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Can the efficiency of the Croatian tax authorities be improved?

MIHAELA BRONIĆ, PhD*
VJEKOSLAV BRATIĆ, PhD*

Mihaela BRONIĆ
Institute of Public Finance, Smičiklasova 21, 10000 Zagreb, Croatia
e-mail: mihaela.bronic@ijf.hr

Vjekoslav BRATIĆ
Institute of Public Finance, Smičiklasova 21, 10000 Zagreb, Croatia
e-mail: vjekoslav.bratic@ijf.hr

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

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[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 TA[5] 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.

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[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 reinstituted 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).

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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 contributions[8] 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.

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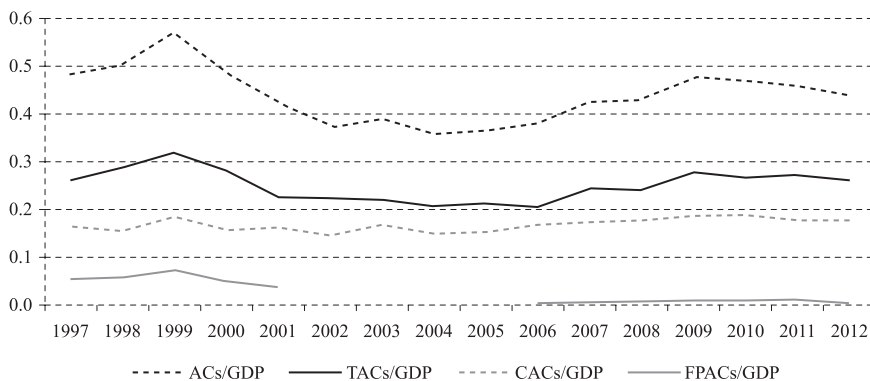
TACs: Tax Administration costs; CACs: Customs Administration costs; FPACs: Financial Police Administration costs.

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 average[9] 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

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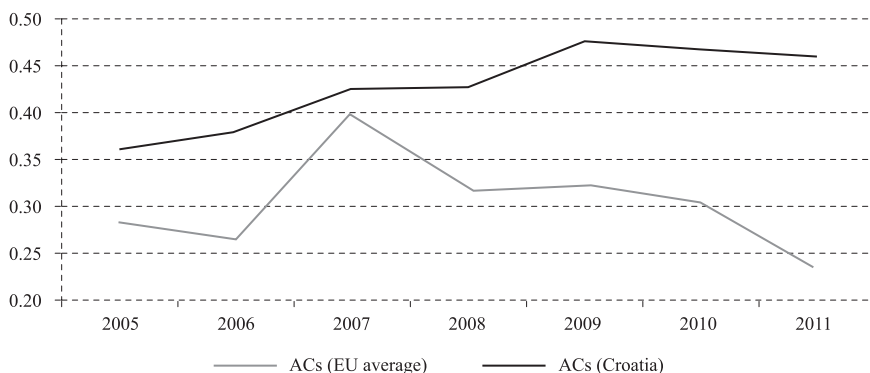
Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

FIGURE 3

ACs in Croatia as percentage of collected tax revenues, 1997-2012*
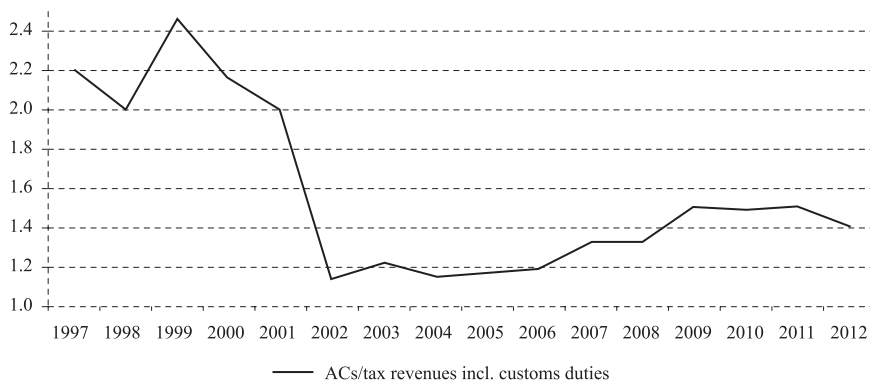
* For the purposes of this analysis, "collected tax revenues" are the tax revenues of the state budget.

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]

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[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.

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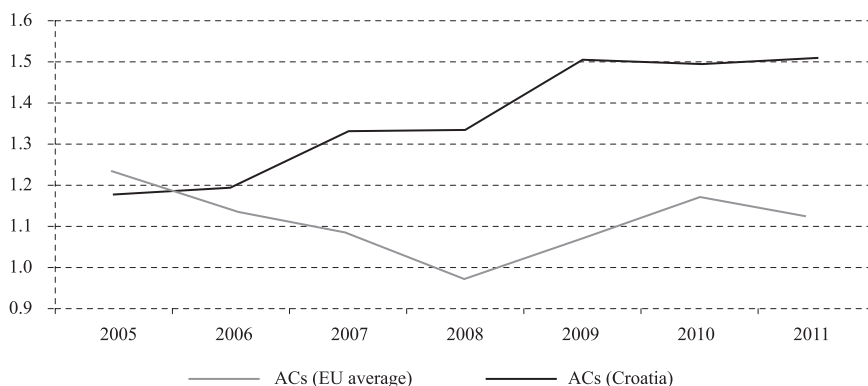
Sources: OECD (2013); Ministry of Finance (2000-2012); Tax Administration (1995-2006; 2002-2012); Customs Administration (1997-2012; 2005-2012).

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%

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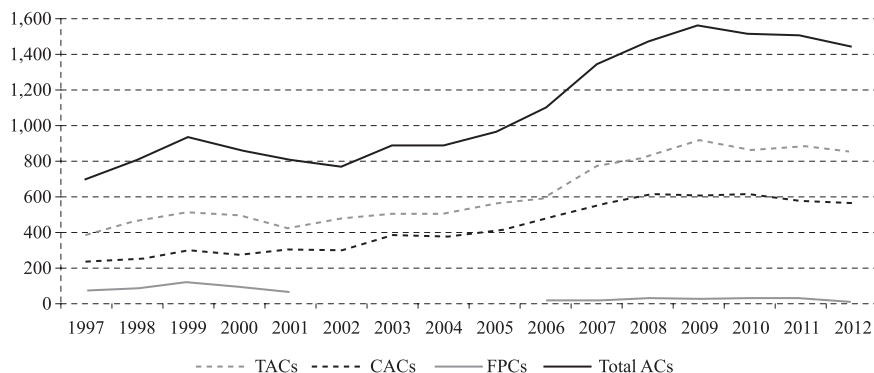
TACs: Tax Administration costs; CACs: Customs Administration costs; FPACs: Financial Police Administration costs.

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

Croatia[11] 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

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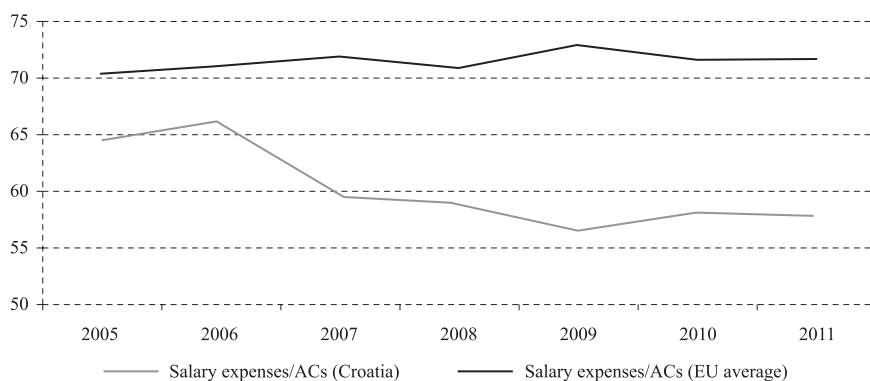
* For Croatia, only ACs financed from the state budget are analysed. Smaller amounts of ACs financed from TA, CA and FP own revenues are not analysed due to a lack of detailed data.

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
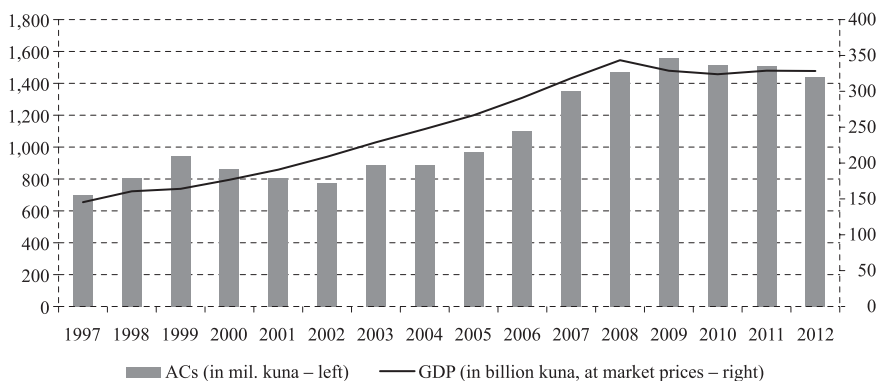
Source: Ministry of Finance (2000-2012).

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[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.

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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.

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ANNEX 1

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 Financia), and separate tax debt collection functions (Equitalia); data are not provided for subsequent years.
Source: OECD (2013).

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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).

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ANNEX 3

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

	Change	
	Tax bases	**Tax rates**
1997	*PIT* – the PA increases from 700 to 800 kuna;	*PIT* – rates of 25% and 35% are replaced by rates of 20% and 35%
	– tax relief for CDWV is introduced	*CIT* – the general rate is increased from 25% to 35%
1998	*VAT* is introduced (at the standard rate of 22%)	*SOC.C* – 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	*PIT* – PA increases to 1,000 kuna	*VAT* – a reduced (zero) rate is introduced for certain products
2000	*VAT* – the list of products that are taxed at the reduced (zero) rate is expanded	*SOC.C* – the total pension insurance contribution rate is reduced from 21.5% to 19.5%;
	PIT – the PA increases to 1,250 kuna	– the total health insurance contribution rate is reduced from 18% to 16%
	CIT – investment incentives are introduced	
2001	*VAT* – the list of products that are taxed at the reduced (zero) rate is expanded	*PIT* – rates of 20% and 35% are replaced by rates of 15%, 25% and 35%
	PIT – 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)	*CIT* – the general rate is reduced to 20%
	CIT – 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	*PIT* – an incentive for HMAs is introduced	*SOC.C* – a special contribution for insurance against accidents at work and occupational diseases is introduced (0.47%)
	CIT – incentives for HMAs are introduced	

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	Change	
	Tax bases	**Tax rates**
2003	*PIT* – the tax brackets are changed; – PA is increased to 1,500 kuna; – two new types of tax relief are introduced (the research and development incentive and health care and housing allowance) *CIT* – an R&D incentive and education and professional development incentive are introduced *SOC.C* – pension insurance contributions on salaries and health insurance contributions from salaries are abolished	*PIT* – rates of 15%, 25% and 35% are replaced by rates of 15%, 25%, 35% and 45% *SOC.C* – 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%
2005	*PIT* – the tax brackets are changed; – the PA is increased to 1,600 kuna *CIT* – the tax on dividends for non-resident legal entities is lifted; – tax relief for companies that are engaged in shipping activities is introduced *SOC.C* – a special contribution for the employment of disabled persons is introduced	
2006	*VAT* – the list of products that are taxed at the reduced (zero) rate is reduced	*VAT* – the new reduced (10%) rate is introduced
2007	*VAT* – the list of products that are taxed at the reduced (10%) rate is expanded *PIT* – 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) *CIT* – 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	*PIT* – the PA is increased to 1,800 kuna	
2009		*VAT* – the standard rate is increased to 23%
2010	*PIT* – 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)	*PIT* – rates of 15%, 25%, 35% and 45% are replaced by rates of 12%, 25% and 40%

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	Change	
	Tax bases	**Tax rates**
2011	*PIT* – two types of tax relief are abolished (insurance premiums paid by taxpayers to domestic insurance companies and the health care and housing allowance)	
2012	*VAT* – the list of products that are taxed at the reduced (10%) rate is expanded	
	PIT – the PA is increased to 2,200 kuna; the tax brackets are changed	
	CIT – 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)	*VAT* – the standard rate is increased to 25%
		SOC.C – 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.

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Time to stop avoiding the tax avoidance issue in Croatia? A proposal based on recent developments in the European Union

STJEPAN GADŽO, LL.M.*
IRENA KLEMENČIĆ, LL.M.*

Stjepan GADŽO
University of Rijeka, Faculty of Law, Hahlić 6, 51000 Rijeka, Croatia
e-mail: sgadzo@pravri.hr

Irena KLEMENČIĆ
Institute of Public Finance, Smičiklasova 21, 10000 Zagreb, Croatia
e-mail: irena.klemencic@ijf.hr

Abstract

The paper takes a tax policy perspective in analysing the approach to tax avoidance in Croatia and expounding its existing shortcomings. It is argued that Croatia is yet to develop a coherent legislative framework suitable for curbing tax avoidance in an equitable, efficient and simple way. One instrument that has hitherto been ignored is the general anti-avoidance rule (GAAR), a keystone of anti-avoidance policies in other countries. The authors propose the introduction of a specific GAAR, based on recent developments in the European Union (EU), in Croatian tax legislation. This proposal is supported by multiple tax policy arguments. Special emphasis is placed on the requirements of legal certainty, a traditional weak spot of the Croatian tax system. The proposal is put in the context of the persistent quest for a sustainable public finance system in times of crisis.

Keywords: tax avoidance, tax abuse, general anti-avoidance rule, GAAR, EU tax law, wholly artificial arrangements, tax policy

1 INTRODUCTION

> "The avoidance of taxes is the only intellectual pursuit
> that still carries any reward."
> (J. M. Keynes)[1]

Ever since its comprehensive reform in 1994 the Croatian tax system has exhibited a distinct lack of any coherent approach to tax avoidance. While global trends have been followed in introducing numerous targeted anti-avoidance rules (TAARs), there is a gaping absence of statutory provisions able to curb more complex tax avoidance schemes. Legislative instruments that fit this purpose are the so-called general anti-avoidance rules (GAARs), recently on the rise in a number of countries (Ernst & Young, 2013), largely due to growing concerns about wealthy individuals and multinational corporations (MNCs) not paying their "fair share" in the financing of public services. Tax avoidance currently ranks high on the tax policy agenda worldwide, as evidenced by the G8 and G20 meetings of 2013 and other developments at the regional and the international level (e.g., the OECD project on tax base erosion and profit shifting).

The institutions of the European Union have also taken the initiative in this area, stressing the need for a uniform anti-avoidance approach in all of the EU member states. One of its envisaged cornerstones is the "EU GAAR", as proposed by the European Commission (EC) in its non-binding recommendation of 2012. The proposal is based on the anti-avoidance approach developed by the EU judiciary in the past, which has had a strong influence on member states' national legislation. Because EU institutions have no competence in tax matters, the proposal's effects are contingent on the national tax policy choices of each member state.

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[1] As cited in Perrou (2006).

This paper takes a tax policy perspective in claiming that the time has come for the introduction of a GAAR – modelled after the EC's proposal – in the Croatian tax system. The arguments go beyond the traditional examination of GAAR's influence on efficiency and equity, those paramount tax-policy objectives. GAAR's potential in recovering public revenues lost to tax avoidance activities and in narrowing the tax gap via improvements in tax compliance levels is highly important in the era of fiscal consolidation. Therefore, its introduction would give a strong signal to the country's creditors that the government is acting responsibly in imposing and collecting taxes, which is a prerequisite for sustainable public finance system. Given that Croatian public finances are currently undergoing the surveillance procedure by the EU institutions, this point deserves special emphasis. Furthermore, it is argued that the introduction of an "EU-style GAAR" could have positive effects on legal certainty – of particular concern for the all stakeholders in Croatia – particularly if it is accompanied with the adoption of other instruments enhancing the relationship between the tax authorities and taxpayers, e.g. advance rulings.

The paper is organised as follows. After the introduction, section two highlights the importance of the tax avoidance issue for tax policy and the role of a GAAR in that context. Section three analyses the added complexity of anti-avoidance policies in member states of the EU. It also introduces the EC proposal on a uniform EU GAAR and gives a brief overview of experiences with GAARs in selected crisis-stricken member states (Spain, Italy and Portugal). Section four deals with the anti-avoidance approach in Croatia hitherto and provides the authors' proposal for the introduction of a GAAR in the Croatian tax system. The fifth section contains a summary of the main findings.

2 ANTI-AVOIDANCE TAX POLICY AND THE ROLE OF A GAAR

Tax policy is the art of making numerous decisions about tax structure and tax design. From a normative perspective, these decisions and their effects are typically evaluated using three criteria: equity, efficiency and administrability (Avi Yonah, 2006). In simple terms, tax policymakers must, simultaneously, strive to make the tax system as equitable (fair), economically efficient and easy-to-administer as possible. It is well established in the theory of public finance that the attainment of these goals is influenced by the reality of taxpayers' behavioural responses to taxation (Slemrod and Yithzaki, 2002). In every country there is a certain percentage of taxpayers who do not comply with their obligations prescribed in the tax statutes. Tax compliance is a complex subject that cannot be explained using only the economics-of-crime approach, i.e. considering factors such as penalty schedule and probability of detection (Alm, 2012). Other factors, like tax morale and social norms, also have an influence on the tax compliance level (Torgler and Schaltegger, 2006). While expounding the possible underlying causes of tax non-compliance goes beyond the scope of this paper, their understanding is of vital importance in tax policy-making (Tooma, 2008)[2].

[2] For a comprehensive survey of tax non-compliance reasons and patterns see Andreoni, Erard and Feinstein (1998).

