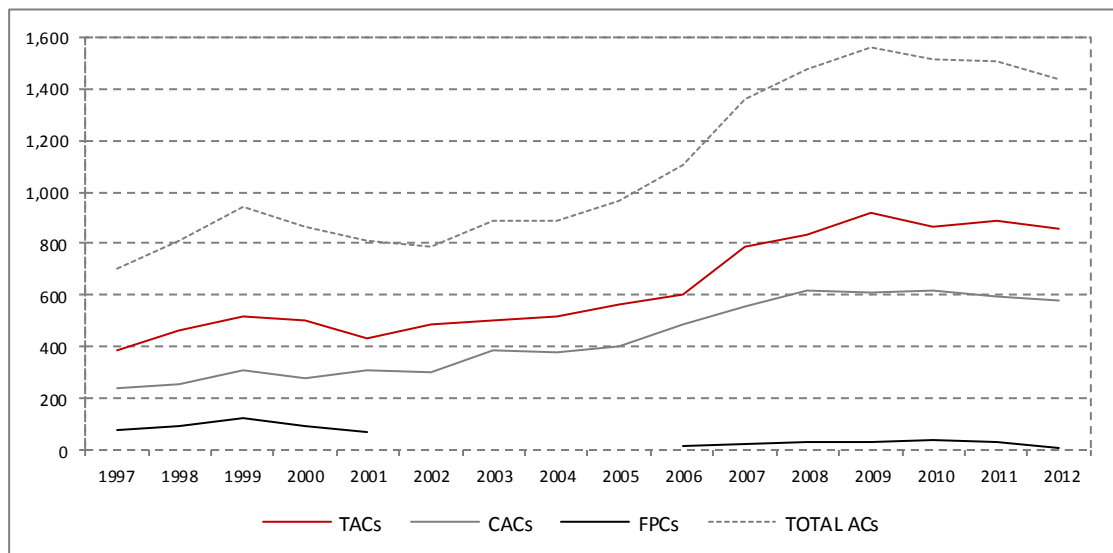


Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

In 2005, ACs in Croatia accounted for 1.2% of collected revenues, which was almost 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. At the same time, the average EU ACs decreased to 1.1% of collected revenues in 2011. Below, we examine the causes of the increase in ACs in Croatia after 2005.

**FIGURE 6**

ACs by institution, in million HRK, 1997-2012



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

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

From 1997 to 2012, the total ACs more than doubled in absolute terms (going up from approximately HRK 700 million to slightly more than HRK 1.4 billion). 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 6). In the period 2004-2012, ACs rose by approximately 60% (from HRK 900 million to approximately HRK 1.4 billion). For the entire period 1997-2012, TACs accounted for 50-60% of the total ACs, while the remaining ACs were primarily CACs (the Financial Police administration costs (FPACs) were almost negligible). Examining whether there is a correlation between ACs and tax changes in Croatia would be interesting; one could determine whether the total ACs rose during years when 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 1 shows major changes in the most important types of taxes (personal income tax, corporate income tax, VAT and social contributions) in Croatia in the period 1997-2012. But as it can be seen the tax changes are commonplace in Croatia (tax rates and/or tax bases are changed nearly annually) it would be very hard to establish a correlation between tax changes and the total ACs.<sup>10</sup> Thus, the need to collect cost data by the type of tax should be strongly emphasised in the next period, maybe correlation between tax changes related to certain type of tax and administrative costs related to that tax could be determined.