2.1 THE ELUSIVE CONCEPT OF TAX AVOIDANCE AND THE IMPORTANCE OF "LINE DRAWING"

Two general types of tax non-compliance must be distinguished: (1) tax evasion, and (2) tax avoidance. This dichotomy is discernible from the legal perspective. Whereas tax evasion denotes behaviour that is illegal, i.e. contrary to the letter of the tax law, tax avoidance stands for behaviour that is legal, i.e. in accordance with the letter of the tax law, but frustrates the underlying purpose of the relevant legal rules[3]. It is far easier to detect tax evasion, within the broad spectrum of illegal actions taxpayers take with the goal of reducing their tax liability. Typical examples include income underreporting, fraudulent invoicing for VAT purposes and undervaluation of property value (Alm, 2012). In contrast, characterising a kind of behaviour as tax avoidance poses a serious challenge for the tax administration and the taxpayers themselves. This is a natural consequence of the inherent vagueness and ambiguity of the notion of tax avoidance, particularly if compared to notions such as "tax planning", "tax mitigation", or "tax minimization". As the goal of this paper is to provide a proposal to policymakers to combat tax avoidance using legislative instruments – more specifically a GAAR – it is useful to start with an attempt to elucidate the concept of tax avoidance.

One has to note first that taxpayers can make a variety of choices and decisions which directly influence their tax liability. In fact, one of the general design features of tax systems is the dependency of tax liability upon the "economic reality that has previously been regulated, classified or characterised by other branches of law (commerce or other private law)" (Ruiz Almendral, 2005). Therefore, taxpayers are generally free to choose the legal form of their economic activities, which may profoundly affect the amount of tax due. Classic examples include the choice of financing business activity with debt or equity or the option of undertaking a business activity in a corporate form. Tax planning is the umbrella term used to describe a vast array of legal activities aimed at reducing or deferring the tax liability, i.e. optimizing the tax position of a person. Tax avoidance is, in comparison, equated with those tax planning activities which are in some way considered "illegitimate" or "unacceptable" (Russo, 2007). For the sake of clarity the term tax planning (or tax mitigation) is used below only in respect of those activities that are acceptable and permissible from the tax policymakers' perspective (Atkinson, 2012).

Admittedly, attempts at producing a precise definition of tax avoidance do not only represent a challenging task – it is asserted that the term "does not have a limiting and definite meaning" (Barker, 2009) – but also bear little significance for tax policy. The focus should instead be on drawing the line between (acceptable) tax planning and (unacceptable) tax avoidance. Two aspects need to be emphasized against this backdrop: firstly, the issue of the criteria that ought to be em-

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[3] This general depiction of evasion and avoidance can be viewed as an oversimplification, particularly from the tax lawyers' standpoint. For a more nuanced discussion about the evasion/avoidance dichotomy see Uckmar (1983).

ployed in the line-drawing, and secondly, the issue of institutional competence in the development of these criteria. The former usually entails the consideration of the purpose of a taxpayer's legal arrangements, which may be established on a subjective or objective basis (Zimmer, 2002). Accordingly, activities conducted with the sole or main purpose of gaining a tax benefit, contrary to the underlying intent of the applicable law, are deemed to have crossed the borderline into tax avoidance (Cooper, 2001). The latter aspect pertains to the role of the legislative and judiciary branch of government in establishing and developing anti-avoidance doctrines. While in some countries – particularly those of common law legal systems (e.g. USA) – the judiciary has taken an "activist" approach with a remarkable degree of freedom and creativity in delimiting the notion of tax avoidance (Brown, 2012), in other countries – not limited only to those of civil law legal systems (e.g. Belgium, Germany, Sweden) – the role of the judiciary is restricted, principally on the basis of constitutional limitations to the power of taxation (Zimmer, 2002; Vanistaendel, 1996). This is an important point for tax policymakers, as the decision to curb tax avoidance with legislative instruments is heavily influenced by the extent and efficacy of judicial intervention in this area (Arnold, 2008).

Irrespective of the approach and instruments used for its delimitation, there are various persuasive arguments why tax avoidance needs to be recognized as an important tax policy issue. First and foremost, tax avoidance behaviour undermines the attainment of the main normative criteria used to evaluate the tax policy. Fairness is endangered because tax avoidance narrows the tax base and changes the relative shares of tax burden among taxpayers (Tax Law Review Committee, 1997), presumably – due to the inequality of avoidance opportunities – to the detriment of lower income groups (Hillman, 2009). From the standpoint of economic efficiency, tax avoidance is considered to be "socially wasteful in that it results in distorted choices made on a basis other than the marginal social cost and benefit of an economic activity" (Hyman, 2011). Furthermore, the proliferation of avoidance schemes adds to the complexity of the tax legislation, as legislators try to close specific loopholes (Tax Law Review Committee, 1997), which inevitably increases the compliance and administrative costs of taxation.

Moreover, in the post-crisis era of fiscal consolidation, other negative effects of tax avoidance seem to play a more important role in the policymaking process. One direct macroeconomic effect of tax avoidance is the revenue loss for the government (Tooma, 2008), which is of special concern for countries faced simultaneously with daunting budget deficits and public debt limits. Accordingly, strengthened anti-avoidance measures form one part of the wider tax base-broadening strategy employed for the revenue side of the fiscal consolidation (International Monetary Fund, 2013). Finally, the fact that the public outrage at tax avoidance, widely perceived as a prerogative of MNCs and wealthy individuals, has been picked up by the politicians (Freedman, 2012) cannot be underestimated. Anti-avoidance currently ranks high on the agenda of multilateral organizations – notably G20, OECD and the EU – encouraging the higher degree of inter-gov-

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ernmental coordination necessary to restrain those avoidance schemes that exploit the deficiencies of the international tax regime (Ernst & Young, 2013).

2.2 GAAR AS A POLICY TOOL IN COMBATING TAX AVOIDANCE

Legislative anti-avoidance instruments can be divided into two groups: targeted anti-avoidance rules (TAARs) and general anti-avoidance rules (GAARs). The tax systems of many countries contain both (Ernst & Young, 2013). The main difference lies in their scope of application, i.e. the type of behaviour they are targeted at. While TAARs are aimed at curbing specific tax avoidance techniques, e.g. abusive transfer pricing or debt financing, GAARs can be applied on a much broader scale, forming a sort of "catch-all" anti-avoidance tool (Ostwal and Vijaraghavan, 2010). The fundamental role of a GAAR is to draw a statutory line between acceptable tax planning and unacceptable tax avoidance, by providing the tax administration and the courts a set of parameters they can take into account when deciding on the acceptability of a taxpayers' tax reduction behaviour (Brown, 2012).

Although GAARs vary in form in different countries, some common design features can be identified. Firstly, a GAAR can be applied only if a taxpayer's arrangement – a term that is usually defined very broadly (Atkinson, 2012) – results in a tax benefit (e.g. exclusion of a certain item of income from the tax base) that would not arise but for the arrangement (Cooper, 2001).

More importantly, the application of a GAAR depends on the sought purpose of the taxpayer's arrangement. It is applied if the purpose of the arrangement was to obtain the tax benefit, thus invoking the conclusion that tax avoidance is a purpose-based notion (Cooper, 2001). Even though ascertaining the taxpayer's purpose, an inherently mental element of the arrangement, may appear complicated, some objective conditions (e.g. the commercial substance of the arrangement) can act as meaningful proxies, as demonstrated by many existing GAARs (Ernst & Young, 2013). An obvious problem in this regard is that "the tax purpose" of an arrangement can hardly be discerned from its commercial purpose. From the taxpayers' perspective, tax benefits maximize their total net returns, which provides sound commercial reasons for the arrangement (Cooper, 2001). From the policymakers' perspective, as demonstrated above, it is imperative to draw the line between tax planning and tax avoidance behaviour, and the taxpayer's purpose criterion seems ill-suited to achieve this goal (Atkinson, 2012). After all, a number of tax-motivated activities are encouraged and supported by the policymakers, and the widespread use of tax expenditures demonstrates the importance of the so-called regulatory function of taxation (Avi Yonah, 2006). What then defines a tax motivated activity as tax avoidance, to be confronted with a GAAR, is the compatibility of its results (i.e. tax benefits obtained) with the purpose of the pertinent tax law, i.e. underlying tax policy goals (Arnold, 2008; Cooper, 2001). In other words, the constitutive element of a tax avoidance scheme is the abuse of the (tax) law (Ruiz Almendral, 2005), which is recognized in the GAARs of most

countries (Arnold, 2008). A further difficulty in making the application of a GAAR dependent on the taxpayer's purpose lies in the relative weight assigned to other possible purposes of the taxpayer's arrangement. While there is no common standard (Atkinson, 2013), the existence of a significant non-tax purpose usually excludes the application of a GAAR (Cooper, 2001)[4].

If the abovementioned conditions for its application in respect of particular taxpayer's arrangement are satisfied, a GAAR gives to the tax administration the power to cancel or otherwise disallow the tax benefits obtained (Ernst & Young, 2013). Moreover, many GAARs empower the tax administration to reconstruct the arrangement on the basis of the determined economic reality and to impose tax on the basis of the reconstructed arrangement at a later date (Prebble and Prebble, 2010). While it is clear that the conferral of such broad powers on the administrative bodies poses some serious issues of its own (Cooper, 2001), this is an inevitable element of a GAAR. In any case, the policymakers should make sure that other design features of a GAAR are formed in such a way as to provide sufficient guidance for the administrators to apply it correctly. One of the technical solutions that serve this purpose is the setting up of a special advisory body, the so-called GAAR panel, with the task of protecting taxpayers' interests and giving advice to the tax administration (Ernst & Young, 2013).

2.3 GAAR AND THE BALANCE OF POLICY OBJECTIVES: PROBLEM OF LEGAL CERTAINTY

Integrating the standard design features described above, a GAAR is primarily a line-drawing mechanism used for tax avoidance delimitation. In addition, it enables the cancellation of tax benefits obtained via taxpayers' arrangements qualified as avoidance schemes *ex post*, upon the tax authorities' initiative and subject to judiciary review. In this fashion a GAAR can promote the attainment of tax equity and efficiency. Potential effects of a GAAR on equity and efficiency can be analysed in terms of an optimal trade-off between rules and standards in tax law (Weisbach, 2002). Against this backdrop a GAAR can be characterised as an anti-avoidance standard, which – as comprehensively discussed by Weisbach (2002) – reduces the elasticity of taxable income and can enhance the efficiency of the tax system. Moreover, a consequence of increased efficiency is that the redistribution of income becomes cheaper, leading to more progressivity, i.e. to an increase of the vertical equity of the tax system (Weisbach, 2002).

The most emphasised disadvantage of a GAAR is its supposedly negative impact on the values of the rule of law, above all on legal certainty. Legal certainty is not only a paramount rule of law value in modern liberal democracies, but also – in a more narrow tax context – one of the main principles of taxation, endorsed as early as the work of Adam Smith (Tooma, 2008). In general, legal certainty entails

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[4] Using the comparative approach, Arnold (2008) observes that GAARs in different countries employ different tests of taxpayers' purpose, namely "sole or dominant purpose test", "main, primary or principal purpose test" and "one of the main purposes test".

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the commitment of the state to guarantee all individuals the possibility to foresee the legal consequences of their and other social subjects' behaviour (Zolo, 2007). Thus their behaviour should be governed by law, i.e. by legal rules that meet certain criteria, in such a way as to provide adequate guidance (Atkinson, 2012). Applied to taxation, legal certainty requires that the taxpayers are able to determine the tax implications of their activities *ex ante* (Atkinson, 2012).

In this context a standard criticism has been that a GAAR offends the requirement of legal certainty, due to its inability to draw a clear line between tax avoidance and tax planning (Prebble and Prebble, 2010). It is argued that a GAAR cannot provide sufficient guidance to taxpayers in their arrangement of their affairs, while concurrently giving broad discretionary powers to the tax authorities to target numerous taxpayers' activities. As Cooper (2001) notices, however, the argument is rarely developed beyond these general assumptions. Even if one takes the argument as self-evident, there remains the question of whether some alternative solutions to the tax avoidance issue would provide more satisfactory results. One obvious alternative is the increasing reliance on TAARs, more specific and thus more certain rules. TAARs are desirable as a policy weapon against some widespread and well-known avoidance schemes – transfer pricing inevitably springs to mind – but they are not a feasible long-term solution (Cooper, 2001). Taxpayers and their advisors can circumvent a TAAR more easily and as policymakers try to plug an identified statutory loophole with yet another TAAR, a vicious circle of increasing complexity in the tax law is created (Thurony, 2003), which only produces more uncertainty (Freedman, 2004). Furthermore, it is argued that the very fact that policymakers opt for the introduction of a GAAR indicates their awareness of the inherent unpredictability of taxpayers' avoidance structures (Prebble and Prebble, 2010).

Criticism of a GAAR founded on the "certainty argument" may be considered misguided from two aspects. Firstly, certainty is neither the primary aim of nor a yardstick for a GAAR (Freedman, 2004). There are other policy objectives (e.g., equity, efficiency, revenue recovery) it aims to achieve and which need be used in its evaluation. In order to effectively achieve these objectives a GAAR must necessarily be constructed vaguely, at least to some extent (Prebble and Prebble, 2010). Secondly, legal certainty is not the sole virtue that must be respected by the tax policymakers. In fact, it is in direct conflict with the requirements of equity and efficiency (Zimmer, 2002). Thus the true challenge for the policymakers is to find the appropriate balance between these competing objectives, providing appropriate guidance for the taxpayers' behaviour on the one hand and the tax administration with an effective tool to restrain manifold avoidance schemes on the other.

Regardless of the stated inappropriateness of using legal certainty as a benchmark for evaluating a GAAR, some authors have challenged the standard claim that the introduction of a GAAR reduces certainty. The starting point of the counterargu-

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ment is Ronald Dworkin's (1978) theory about the dichotomy between rules and principles. Against this backdrop, Avery Jones (1996) and Braithwhite (2002) have advocated the use of more general principles instead of specific rules in the anti-avoidance legislation. Principles are useful in determining what the rule means, i.e. in the interpretation of tax law (Avery Jones, 1996), and the combination of principles – such as a GAAR – and specific rules helps to build an integrated system of tax law, thus promoting a greater certainty (Braithwhite, 2002). Freedman (2004) has further developed the argument for using a GAAR as a general tax law principle, with the aim of providing a sensible regulatory framework in deciding which behaviour is acceptable and which is not. This argument, stemming from legal philosophy, can be reconciled with the economic analysis of the effects of general standards and specific rules, which provides the starting basis for Weisbach's (2002) above-mentioned analysis of anti-avoidance doctrines' efficiency.

3 ANTI-AVOIDANCE POLICY IN THE EU CONTEXT

For countries that are member states of the EU policing tax avoidance has an extra dimension (Prebble and Prebble, 2008). Namely, the requirements of the EU law, i.e. that special body of law stemming from the international treaties signed by the EU member states, must be observed in the design of national anti-avoidance policy. It should first be emphasised that – due to the lack of competence conferred by the member states on the EU institutions in this area – at the moment there are no EU taxes and there is no genuine EU tax policy (Terra and Wattel, 2012). On the other hand, principle of the supremacy of EU law over member states' national legislation puts significant restrictions on the national tax policy-makers (Pistone, 2008).

This adds yet another layer of complexity in the anti-avoidance area. A comparative overview of EU member states' anti-avoidance legislation confirms the well-established view that the approach to tax avoidance is unique in every country (Edgar, 2008), and reveals that no general European-wide principles may be extracted from the national level (De Monès et al., 2010). In contrast, the requirements of EU law have a harmonizing effect, by setting the limitations national anti-avoidance rules need to be aligned with. Naturally, the limitations apply only if a transaction or an arrangement is carried out in the EU context, i.e. is covered by the provisions of EU law. The Court of Justice of the European Union (CJEU), the only institution competent for the interpretation of EU law, has in numerous cases decided on the compatibility of national anti-avoidance rules and EU law, resulting in the development of an implicit concept of tax avoidance applicable in the EU context (Weber, 2005).

3.1 DELIMITATION OF TAX AVOIDANCE IN THE CASE-LAW OF THE COURT OF JUSTICE OF THE EUROPEAN UNION

The CJEU's reasoning in "tax avoidance cases" is derived from the prohibition of the abuse of law, a newly recognized general principle of EU law. Put simply,

taxpayers cannot rely on the provisions of EU law if their behaviour constitutes abuse of the pertinent law. As the CJEU recognized very early the acceptability of tax planning activities that entail the use of EU internal market benefits (Schön, 2008), the line had to be drawn between abusive practices, i.e. tax avoidance behaviour and legitimate tax planning. Two landmark decisions of the CJEU serve this purpose.

Decision in the *Halifax* case (CJEU, 2006a) showed clearly that two elements constitute abusive behaviour. Firstly, the transactions gave rise to a tax advantage contrary to the purpose of pertinent rules of EU law (the "objective element"). Secondly, the essential aim of the transactions was to obtain a tax advantage (the "subjective element"). Since the *Halifax* case was about the abuse of provisions of the EU VAT Directive, the question lingered whether the same or similar test could be applied in the tax areas largely unharmonised at the EU level, such as direct taxes. The *Cadbury Schweppes* decision (CJEU 2006b) plays a key role in this regard. In that case the compatibility of national anti-avoidance rules (namely, CFC rules) with the EU freedom of establishment was tested. The CJEU made it clear that market freedoms can be restricted using the tax avoidance argument only in cases of "wholly artificial arrangements". The CJEU planted the seed for the development of this influential doctrine as early as 1998 in its *ICI* decision (Schön, 2013). After *Cadbury Schweppes* it became clear that a two-pronged test needs to be used in defining wholly artificial arrangements (Lampreave, 2012). The test is very similar to that applied in *Halifax*. The subjective prong consists of the analysis of the taxpayer's purpose, with special emphasis on the search for valid business purpose of the arrangement, other than the acquisition of the tax benefit. The objective prong involves the analysis of the economic reality of the arrangement, where the lack of economic substance exposes the artificiality of the arrangement.

Subsequent case law of the CJEU seems to confirm the view – subject to some ambiguities – that a single anti-abuse theory underlies decisions in *Halifax* and *Cadbury Schweppes* cases (Jimenez, 2012). From the tax policy perspective, it is essential to note that the CJEU's approach in tax avoidance cases shares features remarkably similar to those found in statutory GAARs. More specifically, the decisive criteria CJEU uses in delimiting the notion of tax avoidance are: (1) the purpose of the EU law relied upon by the economic operator (objective element), (2) the intent of the economic operator to obtain tax benefits via abuse of the pertinent EU law (subjective element), and (3) the relative weight assigned to the "tax saving intent" and to other, commercial (business) aims of the transaction(s) concerned. Hence it is argued that the CJEU has developed a fully-fledged GAAR applicable in the EU context (Sinfield, 2011). While hitherto the compatibility of member states' GAARs with the "EU GAAR" has not been tested before the CJEU, there is abundant case law concerning various national TAARs (Ruiz Almendral, 2013), confirming the view that national anti-avoidance rules need to follow the boundaries laid down by the EU law. This "negative integration" of

member states' tax systems[5] is problematic from the tax policy standpoint, since CJEU is not an institution whose task is to model tax policy (Dahlberg, 2007).

3.2 MOVING TOWARDS UNIFORM STATUTORY GAAR IN THE EU: COMMISSION'S RECOMMENDATION ON AGGRESSIVE TAX PLANNING

In December 2012 European Commission (EC) issued the Recommendation on Aggressive Tax Planning, a non-binding act addressed to the EU member states, sketching the outline of a harmonized EU approach to the most aggressive types of tax avoidance behaviour. One of its most ambitious points is the proposal for the adoption of a uniform GAAR in all member states, to be applied equally in purely domestic, intra-EU and third-country situations (Lyons, 2013). The wording of the proposed GAAR is based on the anti-avoidance case law of the CJEU. The "wholly artificial arrangements" doctrine, as delineated in *Cadbury Schweppes*, is of particular influence, as the application of the proposed GAAR is restricted only to artificial arrangements – i.e. arrangements lacking commercial substance – or artificial series of arrangements, set up with the essential purpose of tax avoidance and leading to tax benefit (EC, 2012). The Recommendation also contains an exemplary, non-exhaustive list of arrangements lacking commercial substance, and provides definitions of other terms used in the wording of the proposed GAAR; namely, definitions of "an arrangement", "essential purpose of tax avoidance" and "tax benefit" are contained. When all of the conditions for the application of the proposed GAAR are met, tax authorities are to treat artificial arrangements by reference to their economic substance, i.e. they are granted the power of re-characterisation.

It is apparent that the EC is well aware of the shortages of negative integration approach in the tax avoidance area. Legal certainty and competitiveness in the internal market can be truly enhanced only via positive integration, i.e. via codification of harmonized rules at the EU level (Sinfield, 2011). In this context, EU institutions' lack of competence in regulating tax matters poses a familiar obstacle. On the other hand, "soft law" mechanisms, such as the abovementioned EC Recommendation, could have a higher chance of success in a changed economic environment. The latest economic crisis and ensuing EU sovereign debt crisis has demonstrated that the flaws of member states' national tax systems may become an EU-wide problem. Member states seeking financial assistance from the EU institutions have been faced with obligations relating to the improvement of tax potential through higher compliance levels, including a more serious approach to tax evasion and tax avoidance (Lyons, 2013). This is best evidenced by the tax reforms in Greece – a country that epitomises the Eurozone crisis – of 2013. Among other measures aimed at combating tax non-compliance, a GAAR has been introduced in the Greek tax system for the first time (Stathis, 2014). The wording of the new rule – effective as of January 1st 2014 – is overwhelmingly

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[5] About the dichotomy between positive and negative integration of EU member states' tax systems see Terra and Wattel, 2012, pp. 36-39.

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reminiscent of the uniform EU GAAR proposed by the EC, with the existence of artificial arrangements being the main condition for its application.

3.3 GAARS IN SELECTED CRISIS-STRICKEN EU MEMBER STATES

A number of EU member states have opted for the introduction of a GAAR as an instrument to curb tax avoidance some time before the full development of an EU GAAR in CJEU case law. Some of these countries have since been deeply affected by the economic crisis, entailing the necessity of tax policy reconsiderations. The depiction of different GAARs introduced in Spain, Italy and Portugal can provide useful insights for tax policymakers in Croatia, a new EU member state with a similar legal tradition and comparable levels of factors influencing tax compliance, e.g. tax morale (McGee and Tyler, 2006). All three countries under consideration introduced a GAAR in their tax system long before the beginning of the crisis in 2008, with the aim of achieving an equitable allocation of the tax burden and increasing the collection of tax revenues. While Italy has developed a strong judicial GAAR accompanied by statutory TAARs, Spain and Portugal have introduced a statutory GAAR. A strong influence of the EU law – and the CJEU anti-avoidance approach in particular – is notable in all three countries. Even in areas not harmonised with EU legislation – such as direct taxation – many features have been subject to judicial assessment and therefore indirectly harmonized (Ruiz Almendral, 2005).

The Spanish tax system contains a GAAR, applicable in cases of conflicts in the application of tax rules, and TAARs, intended to prevent specific transactions or application of different tax treatments sought by the parties (Clifford Chance, 2013). As the previous provision was hardly ever used during forty years, a new GAAR was enacted by the General Tax Code of 2003 – replacing previous GAARs which have been in use since 1963 – with the aim of revitalising its use by the tax administration and the courts by defining tax avoidance in a clearer manner (Ruiz Almendral, 2005). A "conflict in the application of tax rules" – a term that actually denotes tax avoidance (Soler Roch, 2004) – arises where: (1) the taxpayer avoids the taxable event or reduces the taxable basis or tax payable through transaction which is highly artificial or not typical for the achievement of the result obtained, or (2) the transaction achieves material legal or economic effects or benefits that differ from those that would have resulted from a non-artificial transaction.

The application of a GAAR requires the Spanish tax authorities to make it evident that an abuse of law has occurred. This is achieved via comparison of the taxpayer's behaviour with the intention of verifying whether the businesses or transactions are genuine or artificial. The Spanish General Tax Code sets out an administrative requirement for the GAAR's application. A special report on tax abuse – which is binding on the tax auditor (De Monès et al., 2010) – needs to be issued by the special advisory committee comprising two representatives from the central government and two representatives of the acting tax administration. The taxpayer is given 15 days to present a case, and the committee then issues its findings

(Tooma, 2008). The Spanish tax authorities and courts apply tax law in broad terms, instead of specifically applying GAAR. In cases of applying provisions on GAAR, tax authorities are required to produce a report justifying the application of GAAR to the transaction. The consequence of application of GAAR to a conflict in the application of tax regulations is the elimination of tax benefits and the charging of interest for late payment. In case of shams, penalties may apply too. From the tax policy perspective, tendencies in Spain favour reliance on an increased number of TAARs rather than a broad use of the GAAR (Clifford Chance, 2013).

There are two main anti-avoidance tools in Italian legislation. Alongside various TAARs, a rule introduced in 1997 (Article 37bis of the Decree No. 600/1973) allows the tax authorities to disregard transactions lacking a valid economic purpose, aimed at circumventing obligations or providing undue tax reductions (De Monès et al., 2010). This rule is widely applied, but in fact is not a GAAR since it is limited to the specific list of transactions. Hence, it can be concluded that it falls between a GAAR and a TAAR. Through strict implementation of the principle of legality and through broadening the scope of rule contained in Art. 37bis, Italian case law has evolved as if it contained a GAAR. Since 2005 Italian courts have taken a flexible anti-avoidance approach, allowing the tax authorities to declare tax benefits derived from certain transactions ineffective. The Italian Supreme Court played the crucial role, asserting that the absence of explicit anti-avoidance provisions does not prevent tax authorities or the courts declaring taxpayers' transactions void and collecting taxes, based upon the application of civil law doctrines such as the doctrine of abuse of law (Cordeiro Guerra and Mastellone, 2009). This new development – amounting to the creation of a GAAR by the judiciary – is defended by the Supreme Court on the grounds of the ability to pay principle, enshrined in Article 53 of the Italian Constitution (Garbarino, 2012), but is also influenced by the anti-abuse doctrine of the CJEU (Soler Roch, 2012).

Consequently, Italian tax authorities are now more open to applying the rule contained in Art. 37bis or the more general abuse of law principle in their efforts to curb tax avoidance schemes (Ernst & Young, 2013). A transaction is considered abusive if it is aimed at avoiding taxes, if any tax benefit or saving is a dominant reason for carrying it out or if there are no clear economic reasons for entering it. In practice, GAAR is mostly used in cases of misapplication of tax provisions in transactions which are not fraudulent, but aimed at obtaining a tax benefit. The burden of proof falls on the Italian tax authorities, i.e. they have to demonstrate the tax advantage derived from the transaction and the elements proving that it is abusive. In contrast, taxpayers may provide clear and significant business reasons to justify the transaction. In case of re-characterization of an abusive transaction by the tax authorities, tax rates that would have been applied had the abusive transaction not been entered into will be applied. According to the Supreme Court, penalties or criminal sanctions are not applicable to transactions deemed as abusive (Clifford Chance, 2013).

The Portuguese GAAR sets out that any transaction implemented by artificial or fraudulent means or by abusing legal forms and wholly or mainly aimed at reducing, avoiding or postponing taxes that would be payable as result of transactions with the same economic purpose or to obtain tax advantages that would not be achieved without the use of these means, is ineffective for tax purposes. Taxation should proceed in accordance with the rules that would have applied in their absence. The tax advantages intended to be achieved by this transaction may not arise (Santiago, Salema and Carvalho Nunes, 2011). This rule was introduced in the Portuguese legal system in 1999, under influence of other European countries, along with the introduction of TAARs, e.g. on transfer pricing and thin capitalization. Although the GAAR had not been applied for over a decade, the number of cases where it was applied recently considerably increased. The aim of these rules was to guarantee compliance with the principles of equality in financing public expenditures. The GAAR has proven to be difficult to apply as the burden of proof falls on the tax authorities, thus weakening the preventative character of the rule. The tax authorities have instead mostly applied TAARs, where the burden of proof falls upon the taxpayer (Fernandes Ferreira, Respício Gonçalves and Bordalo e Sá, 2011).

4 ANTI-AVOIDANCE POLICY IN CROATIA: A PROPOSAL

During the transition era of the 1990s a new tax system suitable for the market-oriented economy had to be created in Croatia (Arbutina et al., 2014). Therefore, it is not surprising that tax evasion was perceived as a more important tax policy issue than tax avoidance. Over the years various interventions in the tax statutes have been made with the aim of curbing some recognised tax avoidance techniques. The importance of legislative instruments in this area should be emphasized, as Croatia has both a civil law legal system with strong adherence to the constitutional principle of legality and a long tradition of the literal interpretation of the law by the courts (Aviani and Đerđa, 2012). Against this backdrop, the dynamics of changes to the anti-avoidance legislative framework reveal that Croatia lacks a coherent anti-avoidance policy (Prebble, 2005). In comparison to other countries, the Croatian approach to this important tax policy issue is both under-developed and fragmented.

4.1 EXISTING ANTI-AVOIDANCE LEGISLATIVE FRAMEWORK IN CROATIA

The obligation to pay taxes in Croatia, as in other countries, stems from the constitutional principle of ability to pay. Namely, Article 51 of the Constitution lays it down that every person should participate in the defrayment of public expenses in accordance with his or her economic capacity. The Constitution further stipulates that the tax system should be based upon the principles of equality and equity, establishing the paramount objectives of Croatian tax policy. These constitutional principles are reflected in manifold statutory provisions. For example, Art. 9 of the General Tax Act (GTA) obliges the parties of the tax relationship to act in good faith, i.e. to conduct themselves conscientiously and fairly in accordance with the

law. Tax avoidance behaviour undermines the attainment of both dimensions of equity. Horizontal equity is endangered since the share of the tax burden borne by two taxpayers with equal economic faculty differs depending on their usage of tax planning schemes. Vertical equity is endangered since tax avoidance schemes – particularly the most notorious corporate tax shelters revolving around international tax arbitrage – are largely a privilege of high income earners, lowering the effective tax system's progressivity. Consequently, anti-avoidance legislative instruments in Croatia – including a GAAR – can be justified by this constitutional principle, which is similar to the approach taken by the judiciary in Italy (see section 3.3).

Croatian tax legislation does not contain a GAAR (Rogić Lugarić and Bogovac, 2012). However, certain provisions which follow the same underlying objectives as a GAAR – even if lacking its breadth – can be found. Of special importance is the provision found in Art. 10(1) GTA, effectively codifying the substance-over-form principle in the process of determining tax facts. This provision – labelled "the economic approach principle"– sets out that "(T)ax facts shall be determined according to their economic essence". Additionally, Art 10(2) GTA provides that "(I)f the revenue, income, profit or other assessable benefit was acquired without a legal basis, the tax authority shall determine the tax liability in accordance with a special law regulating certain types of taxes". The implementation of this principle allows the tax administration to tax profit acquired even by a criminal act, with the basic idea of taxing the underlying economic substance, while the general character of a legal action that led to the profit is irrelevant for tax law (Rogić Lugarić and Bogovac, 2012). Hence, some consider it to be a potentially powerful anti-avoidance rule, comparable to a GAAR (KPMG, 2013). However, even though their intent corresponds to that of a GAAR, these provisions are extremely vague and do not provide further instructions for application to the tax authorities. Therefore, it is not surprising that – while the provisions on the economic approach principle have been in force since 2001 – their anti-avoidance potential has hitherto not been recognized by the tax authorities.

By similar token, an anti-avoidance rule aimed at preventing the abuse of legal form, i.e. codification of the sham doctrine, is found in Art. 11 GTA: "If a sham transaction conceals another legal transaction, the basis of the assessment of tax liability shall be that concealed legal transaction." On the basis of this provision tax authorities can requalify the transaction and neglect the form contracting parties have chosen for the transaction. The transaction will therefore be considered to have been concluded in the legal form which corresponds with the real intention of contracting parties (Šimović et al., 2010). While it is contended that this provision is seldom applied by the tax authorities, some authors argue that it should gain more importance in the future, especially with regards to transactions that involve real estate purchases via business shares sales (Kapetanović, 2010; Prebble and Prebble, 2008).

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Additionally, various TAARs can be found in Croatian tax legislation, mostly related to corporate income taxation. For instance, a rule targeted at thin capitalization as well as a rule setting a higher rate of withholding tax on certain payments made to residents of expressly listed tax haven countries are contained in the Corporate Income Tax Act (CITA). From the tax policy perspective it is very interesting that some of the most controversial changes of tax legislation of late – including the new TAARs – seemingly reflected the awareness that tax avoidance needs to be restrained. Yet, no one single theory underlying the anti-avoidance approach in tax legislation can be identified.

The abuse of law doctrine – deeply rooted in Croatian civil law – was used to justify the GTA amendments of 2012, laying down a special procedure for "piercing the corporate veil" in tax matters (Žunić Kovačević and Gadžo, 2013). The amendments provoked intense reactions of the business community as shareholders, board members and executive directors of a company – as well as persons associated with them – can be declared to be liable for a company's tax debt by the tax authorities, under condition that the abuse of rights or power leading to company's inability to pay the tax debt is established. On the other hand, one distinctive TAAR was included in the CITA amendments of 2012 that introduced a tax benefit for reinvestment of company profits. Namely, the corporate income tax base can be reduced by the amount of company's capital increase made for investment and development purposes. From the outset, policymakers have recognized the tax avoidance potential of this benefit (Jozipović, 2013) and introduced a TAAR, which stipulates that the entitlement to reduce the corporate income tax will not be granted if it is obvious that the intention of the company's capital increase was tax evasion or tax avoidance. Examination of taxpayer's purpose as a condition for the application of anti-avoidance rule is what makes this specific TAAR similar to GAARs found in other tax systems.

The wording of the abovementioned TAAR is to some extent comparable to that of the TAARs applicable in the context of three EU direct tax directives. The provisions of the Merger Directive (European Council, 1990a, hereinafter: MD), Parent-Subsidiary Directive (European Council, 1990b, hereinafter: PSD) and Interest-Royalties Directive (European Council, 2003, hereinafter: IRD) were implemented in Croatian legislation – mostly in CITA and in the Ordinance on Corporate Income Taxation – during the process of accession to the EU. It appears that the Croatian legislator opted for a uniform anti-avoidance approach in the tax directives context, even if the wording of different TAARs is not identical. Consequently, the benefits of the MD, PSD and IRD are to be denied if the principal purpose or one of the principal purposes of the pertinent transaction/arrangement is tax evasion or tax avoidance. It can be concluded that the harmonization of Croatian tax law with the EU law requirements brought about some important changes to the approach in the design of anti-avoidance legislation. More specifically, the taxpayer's purpose as the subjective element of the transaction – previously not acknowledged in the delimitation of tax avoidance – is now a recognized

constitutive element of tax avoidance, albeit in a limited number of TAARs. The indubitable influence of the EU law on the Croatian anti-avoidance law provides a point of departure for future policy choices in this area.

4.2 PROPOSAL FOR THE INTRODUCTION OF THE "EU GAAR" IN CROATIA: PRINCIPLE OF LEGAL CERTAINTY AS A STARTING POINT

The preceding overview of Croatian anti-avoidance legislation may lead to the conclusion that the introduction of a GAAR was considered to be unnecessary by the policymakers and the policy choice was to rely on TAARs as key anti-avoidance tools. In our view this would be misleading. A more detailed analysis of legislative dynamics in this area reveals that Croatian tax policymakers do not have a coherent anti-avoidance approach. What is particularly worrying is the absence of uniform criteria used in the all-important line-drawing process, i.e. in delimiting the tax avoidance notion (see section 2.2). As demonstrated above, in some cases – e.g. during application of the GTA provisions on sham transactions and in "piercing the corporate veil" cases – the abuse of law or abuse of rights by the taxpayer is the defining element of tax avoidance. Here the purpose of the taxpayer's transaction/arrangement – be it a tax-saving or any other commercially justified purpose – is rendered unimportant. In other cases – e.g. when applying TAAR concerned with the tax benefit for reinvested profits or TAARs implementing the provisions of EU direct tax directives – the taxpayer's purpose is the essential element.