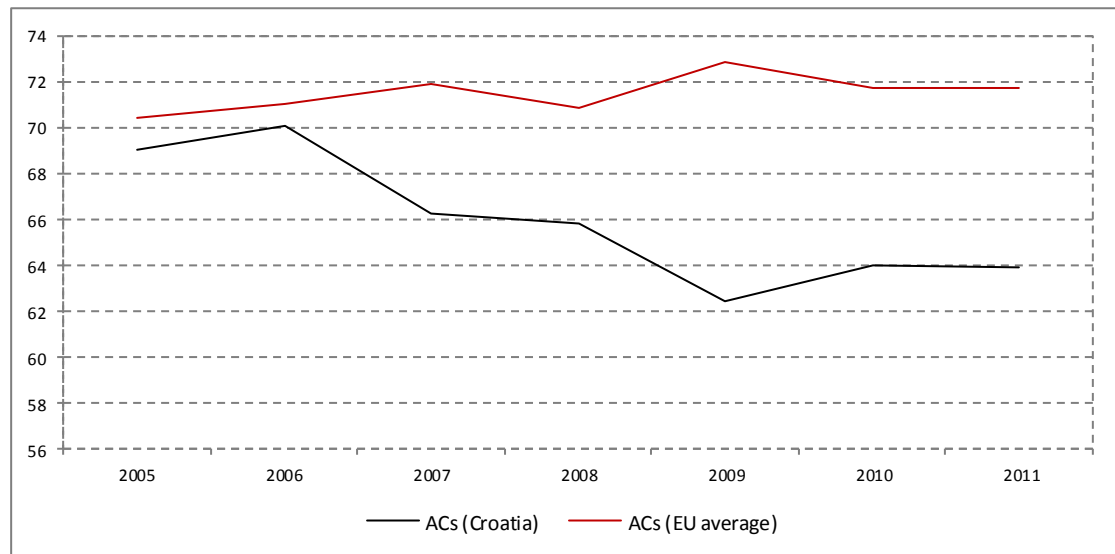
Below is a detailed analysis of staff and service expenses. An analysis of financial statements for the period 2004-2012 shows that staff and services were the largest expenses, accounting for the bulk of the total ACs (approximately 90%). These expenses increased steadily over the studied period (staff expenses increased by 46%, from HRK 631 million to HRK 921 million, and service expenses increased by more than 300%, from HRK 96 million to HRK 426 million).

According to the available data, in the period 2005-2011 (the EU data before 2005 are missing), the share of staff expenses in ACs in Croatia<sup>11</sup> was slightly below the average of EU member states. In the period 2005-2011, the EU average was approximately 70% of the total ACs. In a review of previous studies, Sanford (2000:118) shows that staff expenses represent the largest costs and typically account for approximately three-quarters of the total ACs.

---

<sup>10</sup> 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.

<sup>11</sup> Staff expenses in Croatia include salaries, payroll contributions and other staff expenses (i.e., transportation allowances, fieldwork and separation allowances and compensation for professional development and business travel).

**FIGURE 7***Staff expenses in Croatia and the EU, percentage of ACs, 1997-2011*

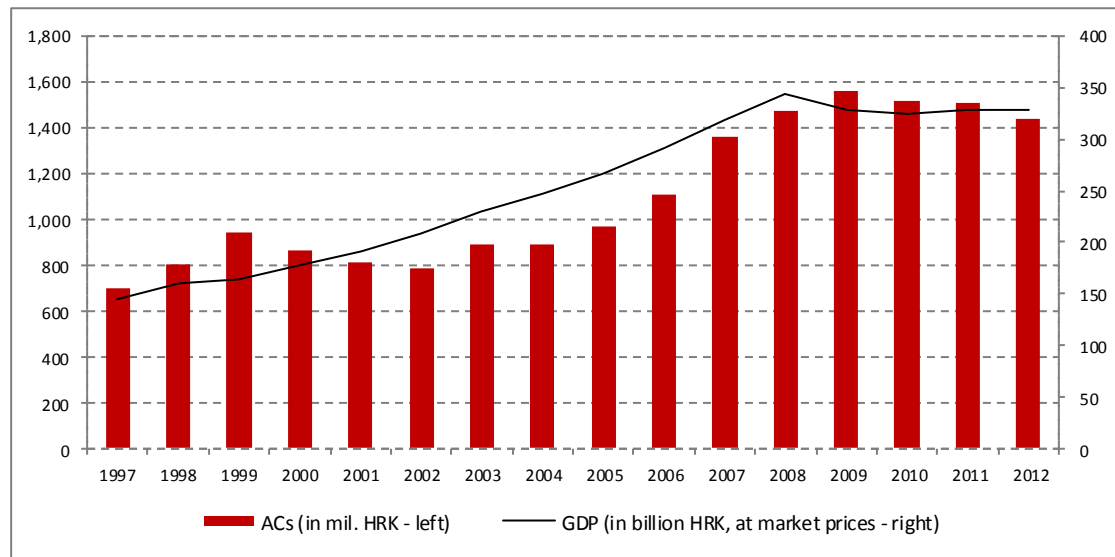
Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