As described above (see section 3.1) the CJEU considers both the objective criteria, i.e. abuse of pertinent law, and the subjective criteria, i.e. taxpayer's purpose, as constitutive elements of tax avoidance. Therefore, the reconciliation of differing criteria in delimiting tax avoidance in Croatia is possible if viewed in the light of EU law requirements. In fact, Croatian tax authorities and courts are already obliged to adhere to the CJEU's notion of tax avoidance whenever applying national anti-avoidance rules on transactions/arrangements that are covered by the provisions of EU law. More leeway is allowed only with regards to strictly national and third-country (non-EU member states) situations.

That is where failures of delineating tax avoidance notion in a clear and consistent way could have serious consequences. For example, it is very unclear how the Croatian tax authorities will determine tax avoidance intent with regards to the tax benefit for reinvested profits, as no further instructions for the application of this TAAR were given in tax legislation or in the tax authorities' non-binding opinions. Furthermore, the role of the abuse of law principle in future developments of anti-avoidance legislation remains uncertain. Will the policymakers rely on this principle in introducing new anti-avoidance rules, following the pattern of the provisions on piercing the corporate veil in tax matters? In this context the utter absence of debate between the stakeholders – including the Ministry of Finance, which is the key player in the development of Croatian tax policy (Arbutina et al., 2014) – about the desired anti-avoidance approach, e.g. about the GAAR – TAARs

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dilemma, also needs to be stressed. It follows that the taxpayers in Croatia are not able to determine the tax implications of their activities in advance, i.e. that the requirements of legal certainty have not been met (see section 2.3). This is confirmed by the findings of one recent study, stressing that the defects of legal certainty in tax matters are perceived in the Croatian business community as the main tax obstacle to inbound foreign investments (Rogić Lugarić and Bogovac, 2012). In our view the Croatian tax system provides a perfect example how the introduction of a GAAR can actually enhance legal certainty, contrary to the standard argument that a GAAR defeats this rule of law value. Frequent changes in the anti-avoidance legislation – primarily the introduction of the new TAARs – mirror the general problem of the Croatian tax system ever since its comprehensive reform in 1994: the instability of the legislative framework (Bejaković, 2009; Žunić Kovačević, 2012). As the line between acceptable tax planning and unacceptable tax avoidance has not been properly drawn – either in the tax statutes or by the judiciary – the anti-avoidance policy in Croatia has hitherto worked to the detriment of legal certainty. A GAAR – even if inherently vague to some extent – can draw this missing line in a meaningful way, providing appropriate guidelines to the tax authorities and courts, which traditionally rely on the literal interpretation of the law, overlooking the underlying policy objectives. An analysis of the implications of the reformed GAAR in Spain – a country with a comparable legal tradition and a similar attitude of courts to tax law interpretation – is in line with these conclusions (Ruiz Almendral, 2005).

It must be noted that the design features of a GAAR are decisive for the evaluation of its potential influence on legal certainty. Against this backdrop, we share the view that a Croatian GAAR should be modelled after the proposal made by the European Commission in 2012 (see section 3.2). As examined above, some anti-avoidance provisions that are already in place in Croatian tax system share certain common features with the proposed EU GAAR. But the main advantage of introducing the EU GAAR – observed through the lens of legal certainty – is that that its wording – based upon the EU law as interpreted by the CJEU – provides very detailed guidelines on the delimitation of tax avoidance behaviour to the tax authorities, courts and the taxpayers themselves. Likewise, the CJEU can be relied upon to clarify the inevitable ambiguities that will appear in the future practice (Clifford Chance, 2013). Moreover, legal certainty could be enhanced via some instruments accompanying a GAAR. The establishment of a specialized GAAR panel (for the Spanish model see section 3.3), introduction of advance rulings issued by the tax authorities on the taxpayer's request (Žunić Kovačević, 2013) and a broader use of the tax authorities' public opinions clarifying the practices in the GAAR application could serve this purpose.

The EU GAAR in Croatian tax system should be underpinned by TAARs – some already in force – addressing some distinctive tax avoidance techniques, but reflecting the same general concept of tax avoidance as defined by a GAAR. Whenever a TAAR is applicable, the tax authorities should not have the option of invok-

ing a GAAR – in line with the *lex specialis* doctrine – thus enhancing legal certainty. Usage of a GAAR as a last resort is also confirmed in comparative surveys (Clifford Chance, 2013). Another legislative instrument worth considering in the future development of coherent anti-avoidance policy in Croatia is the introduction of rules requiring that taxpayers disclose the usage of specific tax shelters to the tax authorities; this has proved to be efficacious in the USA (Kaye, 2012).

4.3 PROSPECTS OF "EU GAAR" IN THE ATTAINMENT OF OTHER POLICY OBJECTIVES

It has been argued above that anti-avoidance tax policy is about finding the right balance in attaining multiple objectives (see section 2.3). Hence, legal certainty is not the only objective policymakers ought to be concerned with when deciding on the introduction of a GAAR. The principle of tax equity – as stipulated by the Constitution – is the paramount objective of Croatian tax policy. As tax avoidance behaviour undermines the attainment of equity – as well as inflicting economically wasteful social costs – the development of a coherent anti-avoidance approach needs to rank high on the Croatian tax policymakers' agenda.

While the above analysis points out the inadequacies of the existing anti-avoidance legislative framework, there is a lack of empirical evidence on the actual extent of tax avoidance in Croatia, which could provide an impetus for reforms. On the other hand, some conclusions can be inferred by analysing the factors commonly associated with tax evasion and avoidance (International Tax Compact, 2010). It seems that most of these factors – e.g. low tax morale, a large informal sector of economy, high corruption, frequent changes of tax legislation, etc. – are present in Croatia. Moreover, the nature and the extent of tax expenditures in Croatian tax system – necessarily leading to avoidance opportunities (Tyson, 2014) – opens wide scope for abusive taxpayer behaviour. Admittedly, this has been recognized by the policymakers at least to some extent, as shown by some of the more recent changes in the tax legislation. For example, the introduction of the provisions on tax benefit provided for the reinvestment of corporate profits was accompanied by a special anti-avoidance rule. Moreover, other measures aimed against tax non-compliance were also introduced, e.g. establishment of the special tax administration unit focusing on large taxpayers, relaxation of tax secrecy provisions allowing the publication of tax debtors' blacklists, etc. While this clearly reflects a tax-gap narrowing policy, it was most likely motivated by the objectives much more mundane than the objectives of tax equity and tax efficiency.

More specifically, tax reforms in Croatia ever since the outbreak of the latest economic crisis – which is showing no signs of waning – were driven by the ensuing pressures of fiscal consolidation (Arbutina et al., 2014). Very soon after its accession to the EU, Croatia – failing to meet the fiscal targets set out in the EU legislation – entered the excessive deficit procedure (EDP), with its public finances placed under monitoring by the EU institutions. Whereas there seems to be an

agreement in the tax community that there is no space for the further increase of the overall tax burden – especially considering the heavy tax burden on consumption and labour – the potential fiscal effects of the policy aimed at enhancing tax compliance have been largely overlooked. Experiences of other crisis-stricken EU member states (e.g. Greece, Ireland, Portugal, Cyprus) demonstrate that one of the conditions for the EU financial assistance is the development of a strategic approach in fixing structural deficiencies of the national tax system, including the approach to tax compliance (Lyons, 2013). In this context, improvement of anti-avoidance legislation can send a strong signal both to the EU institutions and to the financial markets that Croatia is dedicated to following a fiscally responsible tax gap narrowing policy.

All of the abovementioned policy objectives could be promoted by the introduction of the EU GAAR in Croatian tax legislation, similar to that included in the recent legislative changes in Greece (see section 3.2). Even if this specific GAAR proposed by the EC is criticised by some authors for its lack of flexibility in combating tax avoidance (Faulhaber, 2010), in our view it would still provide a solid foundation for curbing those types of taxpayer activities that are blatantly abusive. Since the tax authorities would be provided with a clear set of guidelines – aligned with CJEU case law – on the GAAR's application, there would be no justification for shying away from invoking this rule in practice and relying solely on its deterrent effect. Tax authorities' power to tax pertinent transactions/arrangements with regards to their economic substance clearly promotes the attainment of tax equity and tax efficiency; it safeguards taxation in accordance with the taxpayers' activities which are economically rational, disregarding the complex strokes of an accountant's or a tax lawyer's pen. Additionally, the development of a coherent anti-avoidance framework – with the GAAR as its keystone – can have significant revenue effects, mostly due to its positive influence on the overall tax compliance.

One final policy objective that can be attained by the introduction of EU GAAR in Croatia is its potential for the improvement of tax competitiveness. Its introduction would entail that the same anti-avoidance approach is to be followed by the Croatian tax authorities and courts irrespective of the context – i.e. national, EU or third country context – in which an arrangement is undertaken. In this respect Croatia would have simpler and more attractive anti-avoidance framework than other EU member states countries that have developed complex anti-avoidance strategies over the years (for an Italian example see chapter 3.3). This is a point that deserves special emphasis in times when countries are increasingly relying on their tax systems' features to attract foreign inbound investments. Admittedly, it is very hard to envisage the impact of the changes in the anti-avoidance legislation on the total level of foreign direct investment, since the introduction of a more stringent and potentially uncertain anti-avoidance approach is perceived negatively from the investors' perspective, as evidenced by the highly contested debate on the introduction of a GAAR in India (Devi Ravi, 2012).

5 CONCLUSION

The approach to tax avoidance is currently high on the tax policy agenda throughout the world and is probably here to stay. At least until satisfactory solutions are found for some of the most notorious avoidance schemes that exploit the shortcomings of international tax rules and the lack of cooperation between different tax authorities. In the meantime many countries have opted for the introduction of various legislative instruments with the aim of curbing tax avoidance and protecting their tax base from further erosion. Global trends indicate that GAARs are perceived as keystones of anti-avoidance legislation, particularly in countries where tax authorities and courts traditionally refrain from taking a proactive approach to combating taxpayers' abusive behaviour. While it must be conceded that GAAR is not a ''magic bullet'' for a multifaceted phenomenon like tax avoidance, the necessity for legislative measures aimed at curtailing it cannot be denied (Zimmer, 2002; Tax Law Review Committee, 1997). The main function of a GAAR is that it draws a line between acceptable tax planning and unacceptable tax avoidance, thus having a potential of achieving multiple tax policy objectives.

The analysis presented in this paper shows that Croatia lacks any genuine and coherent anti-avoidance policy. Hitherto the policymakers have not recognized the potential of a GAAR for attaining multiple desired tax policy objectives. We share the view that the time is right for the introduction of a GAAR modelled after the EU GAAR endorsed by the European Commission. Several policy arguments are provided in support of this view. Firstly, promoting legal certainty, along with the constitutional principle of tax equity, should be one of the main objectives of Croatian tax policy in the time to come. Introduction of the EU GAAR in Croatian tax legislation could improve legal certainty, primarily since the copious case law of the CJEU can provide detailed guidelines on the application of a GAAR to all parties of the tax relationship. Additionally, other policy objectives – i.e. tax equity, tax efficiency, revenue collection, tax competitiveness – could also be attained with the suggested legislative changes. A point that deserves special emphasis in the light of the enduring macroeconomic problems in Croatia is the significance of a coherent anti-avoidance framework on the tax gap narrowing policy and hence for the construction of a sustainable public finance system. The experiences of other crisis-stricken EU member states show that the adoption of a GAAR (or its strengthening) is a standard policy choice in this context.

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Efficiency of a single-rate and broad-based VAT system: the case of Bosnia and Herzegovina

DINKA ANTIĆ, PhD*

Dinka ANTIĆ
Governing Board of Indirect Taxation Authority of Bosnia and Herzegovina, Bana Lazarevića bb,
78000 Banjaluka, Bosnia and Herzegovina
e-mail: dinka.antic@uino.gov.ba

Abstract

The aim of this paper is to analyze the performance and efficiency of the VAT system in B&H and explore the effects of internal and external factors influencing VAT collection. The VAT system in B&H is a consumption-type, single-rate and broad-based system. Ever since its implementation, VAT collection in B&H has been subject to strong oscillations, from an extremely high performance in the first two years after the introduction, to a sharp drop at the beginning of the crisis. After a temporary recovery, VAT collection declined in the last quarter of 2012 and has been negative ever since, although a weak recovery of the B&H economy was observed in 2013. The key hypothesis is that the high efficiency of the broad-based and single-rate structured VAT system may be neutralized by the country's specific circumstances and VAT policy design. Applying a set of indicators for VAT efficiency analysis, developed by IMF, OECD and EU, we find a deterioration of the components of the policy gap caused by derogations of the VAT Law, and an increasing compliance gap, due to an increase of the VAT debt and tax evasion, in consequence of poor policy design in the field of excises. As a result of the influence of the country's specific circumstances and its VAT policy design the identifiable current net losses on VAT in 2013 amount to 4% of net VAT collection or 0.4% of GDP. The analysis presented in the paper proves the main hypothesis that a VAT design, even when it is close to theoretically ideal concept, cannot on its own produce a high level of VAT efficiency and performance.

Keywords: value-added tax, VAT efficiency

1 INTRODUCTION

Tax systems are expected to be effective, equitable and easy to administer both for taxpayers and for tax administrations. The rapid global expansion of value added tax (VAT) in over 150 countries is the result of its neutrality in decisions of economic agents, the collection efficiency and easiness in collection for taxpayers and tax administrations (IBFD, 2014). In the tax structures of modern countries, VAT has an important place, and in developing countries, such as Bosnia and Herzegovina (B&H), due to the low level of economic development, it represents a dominant source of budgetary revenues.

B&H relatively recently (2006) introduced VAT as part of a comprehensive reform of the indirect taxation system. The VAT system in B&H is of a consumption type and invoice-credit method. The system is based on the standard rate, a relatively high threshold for registration and an extent of exemptions complying with the Council Directive 2006/112/EC ("Directive"). In addition to strong revenue growth and reduction of the grey economy the introduction of VAT has contributed to the internal market integration and adjustment of fiscal architecture in the direction of the European integration requirements. However, due to the fulfillment of international obligations of the EU and international financial institutions the VAT Law was rapidly weakened by an expansion of the scope of exemptions and the introduction of a zero rate in domestic trade of goods and services, indi-

rectly through VAT refunds on international projects. At the time of implementation of VAT, B&H began the process of liberalization of foreign trade with neighboring countries and the EU, as well as the process of harmonization of excise duties with EU standards. Despite the modest economic growth in the last two years, VAT collection has been burdened by increasing refunds and debts to such extent that 2013 ended with a drop in revenue from VAT of 1.9%.

The paper aims to investigate, through empirical research and comparative analysis of the efficiency of the VAT system in B&H, the influence of special circumstances regarding derogations from the VAT system, the development of the B&H economy and its integration into regional and global processes on deviations on actual payment in relation to the potential effects of a desirable VAT system. A review of relevant literature, international methodologies and analytical tools developed for VAT efficiency analysis is given in part two. Part three shows the basic characteristics of the VAT system in B&H and derogations from it. Part four gives an analysis of trends in revenue collection from VAT for a period of introduction (2006) to the end of 2013. In part five the analysis focuses on the impact of design elements of the VAT system on the efficiency of VAT collection, and in part six on the scale of implications of the most important external reforms and processes on the VAT base and revenue collection. Part seven presents an analysis of the efficiency of the VAT system in B&H, according to international standards of VAT efficiency developed by the OECD, IMF and EU. The research in this paper is aimed at confirming the hypothesis that the expected high efficiency of a VAT system with a wide base and a single rate can nevertheless be reduced or even neutralized by special circumstances, policies and processes related to a particular country.

2 REVIEW OF LITERATURE AND METHODOLOGY
2.1 RELEVANT LITERATURE
Although VAT is considered to be the most successful fiscal innovation in the second half of the 20th century, Bird concludes that in practice not even one VAT system is as good as it could be because the scope of the application (base) is lower, the rate structure is below optimal and the administration is below perfect efficiency (IFS, 2010a). Facing a dilemma between the principle of efficiency (buoyancy) and equity a large number of countries decided for a *trade-off,* to sacrifice the high efficiency of the VAT system with a single rate for the benefit of the potential redistributive effects of a VAT system with more rates. According to the OECD (2010) the introduction of differentiated VAT rates in developing countries could be justified for redistributive reasons, since developing countries have fewer budgetary instruments for targeted transfers. However, on the other hand, tax administrations in these countries do not have sufficient capacity effectively to administer multiple rates or to fight the frauds that may arise.

The Copenhagen Economics study (2007) on the functioning of the VAT system in the EU member states has shown that due to the system of differentiated rates

the total system in the EU suffers from large fiscal and economic losses. The study recommends a VAT model with a single VAT rate as far the best policy option of VAT taxation from an economic point of view that could provide significant compliance savings to companies and tax administrations, reduce deviations in the functioning of the internal market and enhance consumers' welfare. Empirical studies of the IMF (2010), Crawford, Keen and Smith (IFS, 2010a) and IFS (2011) showed that differentiated rates in developed and emerging economies are an inefficient means of redistributing income to the poor, since the rich in an absolute amounts spend more on items taxed at lower rates than the poor. The IFS study on the design of the tax system in Great Britain concludes that benefits of the VAT system with a single rate in terms of easy administration outweigh the possible benefits of differentiated rates. The study recommends the removal of zero and reduced rates and, if possible, exemptions, with the introduction of a comprehensive package to compensate for the poorer members of society (2010b).