**TABLE 1***Service expenses, 2004-2012, in million HRK*

Expenses:	2004	2005	2006	2007	2008	2009	2010	2011	2012
Telephone, mail and transportation services	48.4	100.8	76.9	84.8	92.7	119.1	99.5	84.3	75.8
Current and investment maintenance services	10.4	13.4	20.8	28.2	30.7	30.6	44.9	12.9	27.6
Utility services	15.2	20.5	20.7	23.4	26.3	28.3	28.4	8.6	8.5
Leases and rentals	6.9	9.3	13.7	17.6	18.6	19.0	23.5	28.6	29.3
Intellectual and personal services	2.2	2.6	4.7	13.0	26.1	77.3	33.5	17.3	21.1
IT services	2.8	5.3	5.2	116.4	149.1	149.4	155.7	213.9	213.9
Other services	10.2	12.7	24.9	32.7	26.0	22.3	24.4	43.2	43.4
Total	96.3	164.8	166.9	316.1	369.4	446.1	409.9	408.8	419.7

Source: Ministry of Finance (2000-2012).

As shown in Table 1, among service expenses, expenses for IT services grew the fastest (by approximately 7,000%, from HRK 3 million to approximately HRK 214 million). Leasing and rental expenses also increased sharply (by approximately 300%, from HRK 7 million to HRK 30 million), as did intellectual and personal-service expenses (by approximately 1,000%, from HRK 2 million to HRK 21 million). Expenses for telephone, mail and transportation services were also high in absolute terms during the observed period, as they constituted an average of approximately HRK 90 million annually. Consequently, both the TA and CA should pay special attention to analysing these expenses and should examine whether and to what extent these expenses should be reduced.

**FIGURE 8***ACs and GDP developments in Croatia, 1997-2012*

Source: Ministry of Finance (2000-2012).

Finally, although tax changes are commonplace in Croatia (see Annex 1), Figure 8 suggests that the increase in ACs in Croatia during the period 2002-2012 was primarily due to economic growth (GDP movements); the TA, CA and FP simply spend more money during periods of economic growth, whereas they spend less during periods of economic downturn.

#### 4 CONCLUSIONS

The goals of this article were to determine whether the efficiency of tax authorities in Croatia improved in the period 1997-2012 and to identify how the 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 average of EU member states. Therefore, the TA and CA should intensify their efforts to reduce ACs. The tax authorities should aim to collect the maximum revenue at a minimum cost within the existing taxation framework (Sandford, Godwin and Hardwick, 1989:203). The first action that the tax authorities can do is to perform a thorough analysis of ACs to establish whether ACs can be reduced. According to the present analysis, the steepest growth has been in IT expenses, leases and rentals and intellectual and personal services. In absolute terms, expenses for telephone, mail and transportation services for the whole period were also high. Consequently, both the TA and CA should pay special attention to analysing these expenses to determine whether and to what extent these expenses can be reduced.

In the period 2002-2012, ACs in Croatia were primarily correlated with economic growth (GDP movements), as the TA, CA and FP spend more money when the economy is strong and less in times of economic downturn.

As with 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 separated into individual types of taxes, which is a situation that should be improved in the future. That information would help the TA and CA to establish which taxes are the most expensive to administer and to find appropriate measures to reduce the underlying costs.

Efforts should 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, parliamentary costs related to enacting tax legislation, and the costs of interest-free loans to the private sector when there is no obligation for a taxpayer to pay tax to the government at the time when a taxable transaction occurs (e.g., in the case of the VAT, which is payable only at the end of an accounting period).