Strategic documents of the EU produced in order to create an appropriate environment for business, point to the need to ensure the neutrality of VAT, spread the base (reducing derogations, exemptions and scope of reduced rates), simplify administration and reduce compliance costs (EC, 2010a). Not only do exemptions undermine the logic of VAT (IMF, 2010) but Crawford, Keen and Smith (IFS, 2010a) stress that they create inefficiencies of an unknown magnitude. Strategic documents on the development of the VAT system in the EU, starting with the negative consequences of exemptions on VAT system neutrality, decisions on investments and consumption (EU, 2010b), indicate the need to revise the rules of exemptions and narrow their scope. However, although VAT collection in member states is far below what could be achieved if the standard rate were applied across the board, because of the existing exemptions, zero and reduced rates, recent analyses have shown that the majority of member states decided to increase the standard rate, while only five of them have adopted measures to spread the VAT base (Garnier, 2013). The results of one survey (CASE, 2013) suggest there is an increasing gap between potential VAT revenues and collected revenues in relation to the findings from the Reckon study (2009). It can be concluded that the current policy of increasing the standard rate of VAT in the EU member states, without expansion of the base, and with the existing rate structure, would jeopardize the efficiency of VAT collection in the EU. On the other hand, an increase in the standard rate, according to the IMF's research (2013), has not been used in any country for strategic tax shifting from labor and profit taxation to taxation on consumption, property and green taxes, in order to achieve a desirable long-term, growthfriendly tax structure, not even for short-term fiscal devaluation, in terms of revenue neutral transfer of the tax burden from labor taxation to consumption taxation, as suggested by Mooij and Keen (2012). Instead of providing a stimulus to spending and economic activity, high standard rates and the current scale of rates have acted pro-cyclical, deepening distortions in the market and slowing down the coming out of the crisis. Directions in tax reforms in the EU confirm the conclusion made by Crawford, Keen and Smith that it is political will that is primarily

needed for a restructuring of the VAT system, for least recognizing the unfairness and wastefulness of the existing rate structure (IFS, 2010a).

Analyzing trends in evolution of the VAT system in the EU Member States, Bird considers that the current VAT model, which is called a "first generation" model, should be transformed into a "second generation" model, modeled on the comprehensive taxation of consumption in New Zealand or Australia (IFS, 2010a). Bird noted that even in these countries there is also a possibility for further customization of the VAT model and rate structure in the direction of achieving the ideal model of the "third generation".

2.2 REVIEW OF METHODOLOGY USED FOR VAT EFFICIENCY ANALYSIS

Comparative international evidence suggests the conclusion that a transition from a sales tax to the VAT system produced a strong increase of revenue worldwide. According to IMF research, the immediate effects of VAT introduction on revenues by regions amounted, on average, to 1.1 % of GDP (Ebrill, 2001), but in the long run VAT adoption increased the tax burden (revenue-to-GDP ratio) by 4.5% (Keen and Lockwood, 2007). Evidence from neighboring countries confirms the IMF's conclusion. According to the data from the Ministry of Finance in the first year of VAT introduction Croatia collected even 47.6% more VAT and lagging sales tax than in the previous year, or 30% more than projected (Jelčić and Bejaković, 2012). However, after the introduction of the zero rate on foodstuffs in Croatia, VAT collection declined by 10%. Similarly, a moderate increase of VAT revenues of 5.9% in Serbia illustrated the negative influence of reduced rates on initial VAT effects. VAT collection is affected not only by the rates but by a number of other factors. Some of them are related to the VAT system while the others are of an external character. The OECD (2012) classifies factors that affect the efficiency of VAT collection into five categories: (1) structural characteristics, (2) the evolution of consumption, (3) the taxation rules in international trade, (4) the capacity of the tax administration, and (5) tax discipline of taxpayers. Structural factors include basic elements of VAT design: rates, exemptions, the base and threshold for VAT registration. Keen (2013) believes that the main factors affecting revenue collection from VAT are: (1) the standard rate, (2) efficiency, measured by C-efficiency ratio, and (3) the share of consumption in GDP. It is very difficult to give a general assessment of VAT system efficiency in a country. Despite the common principles of taxation of goods and services and invoice-credit methods, systems of VAT in different countries differ from each other, starting from the structure of rates, basis, refund rules and other elements of VAT system design. For this reason Keen is of the opinion that more reliable estimates of VAT efficiency in a country can be gained by analyzing the movement of indicators of VAT efficiency over a longer period.

Influenced by the global expansion of VAT in the last two decades and under researches of the OECD, IMF and EU, several criteria for evaluating the efficiency of the VAT system have been developed, such as the efficiency ratio, which is also

known as VAT productivity ratio (Ebrill et al., 2001), and the VAT revenue ratio (VRR), which is called by the IMF the C-efficiency ratio.

The efficiency ratio (productivity) of VAT is calculated by dividing revenues actually collected from VAT and potential revenues obtained by applying the standard VAT rate on GDP. Although it has been used for many years as a comprehensive measure of efficiency, the reliability of the efficiency ratio is not high mainly due to errors in the measurement of GDP, as a result of excluding non-observed activities in the calculation of GDP. The reliability of GDP, and thus all indicators that rely on GDP, is inversely proportional to the degree of the non-observed economy of a given country. In addition to errors and uncertainty in the measurement of GDP, a fundamental shortcoming of the productivity ratio of VAT is of a conceptual nature, since the ratio is based on a production rather than the consumption type of VAT, which is found in most countries in the world (Ebrill et al., 2001). Besides the common efficiency ratio, Martinez-Vazquez and Bird (2010) introduced a "non-standard" efficiency ratio, called the "ratio of gross VAT collection", which is calculated only on the basis of expenditures on the final consumption of households.

In order to improve the quality of VAT efficiency measurement the OECD developed its VAT revenue ratio (VRR). This ratio measures the deviation of actual VAT collection in respect to a potential base, calculated by applying the standard rate on the potential base – final consumption with VAT previously excluded (OECD, 2012). The VRR decomposition developed indicators that can be used to quantify the impact of the policy gap and compliance gap on the efficiency of VAT collection (OECD, 2012). In this way, the C-efficiency is not only an indicator of the VAT efficiency and gap ratio between the revenue collected and the potential VAT revenue. The indicator is also an analytical tool that indicates the factors which contribute to the VAT gap and thus measures and policies by which it is possible to increase the efficiency of VAT collection without increasing the tax burden.

The effectiveness of the VAT reform can be measured on the basis of the work efficiency and capacity of the tax administration. The OECD (2013) and IMF (Tait, 1988) have developed a typology of indicators of the efficiency of tax administrations, which are fundamentally based on the variation of the mutual relationships of several variables: costs of tax administration, the amount of revenue collected, the number of taxpayers, the number of tax officials. According to international standards of tax administration efficiency measurement, efficiency indicators are reliable, comparable and relevant for further analyses only if the conditions in which the administration operates in the long term (for example several years) remain unchanged. The recommendation is that the efficiency of tax administrations should be measured in a period when there has been a consolidation of the tax administration (OECD, 2013). It is not possible to obtain a reliable indicator of the work efficiency if the administration is in a phase of transition

(merger into a single institution) or an internal reorganization on a large-scale (for example regionalization of work). In addition, introduction of radical changes in tax policy (new types of taxes, the introduction of differentiated rates, changes in the threshold of taxation, etc.) or large movements of personnel and investment may influence efficiency of the tax administration. Almost all the above mentioned (cumulative) happened during the reform of indirect taxation in B&H, which "blurs" the true effects of work, i.e. results achieved are burdened by non-standard one-time costs (occur in one or two fiscal years).

Ratio of imperfection of VAT policy shows the ratio of "legal" VAT obligation to "ideal" VAT obligation, i.e. the share of theoretical VAT revenue that can be charged using the current law in relation to the potential revenue from VAT on total expenditures for final consumption (CASE, 2013). Starting from the basic concept of Mooij and Keen (2012) and the elaborated methodology of Keen (2013) a further decomposition of the C-efficiency has been made on the component which measures the impact of a reduced rate(s) (the rate gap) and the component of exemption (the exemption gap) on the extent of policy gap. As distinct from the methodology of the OECD (2012) Keen's calculation of the mentioned components of (in)efficiency of VAT is based on the application of the weighted average rate of VAT on total consumption (Mathis, 2004). Martinez-Vazquez and Bird (2010) emphasize that the compliance gap involves the interconnection of two factors – tax discipline (tax morale) and effectiveness of tax administration. VAT system is subject to frauds particularly in refunds. Having in mind the fractional character of VAT it is necessary to analyze at which stage the most extensive VAT frauds are possible, Keen and Lockwood (2007) argue that there is a positive relation between the openness of the economy, in terms of reliance on imports of goods, and the collection efficiency of VAT. In contrast, the openness of the economy, in terms of the importance of exports, may be a critical factor in VAT efficiency (Keen and Smith, 2007). The OECD has also developed a ratio for dynamic monitoring of tax debts, necessary for compliance gap analysis, which measures trends of total accumulated tax debts in relation to annual net tax collection (OECD, 2013). The OECD research on tax debts shows a rapid growing trend of total tax debts in the post-crisis period in only a few EU member states.

The EU developed two concepts relevant for VAT efficiency analysis. The indicator "VAT reduced rate and base indicator", created by De Laet and Wöhlbier (2008) and widely accepted by the EU, points out the difference between the statutory standard rate and the VAT component of implicit rate, expressed as a percentage of the standard rate. This indicator points out the significance of reduced rates, zero rate and exemptions in the VAT system and the size of deviations from the pure, theoretical concept of taxation of overall consumption by a single VAT rate. Another approach to the analysis of the theoretical base for VAT involves the application of the implicit rate methodology dividing net VAT revenues by final consumption expenditures for households (EU, 2013).

Empirical research on VAT efficiency in B&H relies on the relevant international methodology in that field, with slight revisions where necessary, mainly due to lack of data or specific circumstances related to B&H. It should be noted that B&H only a few years ago began to publish statistics of GDP based on expenditure method; a subsequent recalculation was made for previous periods. As the reliability of the national account statistics is much higher in developed economies than in developing countries and countries in transition when forming conclusions based on the obtained ratios of VAT efficiency in B&H a high level of grey economy should also be taken into account. According to the latest survey the grey economy in B&H is estimated at 26.52% of GDP in the period 2001-2003 while in 2008 it came to 22.76% of GDP (Tomaš, 2010). The economic reforms in the sphere of taxation, of which the most significant is the introduction of VAT, are highlighted as the most important factors that have contributed to improving the situation. It should be emphasized that available statistics of consumption in B&H do not allow precise quantification of the VAT gap in line with the EU methodology (Reckon, 2006).

For the purpose of the assessment, the statistics of final consumption expenditures of households were used, structured only by basic COICOP[1] classification codes (01-12). Bearing in mind legal provisions the exempted consumption includes expenditures on health services (06), recreation and culture (09), education (10) and others (12), where social and financial services are dominant as well as insurance services. Expenditures on housing, etc. (04) include expenses that are not subject to VAT (imputed rent for housing) or on which VAT should generally not be paid (actual rents for housing) under the existing Law. In 2012 a reassessment of imputed rent for housing was made for the period 2000-2011. As the estimate of the imputed rent in 2012 has not been published yet, for the purpose of this paper the amount of imputed rent for 2012 is estimated at the level of 2011.

The analysis and author's calculations presented in this paper are based on the set of official macroeconomic indicators and external trade statistics in the period of implementation of VAT in B&H, provided by the Agency for Statistics of B&H[2] and the estimation of macroeconomic trends for 2013, internally prepared by the Directorate for Economic Planning[3]. Fiscal data (collection of indirect taxes and fiscal operation of general government) are internally available at the Indirect Tax Authority (ITA)[4] database, the database of the Macroeconomic Analysis Unit of the ITA Governing Board (MAU)[5] and from the Central Bank[6] of B&H where necessary.

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[1] Statistics on consumption in B&H is categorized under the UN COICOP classification (Classification of Individual Consumption According to Purpose) only by grouping items under basic two-digit classification (01-12). Standard COICOP classification includes an additional breakdown within each code (see http://unstats.un.org/UNSD/cr/registry/regcst.asp?Cl=5&Lg=1).

[2] www.bhas.ba.

[3] www.dep.gov.ba.

[4] www.uino.gov.ba.

[5] www.oma.uino.gov.ba.

[6] www.cbbh.ba.

3 THE SYSTEM OF VAT IN BOSNIA AND HERZEGOVINA

3.1 BASIC CHARACTERISTICS OF THE CONCEPT

VAT was introduced in B&H on 1 January 2006. VAT introduction was the final phase of a comprehensive reform of the indirect taxation system. In addition to the transfer of constitutional authority and centralization of legislation and administration of indirect taxes, the reform included the redefinition of the funding system of all levels of government in the complex and decentralized fiscal structure of B&H and incorporation of elements of cooperative and executive federalism in the indirect tax policy sphere in B&H (Antić, 2009).

The VAT system applied in B&H is of the consumption type and invoice-credit method, which in principle implies the right to deduct VAT on all supplies of goods and services, except for a small number of constraints defined by the Law on VAT ("the Law"). From the introduction of VAT, a single rate in the amount of 17% applied. Although initiatives for the introduction of differentiated VAT rates are continuously present, especially during the election period, due to the specific way of decision-making in the area of indirect taxation (Antić, 2013) in the complex and highly decentralized fiscal structure of B&H, which requires the consent of Entities (i.e., the Federation B&H and the Republic of Srpska), it was not possible to reach a political consensus. Analyses have shown that the introduction of a reduced rate of 8% on goods and services under Annex III of the Directive would require an increase of the standard rate to 24% (Antić, 2011a). The VAT registration threshold is prescribed in the amount of BAM 50,000 (EUR 25,565), but small firms, whose annual turnover is below the threshold for registration, have the option of voluntary VAT registration. Similarly, the threshold for registration for farmers amounts to BAM 15,000 (EUR 7.669), with the possibility of voluntary registration. The tax period is one month. VAT returns are submitted within ten days of the end of the tax period, and in the same terms taxpayers are obliged to pay the VAT obligation. VAT refunds to predominant exporters are carried out within 30 days while to other taxpayers VAT refunds are paid within 60 days. The taxpayer has the right to choose a tax credit instead of refunds, with the exception of the first year of the implementation of VAT when other taxpayers were allowed the tax credit instead of the right to a refund. The ITA is obliged to pay unused amount of tax credit within a period of six months. At the time of the introduction of VAT the Law on VAT was fully compliant with the EU Sixth Directive on VAT. Exemptions from VAT were limited to public sector services, social services, postal, financial and insurance services. In some segments the Law included what was then the best practice of the leading EU member states in the fight against tax evasion, which was later incorporated in the recast of Council Directive 2006/112/EC.

3.2 DEROGATIONS FROM THE VAT CONCEPT

Despite the strong commitment of local fiscal authorities and the international community in B&H there were derogations from the basic concept of VAT in B&H at the end of 2005, just before the introduction of VAT. After the war, post-

Dayton B&H used huge amounts of international assistance for recovery and re-construction and later to build the required institutions, infrastructure and major construction ventures. At the initiative of the International Community changes to the Law were made in order to enable VAT refunds to beneficiaries of international relief projects approved by the B&H Council of Ministers. As the term "relief" is not precisely defined in the Law the right to a refund is interpreted in an extensive way. VAT refunds were approved not only for international projects involving non-refundable and interest-free grants and donations but also for credit arrangements concluded with low interest rates, raising the question of potential discrimination of projects financed by domestic credit funds in relation to international credit arrangements.

Another derogation from the Law was made at the end of 2008, when exemptions from paying VAT on imports and supplies of goods and services in the country within the EU projects financed by Instruments for Pre-Accession Assistance of EU–IPA were allowed, in accordance with the Regulation of the Council no. 1085/2006. This regulation stipulates that "Community financing shall in principle not be used for paying taxes, duties or charges in beneficiary countries listed in Annexes I and II". Although the exemption from VAT may be made directly, on delivery of goods and services, or indirectly, through subsequent refunds, B&H has opted for a model of exemptions, regardless the fact that this model can create space for VAT frauds.

4 TRENDS IN VAT COLLECTION (2006-2013)

Switching from the sales tax to VAT brought strong fiscal effects in first two years of implementation. If the VAT system efficiency in B&H were measured by the amount of revenue collected as compared that in the period in which the sales tax was in force, it could be concluded that the reform of indirect taxation was a very successful reform. In 2006 as much as 51% more tax was collected in VAT and lagging sales tax than in 2005. Projections of revenue from VAT/sales tax for 2006 were exceeded by 17.5%. The first year of the VAT introduction was also specific for the significant share of lagging sales tax, as a result of the increase in imports of goods and services that were not taxed or taxed at a lower rate of sales tax (10%) before the introduction of VAT. Low refunds contributed to a high initial VAT collection for two reasons. Due to the characteristics of the administration of VAT, the first refunds were paid in March 2006. Secondly, the Law prescribed the suspension of VAT refunds to other taxpayers during 2006. Due to these circumstances the implementation of the Decision adopted by the Indirect Taxation Authority Governing Board (ITA GB) on the allocation to the reserve account for refund payments in the amount of 10% of collected indirect taxes led to a surplus in the reserves account of 0.5% of GDP. The abolition of suspension of VAT refunds to other taxpayers led to a strong increase in VAT refunds. As refund requests exceeded the limit of reserves allocation during 2007 there was first a slow-

down in refunds payment and then a blockade of payments. Problems with refund payments resulted in the transfer of a significant portion of refunds from 2007 to 2008, which had a positive impact on the fiscal balance in 2007 while on the other hand it burdened the fiscal balance in 2008. "The refund crisis" was resolved by removing administrative constraints on the allocation of refunds and switching to a flexible financial management of the distribution of revenues collected from indirect taxes, taking into account the deadlines for payment of refunds, payment of external debt and financing the budget of all levels of government (Antić, 2013). In addition to the massive transfer of refunds, the year 2008 was also characterized by a strong growth in VAT collection caused by the increase in prices of raw materials, food and energy-generating products on the world market. The first signs of the crisis occurred in the fourth quarter of 2008 when taxpayers, in order to maintain liquidity, opted for VAT refunds instead of tax credits. The share of VAT refunds in the mentioned quarter reached a maximum of 26.7% of gross VAT, so the net collection of VAT was negative for the first time since the introduction of VAT (chart 1). The year 2009 recorded negative trends in VAT collection as a result of the fall in consumption and economic activities.