**ANNEX 1***Basic changes in personal income tax, corporate income tax, the VAT and social contributions, 1997-2012*

		Change
	Tax bases	Tax rates
1997	<i>PIT</i> – the PA increases from HRK 700 to HRK 800; – tax relief for CDWV is introduced	<i>PIT</i> – rates of 25% and 35% are replaced by rates of 20% and 35% <i>CIT</i> – the general rate is increased from 25% to 35%
1998	The <i>VAT</i> is introduced (at a general rate of 22%)	<i>SOC.C</i> – the total rate of the pension insurance contribution is reduced from 25.5% to 21.5%; – the total rate of the health insurance contribution is increased from 14% to 18%; – the child benefit and water contributions are abolished
1999.	<i>PIT</i> – PA increases to HRK 1,000	<i>VAT</i> – a zero rate is introduced for some products
2000	<i>VAT</i> – the list of products that are taxed at a zero rate is expanded	<i>SOC.C</i> – the total pension insurance contribution rate is reduced from 21.5% to 19.5%; – the total health insurance contribution rate is reduced from 18% to 16%
	<i>PIT</i> – the PA increases to HRK 1,250 <i>CIT</i> – investment incentives are introduced	
2001	<i>VAT</i> – the list of products that are taxed at a zero rate is expanded	<i>PIT</i> – rates of 20% and 35% are replaced by rates of 15%, 25% and 35%
	<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)	<i>CIT</i> – the general rate is reduced to 20%
	<i>CIT</i> – a tax on dividends for non– resident legal entities is introduced; – tax relief for ASSCs and investment incentives is changed; – incentives for the City of Vukovar, employment incentives and disabled persons' incentives are introduced	
2002	<i>PIT</i> – an incentive for HMAs is introduced <i>CIT</i> – incentives for HMAs are introduced	<i>SOC.C</i> – a special contribution for insurance against accidents at work and occupational diseases is introduced (0.47%)
2003	<i>PIT</i> – the tax brackets are changed; – PA is increased to HRK 1,500; – two new types of tax relief are introduced (the research and development incentive and health care and housing allowance)	<i>PIT</i> – rates of 15%, 25% and 35% are replaced by rates of 15%, 25%, 35% and 45%

		Change	
		Tax bases	Tax rates
		<i>CIT</i> – an R&D incentive and education and professional development incentive are introduced	<i>SOC.C</i> – the total pension insurance contribution rate is increased from 19.5% to 20%; – the total health insurance contribution rate is reduced from 16.47% to 15.5%
		<i>SOC.C</i> – pension insurance contributions on salaries and health insurance contributions from salaries are abolished	
		<i>PIT</i> – the tax brackets are changed; – the PA is increased to HRK 1,600	
2005		<i>CIT</i> – the tax on dividends for non-resident legal entities is lifted; – tax relief for companies that are engaged in shipping activities is introduced	
		<i>SOC.C</i> – a special contribution for the employment of disabled persons is introduced	
2006		<i>VAT</i> – the list of products that are taxed at a zero rate is reduced	<i>VAT</i> – a new 10% rate is introduced
		<i>VAT</i> – the list of products that are taxed at a 10% rate is expanded	
2007		<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)	
		<i>CIT</i> – incentives for disabled persons and employment incentives are abolished; – three forms of tax relief are changed (the investment incentive, R&D incentive and education and professional development incentive)	
2008		<i>PIT</i> – the PA is increased to HRK 1,800	
2009			<i>VAT</i> – the general rate is increased to 23%
2010		<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)	<i>PIT</i> – rates of 15%, 25%, 35% and 45% are replaced by rates of 12%, 25% and 40%
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)	
2012		<i>VAT</i> – the list of products that are taxed at a 10% rate is expanded	<i>VAT</i> – the general rate is increased to 25%



Change	
Tax bases	Tax rates
<p><i>PIT</i> – the PA is increased to HRK 2,200; the tax brackets are changed</p>	
<p><i>CIT</i> – a tax on dividends and profit shares of non– resident legal entities is introduced; – investment incentives are replaced by a similar type of relief (investment incentive and incentive for the promotion of investment environments)</p>	
	<p><i>SOC.C</i> – the health insurance contribution rate is reduced from 15% to 13%</p>

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

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

## ANNEX 2

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

	Administrative costs of tax administration/gross domestic product 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
UK	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	

	Administrative costs of tax administration/gross domestic product percentage *							Significant factors affecting cross-country comparisons of ratios
	2005	2006	2007	2008	2009	2010	2011	
Czech Rep.	0.22	0.22	0.20	0.19	0.20	0.19	0.20	
Slovak Rep.	0.22	0.20	0.17	n.a.	n.a.	0.18	0.18	
Italy <sup>2</sup>	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: Data revised to detect 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 up 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 Finanzia), and separate tax debt collection functions (Equitalia); data are not provided for subsequent years.