CHART 1
Trends in VAT collection, change in %, q/q
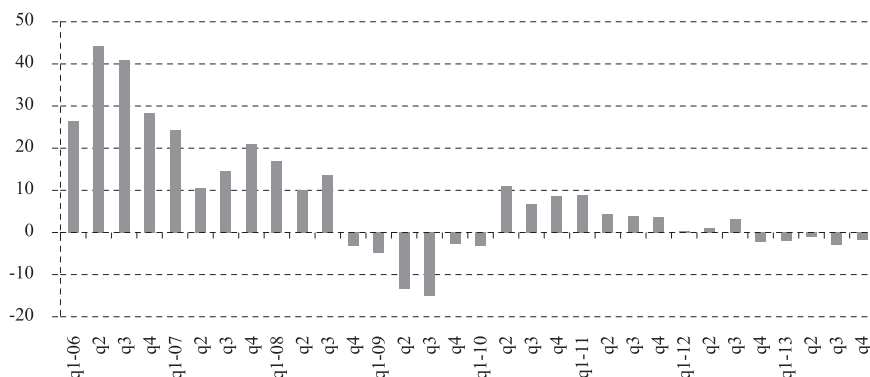
Source: Database of Macroeconomic Analysis Unit of the ITA Governing Board (MAU).

The first signs of the recovery of the economy in B&H were recorded in 2010. The growth of the economy in 2010 led to an increase in consumption and VAT revenues, which, during 2011 and then in 2012, exceeded the effects of pre-crisis 2008. The continuous trend of positive growth in VAT revenues, which lasted for ten quarters, was interrupted in the fourth quarter of 2012. Despite the forecast positive economic growth, the increase of refunds (table 1) to taxpayers and international projects in 2013, frauds and VAT debts, led to a decline in VAT net collection of 1.9%.

TABLE 1

Trends in VAT

	2006	2007	2008	2009	2010	2011	2012	2013
Net VAT collection, in bn BAM	2.7	2.9	3.1	2.8	3.0	3.1	3.2	3.1
As % of total revenues of general government	31.5*	29.2	28.6	27.1	27.9	28.2	28.2	27.9
As % of GDP	12.6	12.3	12.0	11.0	11.6	11.8	11.6	11.0

* Figure for 2006 includes VAT and outstanding sales tax declared for 2005, but collected in 2006.

Source: Author's calculation; indirect tax revenues: Indirect Tax Authority (ITA); general government revenues: Central Bank of B&H (2006-2008)/MAU (2009-2013); GDP: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

TABLE 2

VAT refunds, as % of gross VAT

	2006	2007	2008	2009	2010	2011	2012	2013
Total VAT refunds	12.1	17.7	23.0	20.6	19.3	21.6	21.6	24.1
VAT refunds to taxpayers	11.3	16.6	21.8	18.6	17.3	19.2	19.4	21.5
VAT refunds to international projects	0.8	1.1	1.1	1.9	2.0	2.4	2.1	2.7

Source: ITA.

5 IMPLICATIONS OF STRUCTURAL CHARACTERISTICS ON VAT COLLECTION IN BOSNIA AND HERZEGOVINA

5.1 VAT RATE

Tax reform in B&H, which entailed replacing sales tax with VAT, according to intention of fiscal authorities, should have been a revenue-neutral reform. According to estimates, the same level of revenues as in the sales tax system could have been achieved by applying a VAT rate of 16%. However, given the high rate of tax evasion, especially in a highly decentralized country like B&H, in order to neutralize the risk, a statutory rate of 17% was determined. The excess of achieved revenues from VAT over those projected indicate that the introduction of VAT led to a reduction of the grey economy and tax evasion in B&H. The number of VAT taxpayers in relation to the projected number, calculated on the basis of the records of sales taxpayers, was doubled as early as the time for VAT registration. Starting from the tax base from 2005 it can be concluded that the same level of revenues in 2006 could be accomplished with a rate of 13.5%. Any further increase in the VAT rate by 0.14 percentage points corresponded to an increase in revenues by 0.86 percentage points. Given that B&H was committed to align the VAT system with EU rules, the standard rate could have been as low as 15%. However, even with that lowest allowed rate B&H would have been able to accomplish a revenue growth in 2006 of 9.5%. Given the large discrepancy between the revenue-neutral VAT rate and the statutory rate it can be concluded that the statutory VAT rate was an important factor in the efficiency of VAT collection in the first years of its implementation in B&H.

The trend in the effective VAT rate in the period 2006-2013, calculated on the basis of the actual collection of VAT and expenditures for final consumption (IFS, 2011), reveals strong fluctuations (table 3) which can be explained by comparing trends in VAT collection and expenditures for final consumption. Given the different trends of government and private components of final consumption, it can be noted that in time the range between calculated effective rates increases as a result of the growth of government expenditures for final consumption.

TABLE 3
VAT rate in B&H, in %

	2006	2007	2008	2009	2010	2011	2012	2013
Statutory rate	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Effective VAT rate, based on final consumption expenditure	12.3	13.4	12.8	11.8	12.3	12.6	12.4	12.0
Effective VAT rate, based on households' final consumption expenditure	15.5	16.6	15.9	14.9	15.7	16.5	16.4	15.8
Weighted average VAT rate	16.9	16.8	16.8	16.6	16.6	16.5	16.5	16.4

Source: Author's calculation; VAT revenue: ITA; consumption: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

Trends in VAT collection and consumption until 2012 (chart 2) confirm the conclusion of the empirical studies conducted by Sancak, Velloso and Xing (2010) that the changes in revenues from VAT as a dominant type of consumption taxes become sharper in relation to changes in economic trends. However, in the last two years, a fall in VAT collection and a growth in consumption have led to a drop in the effective VAT rate, although economic growth was recorded.

CHART 2
Trends in prices, final consumption, imports and VAT, in %
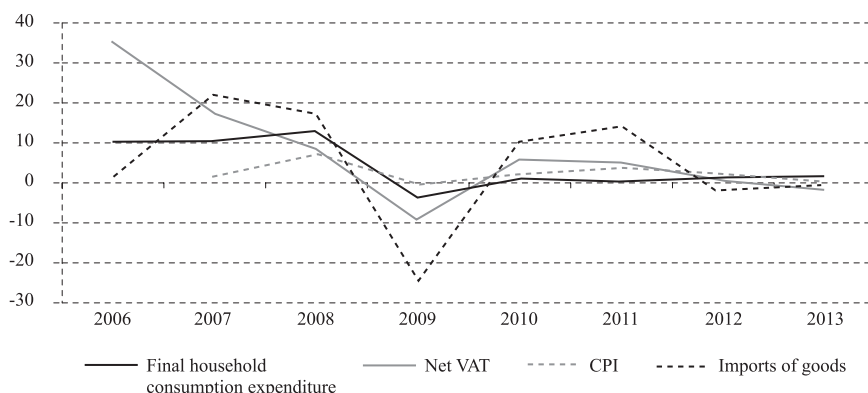
Source: VAT revenue: ITA/MAU; CPI/consumption/import of goods: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

5.2 VAT BASE

Starting from the fact that the VAT system in B&H has a single rate, VAT collection is directly determined by movements in the base (consumption). Bearing in mind that B&H introduced the VAT system with a wide base and a strictly limited scope of exemptions from VAT, the movement of the base (consumption) should have been determined by the movement of the economy, employment and prices. However, the basis for the VAT calculation was to some extent altered by the introduction of exemptions for supplies of goods and services within projects financed from IPA funds and by the approval of VAT refunds based on international projects. According to data released, the amount of exempted VAT on imported goods is negligible, while for the exemption in the country there are only the records of approved certificates of exemptions. According to available data and estimates the amount of lost VAT in the period 2010-2012 ranged around 1% of net VAT, i.e. 0.1% of GDP. However, since exemptions in the country always represent an incentive for tax frauds, tax expenditures of this derogation are certainly higher. In the coming years, after the removal of political blockages, the financing of EU projects through IPA funds is expected to be strengthened, and greater tax expenditures will thus be generated.

Although the VAT system is based on the standard rate, VAT refunds in the case of international projects *de facto* have the same effects as the application of the zero VAT rate on domestic trade of goods and services. The impact of indirect application of the zero rate can be quantified using the methodology which Mathis (2004) used to calculate the weighted average rate of VAT. Due to the application of the zero rate on domestic trade the weighted average rate for 2013 deviates for 0.57 percentage points compared to the statutory rate of 17% (table 3).

A comparison of weighted average and effective VAT rate on the total expenditure for final consumption in B&H with EU member states calculated by Borselli, Chiri and Romagnano (2012) points out that only two member states (Cyprus and Luxembourg) have a lower tax burden of expenditures for final consumption than B&H, while the tax burden on taxable consumption in B&H is at the level of the weighted average VAT rate in the EU.

From the overview given in table 4 it can be seen that the share of the taxable base on which VAT was not paid due to the indirect application of the zero VAT rate increased year by year, with the expectations that in the coming years, due to major infrastructure projects (construction of highways network) it will be more important.

In order to analyze the impact of evolution on the basis of revenue collection from VAT it is necessary to assess the theoretical basis for VAT under the applicable regulations based on analysis of consumer trends and changes in its structure. The

difference between the actual revenue collected from VAT and the theoretical VAT liability represents the VAT gap.

TABLE 4

Decomposition of taxable base, in %

	2006	2007	2008	2009	2010	2011	2012	2013
Standard rate	99.13	98.66	98.55	97.72	97.55	96.99	97.37	96.63
Zero rate	0.87	1.34	1.45	2.28	2.45	3.01	2.63	3.37

Source: Author's calculation; VAT revenue: ITA/MAU.

The taxable base can be calculated as the difference between final consumption expenditures reduced by the amount of VAT paid, and consumption exempted from VAT, including exemptions for IPA funds. The taxable base is further divided into the base on which VAT is charged and the base that has remained non-taxable. The structure of the taxable base includes the value of goods and services supplied on the basis of international projects for which VAT is refunded. The base which is taxed at a zero rate is calculated from data on refunds to international projects.

TABLE 5

Decomposition of final consumption, in %

	2006	2007	2008	2009	2010	2011	2012
Standard rate	72.1	79.0	75.0	69.1	72.3	74.0	73.1
Zero rate	0.0	0.0	1.1	1.6	1.8	2.3	2.0
Non-taxed base	6.5	-0.7	2.6	8.2	5.7	3.9	5.6
Exempted, IPA	0.0	0.0	0.0	0.1	0.7	0.5	0.8
Exempted base, other	21.4	21.7	21.2	21.0	19.5	19.3	18.6

Source: Author's calculation; consumption: Agency for Statistics of B&H.

Calculations (table 5) show an increase in the VAT gap – that part of the taxable base on which VAT should have been charged since 2008, on account of the taxable base. Despite a growth in the taxable base after a sharp drop in 2009 everything points to the erosion of the VAT base.

Chart 3 shows the contribution of components to the movement of final consumption, measured in percentage of GDP. The growth of final consumption in 2008 was a result of the growth of the base on which VAT is charged as well as of the growth of exempted consumption and consumption that was supposed to be taxable (the VAT gap). The strong decrease in revenues from VAT in 2009 is a result of the simultaneous effects of two negative trends, the fall of the base on which VAT is charged and the growth of VAT gap. In the next two years the consumption growth was mainly the result of the growth of the taxable base on which VAT is charged and the fall of tax evasion. However, positive trends were stopped in 2012.

CHART 3

Decomposing changes in final consumption, % of GDP
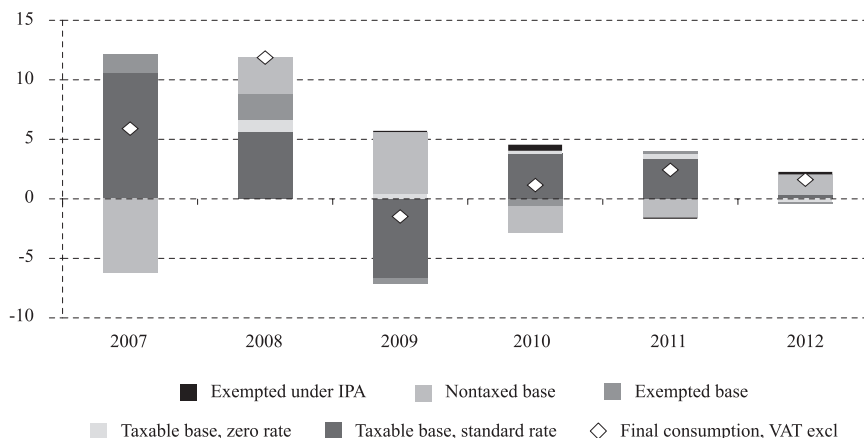
Source: Author's calculation; VAT refunds: ITA; consumption: Agency for Statistics of B&H.

Applying the EU concept of implicit tax rate (ITR) to trends of consumption and the collection of VAT in B&H, fluctuations in the amount of implicit rate and apparent downward trend can be noted in the last two years (table 6).

TABLE 6

VAT component of Implicit Tax Rate

	2006	2007	2008	2009	2010	2011	2012	2013
ITR VAT, in %	13.6	14.9	14.3	13.5	14.0	14.4	14.2	13.6
Change Y/Y, in %	n/a	9.5	-3.4	-5.8	3.9	2.2	-1.3	-4.0
VAT base indicator, in p.p.	1.0	-0.3	0.2	1.0	0.5	0.2	0.4	0.9

Source: Author's calculation; VAT revenue: ITA/MAU; consumption: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

Applying EU methodology for calculating the "VAT reduced rate and base indicator" in B&H (table 6) an illogical situation in 2007 can be seen as a result of a surplus generated by transferring refund payments from 2007 to 2008. In other years one can see an increase in the variation related to the statutory standard rate, which may be the result of two factors – the widening of non-taxable base or reduction of efficiency in VAT collection. The widening of the non-taxable base can be explained by increasing VAT frauds, as well as by the effects of exempting trade of goods and services financed from IPA projects, which, given that it is difficult to control them, may represent an incentive for frauds. Finally, the strong tax evasion induced by differentiated excise policy, which has escalated in the last two years, has led to changes in consumer's behavior. Substitution of cigarettes

with fine-cut tobacco, as well as substitution of diesel fuel with heating oil resulted in the erosion of the taxable base for VAT. Notwithstanding the foregoing, in comparison with the values of indicators for EU member states (EU, 2011), the deviation of the implicit from the statutory VAT rate in B&H is minimal, as the result of a broad base and application of the standard VAT rate.

5.3 VAT THRESHOLD

The threshold for registration is, in addition to the rate and base, the third important factor in the design of VAT system. According to standards of the OECD (2012) by the height of the threshold for registration of VAT, B&H can be considered as a country with a relatively high threshold. In relation to the EU member states threshold for registration in B&H is about the arithmetic average of the EU (chart 4).

CHART 4
VAT threshold in the EU, in thousands of euro
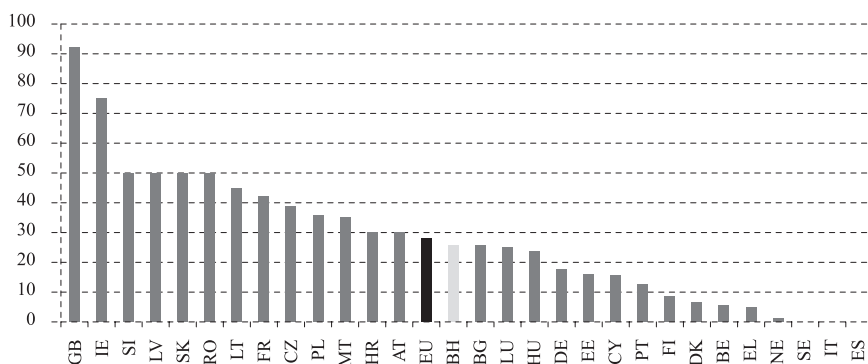
Source: IBFD (2013); author's calculation.

The application of a relatively high threshold for registration should have positive effects on the VAT collection due to the cascading effect of input VAT contained in costs of small firms that are not registered for VAT, the financial sector, post office and others exempted from VAT. Despite the relatively high threshold, a sharp increase in the number of taxpayers was recorded. One of the reasons is the significant migration of companies from the grey to the regular economy, as one-off effect of VAT introduction. Another important factor is the legal option of voluntary registration for small businesses. According to internal data of the ITA about 40% of registered taxpayers are related to voluntary registration. Net contribution of this group of taxpayers to the revenue collection is negligible, since refunds to small firms almost annul the tax obligation. Finally, the increase in the number of taxpayers is a logical consequence of the growth impact of CPI (see chart 2) during the period of implementation of VAT on the amount of trade of small firms. The fact that the real value of the threshold for registration in 2013 was 20% lower than in 2005, when the initial registration for VAT was carried out (chart 5), points to the conclusion that some small firms in this period reached the legal threshold for registration.

CHART 5
VAT threshold in B&H
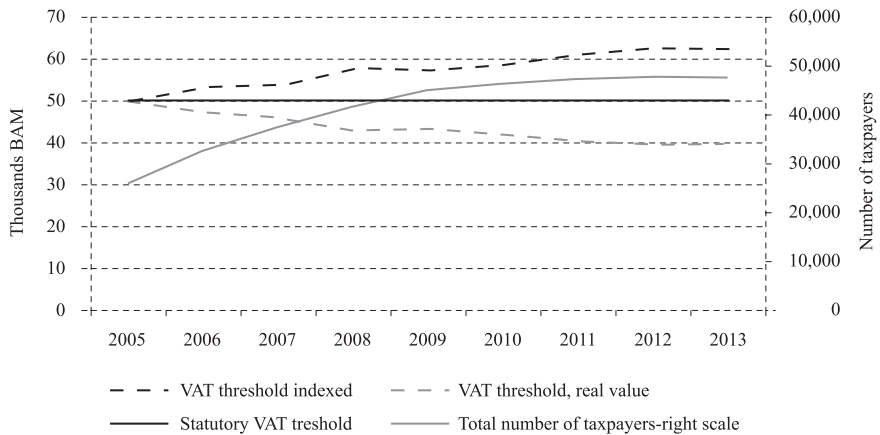
Source: Author's calculation; VAT revenue: ITA/MAU; CPI: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

6 IMPLICATION OF REFORM PROCESSES

6.1 IMPLICATIONS ON THE VAT COLLECTION

In addition to internal factors, which came out of the basic elements of the VAT concept and VAT policy, the collection of revenues from VAT in B&H is also influenced by regional and global integration processes which B&H has joined.

The time of implementation of VAT in B&H coincided with the implementation of the process of foreign trade liberalization. In the first phase, which began in 2007, joining CEFTA (Central European Free Trade Agreement) B&H abolished almost all customs duties in goods trade with neighboring countries. The second phase of liberalization, which began in mid-2008 with the application of the EU Stabilization and Association Agreement, entailed a gradual reduction in imports of goods originating from the EU to customs duty-free imports within the period of five years. Given the dominant share of trade with the EU and neighboring countries in foreign trade (around 85%) the process of liberalization has led to a sharp decrease in revenues from customs duties. The third phase of the process of foreign trade liberalization implied the abolition of non-fiscal customs barriers with the fiscal effects on imports of goods from third countries since the fourth quarter of 2011. It was expected that the liberalization process would produce direct losses in revenues from customs duties, but also indirectly, through the increased substitution of imports from third countries, which remained burdened by customs, by customs-free imports from the EU and under CEFTA. However, activation of the domestic Oil Refinery at the beginning of 2009, led to a strong growth in oil imports from Russia. Consequently, additional customs revenues from imports from Russia partially offset losses made in the process of foreign trade liberalization.

The main objective of the indirect taxation system reform in B&H was the harmonization of indirect tax policy with EU standards. The introduction of VAT represented a key condition for the start of the harmonization process of indirect taxes. At the height of the crisis B&H started with the process of the harmonization of tobacco products excises with the minimum EU standards. The new Law on Excise Duties, which came into force on 1 of July 2009, introduced a minimum excise duty and a structured rate of excise duty on cigarettes (*ad valorem* and specific). The process of harmonization implies a constant increase in the specific excise duty in order to achieve the minimum excise duty on cigarettes in the EU. In the period 2008-2012 the weighted average retail selling price of cigarettes doubled, while revenues from excise duties on tobacco increased by 110%. The increase in excise duties on cigarettes has significantly contributed to the collection of additional VAT revenues, given that the value of the cigarette market increased 35% over that of 2008. However, as the increase of the tax burden on cigarettes has not been accompanied by adequate harmonization of excise duties on cut tobacco, the growing gap between the taxation of cigarettes and cut tobacco, as a substitute, has led to strong tax evasion and the expansion of the black market. As a result, for the first time in 2013 a negative growth in revenues from excise duties on tobacco was recorded and thus a negative contribution of excise duties on tobacco to the growth in revenues from VAT.

In order to provide funds for the repayment of international loans for the development of a network of highways B&H, in the middle of 2009, in addition to the existing road tax in the price of oil derivatives, introduced an additional road tax earmarked for the development of highways. Both road taxes have the characteristics of excise duties on oil, by the method of collection and the impact on the basis for calculation of VAT. Since the road tax is paid on motor fuels only, the introduction of the additional road tax has increased the gap between tax burden on motor derivatives and heating oil, which has stimulated the use of heating oil as motor fuel, producing tax evasion with negative consequences for the collection of road taxes and VAT.

When assessing the effects of the mentioned reforms on the collection of certain types of revenues from indirect taxes, a baseline scenario was created, which assumes an unchanged policy of indirect taxes (customs duties, excise duties, VAT) for the period 2006-2013. Nominal fiscal effects on the VAT collection, obtained by applying macroeconomic indicators (imports, consumption, CPI) on the collection of certain types of revenues starting from the base 2006 year, have in the last three years been around 0.3% of GDP (table 7).

It should be noted that the calculated effects on the VAT collection only refer to aggregate positive effects on excise duties on tobacco and additional road taxes. Bearing in mind the phase character of VAT as a form of tax, collection of less VAT on imports due to any possible customs value reduction occurring after the elimination of customs duties, does not necessarily mean an actual reduction in

net VAT. This can occur only in the case of cost-elastic products where the reduction of the customs basis could lead to a reduction in retail prices and thus in VAT. Due to the high index of the B&H economy openness (around 45%), measured according to the OECD methodology (2011), the reliance on imports and dominant share of trade with the EU and neighboring countries in foreign trade (around 85%), it was expected that the reduction and then the abolition of customs duties on most imports should lead to the reduction in retail prices of goods and services and thus to the reduction in revenues from VAT. Another reason tending to support those expectations was that the liberalization of imports from the EU took place at a time of global economic crisis, a fall in income, consumption and economic activity. However, a continuous growth in retail prices, recorded in previous years, led to the conclusion that the savings on customs duties spilled over into extra profit without compromising the net VAT base/collection.

TABLE 7

Effects of reforms

	2008	2009	2010	2011	2012	2013
Net effect on VAT, as % of net VAT		0.93	2.07	2.34	2.49	2.33
Net effect on VAT, as % of GDP		0.10	0.24	0.27	0.29	0.26
Net effect on indirect taxes, as % of GDP	-0.45	-0.20	0.36	0.25	0.24	0.04

Source: Author's calculation.

Studies have shown that developing countries, under the pressure of the liberalization process of foreign trade, have been faced with the problem of maintaining the level of revenue in a situation of progressive reduction in customs revenue. Baunsgaard and Keen (2005) considered that the continuation of the trade liberalization process in many developing countries would be brought to an end if alternative sources of revenue were not found. According to them, most developing countries manage to pay a maximum of 60% of lost revenues from the exchange, mainly by strategies to increase excise duties and VAT, although there are also countries that compensate for lack of revenues from indirect taxes by increasing the income tax. From the analysis of the effects of foreign trade liberalization in this paper it is implied that B&H is something of an exception among developing countries because it managed to compensate the loss of customs revenue as a result of trade liberalization fully every year by increasing excise duties on tobacco and oil derivatives. However, the escalation of VAT refunds and debts as well as tax evasion in excise revenues as a result of the rapid growth of the tax burden and uncoordinated policy of differentiated rates, led to the erosion of the VAT base and the loss of revenue from indirect taxes in the past two years. The fact that the net contribution of the reform to the level of indirect taxes in 2013 fell to a level of only 0.04% of GDP (table 7) suggests that B&H, in the case of continuing negative trends, will have no more opportunities to compensate losses of customs revenue by increasing excise duties in the next step of foreign trade liberalization in the EU accession process.

6.2 IMPLICATIONS ON THE TAX STRUCTURE

The cumulative impact of global economic crisis, reforms and trade liberalization process led to changes in the structure of indirect taxes and tax burden, measured by percentage of GDP (table 8).

TABLE 8

Tax structure in B&H

	2006	2007	2008	2009	2010	2011	2012	2013
As % of GDP								
Indirect taxes	20.1	19.9	18.8	17.2	18.5	18.6	18.3	17.2
o/w VAT/ST[a]	12.6	12.3	12.0	11.0	11.6	11.8	11.6	11.0
Customs duty	2.6	2.8	2.5	1.3	1.1	1.0	0.8	0.7
Excises	4.0	3.9	3.6	3.9	4.5	4.7	4.8	4.5
Road fees	0.8	0.8	0.7	1.0	1.2	1.1	1.1	1.0
Direct taxes	2.7	2.5	2.9	3.2	3.3	3.4	3.4	3.3
Social security contributions	11.9	12.5	13.7	14.3	15.0	15.1	14.9	14.4
As % of total revenue of general government[b]								
Indirect taxes	50.2	47.2	45.0	42.6	44.5	44.6	44.4	43.8
o/w VAT/ST[a]	31.5	29.2	28.6	27.1	27.9	28.2	28.2	27.9
Customs duty	6.5	6.6	5.9	3.3	2.8	2.5	2.0	1.9
Excises	9.3	8.8	8.4	9.0	9.3	10.5	11.3	11.7
Road fees	2.1	1.9	1.7	2.4	2.9	2.6	2.6	2.6
Direct taxes	6.8	5.9	7.0	7.9	7.9	8.1	8.2	8.5
Social security contributions	29.6	29.6	32.7	35.5	36.1	36.2	36.1	36.6

[a] *Figure for 2006 includes VAT and outstanding sales tax declared for 2005, but collected in 2006.*
[b] *Consolidated revenues of all levels of government (central level, entities, cantons, local level and extra-budgetary funds).*

Source: Author's calculation; indirect tax revenues: ITA/MAU; other revenues: Central Bank of B&H (2006-2008), MAU (2009-2013); GDP: Agency for Statistics of B&H (2006-2012)/ Directorate for Economic Planning (estimation for 2013).

In the last two years a reduction in the collection of all types of indirect taxes was recorded. The distribution of contributions of VAT and other types of revenue in changes in total revenue collection from indirect taxes, measured by percentage of GDP, is shown in chart 6.

Expenses for final consumption of households and governments are in addition to VAT also burdened by other taxes on consumption such as excises duties, customs duties, etc. In addition to the direct impact on the tax burden on final consumption other indirect taxes affect households indirectly, by being included in the basis for the VAT calculation. Keeping in mind economic reforms in B&H and implications of foreign trade liberalization through the analysis of components of the implicit rate on consumption it is possible to consider the direct impact of other indirect taxes on the VAT component. Chart 7 shows downward trends in ITR components

on tobacco as a result of the strong tax evasion in the last two years. On the other hand, it can be noted that negative ITR related to other revenues (customs duties) is weakening as the five-year process of foreign trade liberalization with the EU is closer to its end.

CHART 6

Contribution of tax types to total indirect tax performance, % of GDP
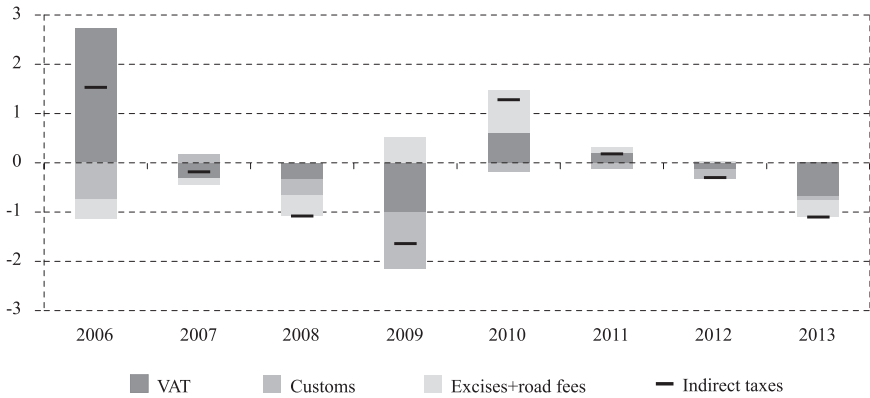
Source: Author's calculation; GDP: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

CHART 7

Decomposition of Implicit Tax Rate on consumption, change Y/Y, in %
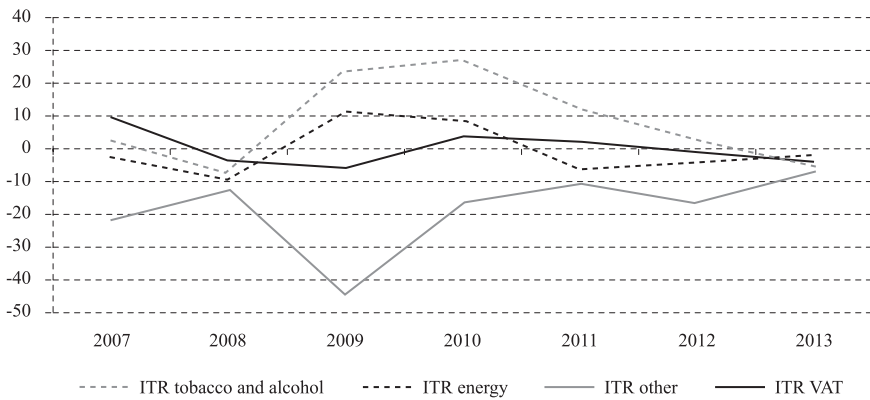
Source: Author's calculation; VAT revenues: ITA; consumption: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013); other countries: OECD (2012).

7.1 EFFICIENCY RATIO

The quality of the calculated ratios of the efficiency of the VAT system in B&H depends on the quality and structure of the existing statistics of national accounts in the country. For this reason certain adjustments of the potential taxable basis for VAT cannot be precisely determined in accordance with the OECD methodology (2012) and Keen (2013).

The efficiency ratio (productivity) in B&H in period 2006-2013 varied in the range 0.72-0.82. The maximum level was recorded in 2007 (0.82), and the minimum in 2009 and 2013 (0.72). If final consumption is used as the denominator instead of GDP, the obtained efficiency ratio is slightly lower, as a result of the specific structure of GDP in B&H where consumption is dominant.

TABLE 9

Efficiency ratio

	2006	2007	2008	2009	2010	2011	2012	2013
Based on GDP – "Productivity ratio"	0.79	0.85	0.82	0.75	0.80	0.81	0.80	0.75
Based on consumption	0.75	0.81	0.78	0.72	0.75	0.77	0.76	0.74
VAT gross collection ratio	0.91	0.98	0.94	0.87	0.92	0.97	0.96	0.93

Source: Author's calculation; GDP/consumption: Agency for Statistics of B&H.

It is noted that fluctuations of "ratio of gross VAT collection" are sharper than fluctuations of the efficiency ratio, as a result of sharper changes in final consumption of households than in total final consumption (table 9).

For the purpose of analyzing the efficiency of VAT collection in B&H the amount of expenditure for final consumption (households, non-profit organizations and government) has been used as a denominator. In the period 2006-2013 in B&H VRR ranged from a minimum of 0.69 in 2009 to a maximum of 0.79 in 2007 (table 10).

TABLE 10

VAT Revenue Ratio

	2006	2007	2008	2009	2010	2011	2012	2013
B&H	0.72	0.79	0.75	0.69	0.72	0.74	0.73	0.71
Chile	0.64	0.67	0.70	0.59	n.a	n.a	n.a	n.a
Denmark	0.64	0.65	0.62	0.59	n.a	n.a	n.a	n.a
Japan	0.70	0.69	0.67	0.67	n.a	n.a	n.a	n.a
New Zealand	1.03	0.96	0.97	0.99	n.a	n.a	n.a	n.a

Source: B&H – Author's calculation; VAT revenue: ITA/MAU; consumption: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013); other countries: OECD (2012).

Given the availability of data it is possible to compare VRR for B&H with other countries only for the period 2006-2009 (OECD, 2012). Another aggravating factor is the structure of the VAT systems of those countries for which data are available because most of them apply the VAT system with a scale of rates. In comparison with the results of the OECD's survey it can be concluded that the VAT system in B&H is more efficient than in countries with a single rate, like Chile and Denmark, while it less efficient related to Japan (OECD, 2012). Comparison with the system in New Zealand represents *de facto* a comparison with the VAT regime which is close to the theoretical ideal. It is noted that due to the crisis in these countries the efficiency ratio fell, maximum (0.5) in Denmark and Chile, 0.04 in New Zealand and 0.03 in B&H and Japan.

7.2 DECOMPOSING EFFICIENCY RATIO

According to the OECD methodology, policy efficiency ratio and compliance efficiency ratio are also calculated (OECD, 2012). Theoretical VAT revenues are obtained by applying the standard rate on the theoretical taxable base calculated on taxable components of consumption (see table 4).

TABLE 11

VAT revenue ratio decomposition in B&H

	2006	2007	2008	2009	2010	2011	2012
Policy efficiency ratio	0.79	0.78	0.78	0.77	0.77	0.77	0.78
Rate differentiation (r)	0.00	0.00	0.01	0.02	0.02	0.03	0.03
Exemptions (x)	0.79	0.78	0.77	0.77	0.77	0.77	0.78
Compliance efficiency ratio	0.92	1.01	0.97	0.90	0.93	0.96	0.94

Source: Author's calculation; Consumption: Agency for Statistics of B&H.

7.2.1 Policy gap

The weak oscillations of the coefficient of imperfection of VAT policy in B&H (table 11) are the result of derogations (exemptions from VAT on the supply of goods and services financed by IPA funds and refunds in the country with the effect of the zero rate). In general, the extent of the policy gap is significantly below the EU average, as expected, due to the application of the standard rate (CASE, 2013). On the other hand, stronger oscillations are noted in the compliance ratio, which is measured as the ratio of VAT collected and the theoretical VAT revenues that can be collected by the applicable law. The ratio shows the proportion of "lost" revenues from VAT, i.e. tax expenditures. The ratio for 2007 exceeding 1 indicates cases emphasized by Keen (2013), when a high C-efficiency ratio does not necessarily mean a better VAT system. Due to problems with allocating reserves for refunds, some of the refunds from 2007 were transferred to 2008 resulting in a higher net VAT collection in 2007. With the outbreak of the crisis the compliance efficiency fell to the lowest level of 0.90. The growth of ratios in the next two years was temporary. There was already in 2012 a deterioration of tax discipline

among taxpayers which was manifested through increased refund requests that did not follow the growth of economic activities that affect them (exports, investments), increased payments of unused tax credits and expansion of various forms of VAT frauds.