Source: OECD, 2013.

## 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.
3. Bratić, V. and Pitarević, M., 2004. Troškovi poreznih vlasti u Hrvatskoj. *Financijska teorija i praksa*, 28(3), 377-399.
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.
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, Customs Administration.
7. Customs Administration, 2005.-12. *Izveštaj o prihodima i rashodima, primicima i izdacima za razdoblje 2005.-12*. Zagreb: Ministry of Finance, Customs Administration
8. 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.
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. FINA, 2012. *Godišnji izvještaj o poslovanju financijske agencije za 2011. godinu*. Zagreb: FINA.
11. IMF, 2014. *GFS March 2014*. Washington: International Monetary Fund.
12. Ministry of Finance, 2000.-12. *Godišnji izvještaj o izvršenju državnog proračuna Republike Hrvatske u razdoblju 2000.-12*. Zagreb: Ministry of Finance.
13. Ministry of Finance, 2012. *Statistički prikaz, No. 217*. Zagreb: Ministry of Finance.
14. Naredba o načinu uplaćivanja prihoda proračuna, obveznih doprinosa te prihoda za financiranje drugih javnih potreba u 2014. godini, NN 17/14. Zagreb: Narodne novine
15. OECD, 2004. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2004*. Paris: OECD.
16. OECD, 2006. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2006*. Paris: OECD.
17. OECD, 2009. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2008*. Paris: OECD.
18. OECD, 2011. *Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series 2010*. Paris: OECD.
19. OECD, 2013. *Tax Administration 2013: Comparative Information on OECD and Other Advanced and Emerging Economies*. Paris: OECD.
20. Opći porezni zakon, NN 147/08, 18/11, 78/12, 136/12, 73/13. Zagreb: Narodne novine.
21. Ott, K. and Bajo, A., 2000. Troškovi oporezivanja u tranzicijskim zemljama: iskustvo Hrvatske. *Financijska teorija i praksa*, 24(2), pp. 169-188.
22. Sandford, C. (ed.), 1995. *Tax Compliance Costs Measurement and Policy*. Bath: Fiscal Publications.
23. Sandford, C., 1994. International Comparisons of Administrative and Compliance Costs of Taxation. *Australian Tax Forum*, 11(3), pp. 291-309.

24. Sandford, C., 1995a. Minimising Administrative and Compliance Cost. In: C. Sandford, ed. *More Key Issues in Tax Reform*. Bath: Fiscal Publications.
25. Sandford, C., 2000. *Why Tax Systems Differ: A Comparative Study of the Political Economy of Taxation*. Bath: Fiscal Publications.
26. Sandford, C., Godwin, M. and Hardwick, P., 1989. *Administrative and Compliance Costs of Taxation*. Bath: Fiscal Publications.
27. Tax Administration, 1995.-2006. *Izdaci Porezne uprave u odnosu na financijski plan proračuna u razdoblju 1995.-2006*. Zagreb: Ministry of Finance, Tax administration.
28. Tax Administration, 2002.-12. *Izveštaj o prihodima i rashodima, primicima i izdacima u razdoblju 2002-12*. Zagreb: Ministry of Finance, Tax administration.
29. Vitek, 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, 485.
30. Zakon o carinskoj službi (Customs Service Act), NN 53/91, 106/93, 67/01, 83/09, 49/11, 34/12, 68/13 and 30/14. Zagreb: Narodne novine.
31. 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.
32. Zakon o financijskoj policiji (Financial Police Law), NN 89/92, 16/93, 94/93, 28/94, 177/04, 55/11, 25/12. Zagreb: Narodne novine.
33. Zakon o Poreznoj upravi, NN 71/99, NN 67/01, NN 94/01. Zagreb: Narodne novine.
34. 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.
35. 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.
36. 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.