Despite the negligible impact of VAT policy on VAT efficiency we have performed a decomposition of the policy gap. Since B&H applies only the standard rate of VAT the rate gap in B&H should be zero. However, through derogations from the Law in the sphere of VAT payment within international projects, in an indirect way, the system included zero rate taxation in the country. Keen suggests that the effects of the zero rate should be included in the calculation of "exemption gap", and not "rate gap", because the part of consumption (base) for which the zero rate is applied is not included in the national account statistics (Keen, 2013). In the case of B&H we decide to include the effects of the zero rate in the rate gap for two reasons. First, unlike other countries that apply a zero VAT rate the application of the zero rate in B&H is an indirect consequence of VAT refunds by international agreements on financing projects of national significance. Due to this specificity, the base for calculation of VAT, which will be refunded to the beneficiary of the project in the next step, can be easily identified through analytical records of VAT refunds. Second, the inclusion of "indirect" zero rates in the calculation of the rate gap opens up the possibility for understanding the effects of this derogation from the Law on the efficiency of VAT collection.

CHART 8

Decomposing changes of VAT revenue in B&H, in %
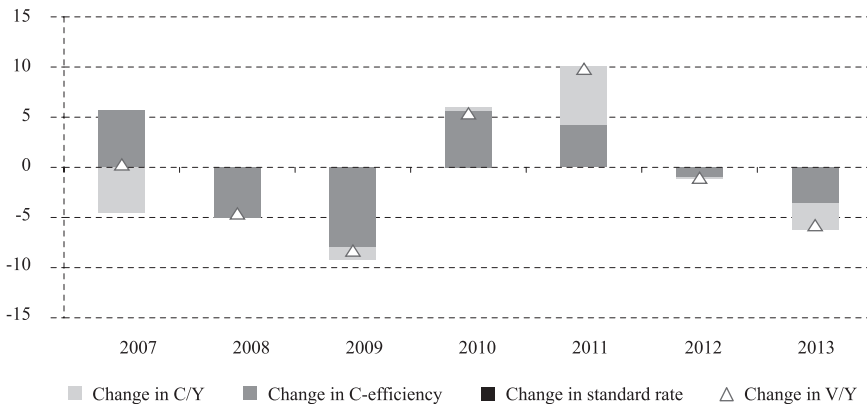
Source: Author's calculation.

With regard to the VAT system with a single rate, decomposition of VAT collection in B&H (chart 8) according to Keen's model (Keen, 2013), shows that VAT collection in B&H is affected by two factors, where changes in the collection efficiency were stronger than changes in consumption (base) in all years except in 2011. The outbreak of the crisis (2009) brought about a decline in the base and a

fall in collection efficiency, the fall in efficiency being sharper. In the next two years the efficiency growth (2010), and the cumulative effect of the efficiency and consumption growth (2011) resulted in a strong increase in the share of VAT in GDP. However, the last two years have brought a drop in efficiency (2012) and cumulative decline in efficiency and consumption (2013), which resulted in the reduction of the share of VAT revenues in GDP.

The B&H policy in terms of the rules for VAT taxation in international trade of B&H has been constant since the introduction of VAT and should not affect significantly the VAT collection. However, B&H has not yet harmonized rules of taxation of services in international trade with the new rules that are being introduced in the EU in phases during the period 2010-2015. Failure to harmonize rules of taxation of services in B&H leads to non-taxation of imports of services from the EU in B&H and to double taxation of exports of services from B&H in the EU. This harms the competitive position of service companies from B&H on both the domestic and the EU market. However, budgets of government levels in B&H can also be affected if lost VAT on imported services exceeds VAT collected from domestic companies in exports of services which is, in principle, difficult to assess. Consequently, the VAT policy gap may increase.

Decomposition of the policy gap (table 12) shows the growing importance of refund payments on the basis of international projects on collection efficiency. Bearing in mind that the scope of exemptions for the use of IPA funds was also expanded in the same period, it can be concluded that the impact of the indirect application of a zero VAT rate is still higher compared to the effect of exemptions. The negative impact of narrowing the taxable base is partially offset by the effects of harmonization of excise duties with EU standards. Net negative effects of policies of VAT, customs duties and excise taxes are around 0.2% of GDP (table 13).

TABLE 12
Summary of net effects of country-specific policy issues on VAT collection

	2008	2009	2010	2011	2012	2013
As % of net VAT	-1.5	-1.6	-1.4	-1.5	-1.2	-2.2
As % of GDP	-0.2	-0.2	-0.1	-0.2	-0.1	-0.2

Notes: (a) figures include net effects of exemptions of supplies under IPA funds, zero-rated supplies under international projects and involvement in regional and global integrations; (b) negative sign reflects a direction of influence on VAT and GDP.

Source: Author's calculation; VAT revenues: ITA; GDP: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

7.2.2 Compliance gap

Deterioration of the negative impact, measured by percentage of net VAT, in 2013 was obviously the result of the erosion of VAT revenues due to the deterioration of taxpayers' tax discipline. The extent of the compliance gap in B&H is below the

EU average, which amounts to 17% (CASE, 2013). This may be explained by the fact that the VAT system in B&H is only in the early stages of implementation, compared to the mature VAT system of EU member states, where more extensive and complex VAT frauds occur, transcending national boundaries. Analysis of the VAT base indicates an increase in the part of the theoretical VAT base on which VAT has not been paid. In addition to methodological factors, in terms of the quality of national account statistics, tax compliance may be affected by changes in consumer behavior (for example changes in the amount of consumption or changes in the structure of consumption), as forms of legal tax avoidance, induced by poor tax policy design. An important factor is also the behavior of taxpayers in terms of compliance with tax regulations and timely payments of VAT obligations. In the initial years of implementation of VAT in B&H, debts were insignificant. The growing illiquidity of the economy, as a result of the global economic crisis, first manifested through increased VAT refund requests instead of tax credits and in the coming years in the growing trend of VAT debt (table 13).

TABLE 13

Trends in VAT debt

	2006	2007	2008	2009	2010	2011	2012	2013
Ratio of aggregate end-year VAT arrears	0.6	0.9	1.3	2.7	4.1	6.1	7.9	9.8
Net VAT debt as % of VAT collection	0.6	0.4	0.4	1.3	1.5	2.3	1.8	1.8
Net VAT debt as % of GDP	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2

Source: Author's calculation; VAT revenue and debt: ITA; GDP: Agency for Statistics of B&H (2006-2012)/Directorate for Economic Planning (estimation for 2013).

Dynamic OECD VAT debt ratio in B&H shows a growing trend. Although the presented summary of the ratio of tax debt does not allow a direct comparison of the VAT debt movement in B&H with other countries, given the dominant importance of VAT in the tax structure of B&H it can be concluded that the increase in VAT debt can be much faster in B&H than in most of EU and OECD member states. B&H is an open country. Given that most of B&H gross receipts from VAT (about 60%) are collected at the border there is less likelihood of tax evasion than in countries that are less open than B&H. On the other hand, a significant share of imports in foreign trade in goods increases the possibility of VAT frauds. Given that VAT is a dominant source of revenues in B&H, the expansion of the VAT gap, due either to a debt increase or to frauds, represents a serious cause of reduced VAT efficiency and budgets of all levels of government.

It can be concluded that current net losses on VAT that can be identified amount to 4% of net VAT collection or 0.4% of GDP. Those figures include only the losses in revenues from VAT as a result of tax concessions (derogations), reforms in excise and customs policy and losses due to VAT debt that can be identified and measured.

8 INSTEAD OF CONCLUSION: DIRECTIONS FOR REFORM OF THE VAT SYSTEM IN ORDER TO IMPROVE THE EFFICIENCY

Results of studies and research into the directions of tax system reform in the world indicate that the preferable VAT system should preferably be structured close to the ideal VAT concept. A system with those features would ensure additional revenues needed for fiscal consolidation and accelerated growth after the global economic crisis, with low tax compliance costs. A VAT system similar to the ideal was implemented in B&H in 2006. After the successful implementation of VAT, the outbreak of crisis brought a sharp drop in revenues from this tax. The recovery that followed was temporary. As early as 2012 despite the growth of the economy, revenues from VAT stagnated, and in 2013 a decline of 1.9% was recorded. The period of implementation of VAT coincided with the outbreak of the global economic crisis and the entry of B&H in the global integration processes. B&H has neutralized the negative effects of tariff liberalization on revenues from indirect taxes by increasing excise and road taxes as part of the harmonization of excise taxes with EU standards and EU tax strategy that focuses on the taxation of consumption and green taxes. The process of foreign trade liberalization creates continuous pressure on fiscal authorities to compensate for the losses in customs duties by increasing excise and VAT collection. Negative trends in excise and VAT collection in 2013 suggest that possibilities to compensate for losses of customs revenue by continuing the process of excise harmonization with EU standards are exhausted. In addition, the complex decentralized fiscal architecture of B&H, with tax competences for direct and indirect taxes divided between levels of government, prevents at the outset the fiscal devaluation or fiscal revaluation, necessary for the compensation of revenues lost in the process of trade liberalization. Therefore, the process of further liberalization of foreign trade with EU member states, which B&H expects in the coming stages of the European integration process, largely depends on the efficiency of the tax administration and the control institutions of central and middle levels of government in the fight against frauds in the field of VAT and excise taxes, as the main alternative sources of revenues.

Decomposition of the VAT efficiency ratio in B&H shows considerable scope for reducing the VAT gap in the area of regulation compliance. Although VAT has been in force for only eight years, the growth of VAT gap shows that the VAT system in B&H has evolved from the initial phase, in which sporadic frauds were possible, into a more mature phase. The emergence of more complex and serious VAT frauds requires an increase in the work efficiency of the ITA. It means an application of modern methods and mechanisms to combat frauds at a national level. It is also important to strengthen the data exchange with Entity Tax Administrations and involve B&H in the data exchange platform offered by the EU to third countries. Finally, efficient tax collection requires the strengthening of legal sanctions and reducing the level of corruption in society.

Bearing in mind that B&H applies the standard rate and limited scope of exemptions from VAT in accordance with the EU Directive, it can be concluded that

there is little scope for increasing the VAT efficiency in the sphere of VAT policy in B&H. Analyses of the VAT efficiency presented in the paper, show a growing negative impact of broadening the scope of exemptions on supplies of goods and services financed under the EU aid and VAT refunds on the basis of international projects on the VAT efficiency.

Indirect introduction of the zero VAT rate in the country and expanding the scope of exemptions, the VAT system in B&H has *de facto* been degraded into the VAT model of the "first generation", which has, according to numerous studies, proved ineffective in the EU and other countries. Further directions of the reform of the VAT system in order to increase the efficiency would entail, in the first step, placing the derogations from the Law under control. Although indirect application of the zero rate came out of the assumed international liabilities due to the broad interpretation of the term relief, it was necessary to specify in bylaws the criteria for categorization of international projects for the purpose of the right to a refund. Also, the future negative impact of exemptions from VAT on VAT frauds and VAT collection efficiency should not be underestimated. In the coming years, we expect a strong growth in financial assistance from the EU for reconstruction and infrastructure investments in B&H, an escalation of VAT frauds in the country while a further decrease in VAT efficiency can be expected as well. One of the options for placing exemptions under control is to redefine the rules of using funds under EU projects in such a way as to bring in a right to a refund instead of an exemption. B&H needs urgently to harmonize VAT rules of services in B&H with the new rules in the EU in order to eliminate double taxation of domestic service providers and double non-taxation of taxpayers from the EU. In addition to the fact that the above interventions in the Law should increase the efficiency of the VAT system in B&H, it would also create the preconditions for B&H to be able to keep pace with the process of the VAT system reforms in the EU. It would require simplification and modernization of the administration VAT, a narrowing of the scope of exemptions of the public sector, financial and postal services. Those policy and administrative measures should result in revenue growth and VAT collection efficiency.

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Are there any top
FDI performers among
EU-15 and CEE countries?
A comparative panel data
analysis

MIROSLAV MATEEV, PhD*
ILIYA TSEKOV, CFA*

Miroslav MATEEV
University of Maine Business School, 5723 DP Corbett Hall, Orono, ME, United States
e-mail: mmateev@aubg.bg

Iliya TSEKOV
American University in Bulgaria, 1 G. Izmirliev square, Blagoevgrad 2700, Bulgaria
e-mail: ipt080@aubgalumni.net

Abstract

This paper examines the major determinants of foreign direct investment (FDI) inflows in 26 European Union (EU) countries using panel data. Our empirical study takes a different approach by separating European countries into two groups: Western (EU-15) countries and Central and Eastern European (CEE) countries. The results from the panel data analysis of FDI inflows to 26 EU countries for the period 1994-2012 show that: (1) traditional location variables such as market size, trade openness, unemployment, infrastructure, tax rate and unit labour costs are able, to a large extent, to explain FDI flows to both groups of countries; (2) there are country-specific factors such as economic growth, unit labour costs and credit risk that contribute to the differences in FDI patterns across EU-15 and CEECs; and (3) policy and institutional quality factors are found to play an important role for both groups of countries. When analyzing host countries based on their relative level of performance, we find that the top ten FDI performers are able to attract a significant amount of FDI because of their macro-economic stability and high level of institutional development, while for EU countries with low FDI dominance, policy and institutional risk factors play a more important role.

Keywords: foreign direct investment, transition economy, gravity model, institutional quality

1 INTRODUCTION

This paper investigates the relative importance of different macroeconomic, policy and institutional factors as determinants of FDI inflows into the transition economies in Central and Eastern Europe (CEE) and compares them with the more developed Western European countries. All of the CEE countries have undergone significant changes in their political regimes in the last twenty years. They transformed themselves within a short period of time from planned and government-controlled economies to ones where private business is encouraged and competition accepted. The need for extensive enterprise restructuring and modernization in view of limited domestic resources created environments where the potential benefits of foreign direct investment (FDI) are especially valuable. Also, transition economies are well placed to benefit from the technology and knowledge transfer associated with FDI (Demekas et al., 2005; Torlak, 2004). It is widely believed that these benefits outweigh any possible drawbacks – such as a loss of economic independence or increasing industrial concentration when a single multinational firm achieves a dominant position in an industry (Johnson, 2006).[1]

Almost non-existent at the beginning of the 1990s, the FDI inflow to the Central and Eastern European countries (CEECs) has exploded in the last ten years (Hen-

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[1] Some researchers (Blomstrom and Kokko, 1998; Schoors and Van der Tol, 2002) argue that at least in the initial stages of development or transition, FDI could have a negative impact on the recipient economy. If domestic firms are so unproductive in comparison with foreign-owned firms, the former may be driven out of business leading to a so-called "market stealing" effect.

riot, 2005). More recent data show that the Central and Eastern Europe region experienced a five-fold increase in foreign direct investment inflows between 2003 and 2008, rising from US$30 billion to US$155 billion (Pricewaterhouse-Coopers, 2010). Russia was the destination which attracted much of this additional investment as its inflows rose from less than US$8 billion in 2003 to more than US$70 billion in 2008. The credit crunch and recession that followed coincided with a collapse of FDI inflows to the CEE countries. According to the same report, FDI inflows in the region as a whole were 50% lower in 2009 than in 2008. The year 2012 saw the re-emergence of CEE FDI flows on the back of large job--intensive projects, notably in Poland, Russia, Serbia and Turkey (Ernst & Young, 2013). As a consequence, CEE overtook Western Europe to become the leading destination for FDI jobs in Europe.[2]

Simultaneously, the more developed Western European countries have received much larger FDI flows than transition economies (World Bank, 2014a). Most of these countries offer incentives to foreign investors in the form of preferential tax rates, tax holidays, special depreciation schemes, social security relief, special tax deductible items and exemptions from tariff payments. These are all intended to encourage FDI, although the empirical evidence for such an impact is limited. The existence of incentives can be justified by the externalities that accompany FDI.[3] Geographical differences within Europe became more pronounced in the last two years (2012-2013). Ernst & Young's attractiveness survey (2013) shows that Western Europe drew three-quarters of all FDI projects in 2012, yet more than half of the FDI jobs were created in Central and Eastern Europe. CEE is reaping the benefits of an affordable and capable labour force and its cost base remains competitive compared with Western Europe.

The forces driving the FDI flows into the CEE countries have been intensely analysed in the economics literature. There are numerous empirical studies which describe the specific role of different groups of factors like transition-specific factors (Carstensen and Toubal, 2004; Mateev, 2012), economic development (Henriot, 2005), economic reforms (Stoian and Vickerman, 2005), exchange rate regime (Aubin et al., 2006), wage differentials (Dupuch and Milan, 2003), and announcements related to EU accession (Bevan and Estrin, 2004). At the same time the theoretical foundations and evidence from other regions can offer little insight into the impact of certain factors specific to the transition process on FDI flows. Taken

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[2] Europe is still the world's top destination, with 22.4% of global FDI value, although its share has diminished by 6 points since 2011. This is partly due to a prolonged Eurozone crisis impacting investors' confidence and risk appetite, but is also in line with a broader shift of focus toward developing and transition economies, which, according to the United Nations Conference on Trade and Development (UNCTAD), secured in 2012 more FDI (52.1%) than the developed world.

[3] There is a widespread belief that foreign direct investment enhances the productivity of host countries and promotes economic development. This notion stems from the fact that FDI may not only provide direct capital financing but also create positive externalities via the adoption of foreign technology and know-how. Positive productivity spillover effects are found only for the developed countries (see Gorg and Strobl, 2002 for Ireland; Haskel et al., 2002 for the UK, etc.).

from the behavioural and institutional points of view, CEE countries are very different from both developing countries and industrially advanced countries. The speed with which market-oriented policies and legal reforms conducive to foreign firms were introduced proved to have an important role in explaining FDI. The significance of the privatization process in the early FDI flows should also be taken into account. The financial system stability represents an attractive factor for foreign investors and can also be considered an important FDI determinant.

Our research has two goals. First, we analyze the relative importance of FDI determinants that may explain the different sizes of foreign investment flows into more and less developed European countries (EU-15 and CEE countries). Second, we compare the 26 EU countries based on their relative FDI performance in order to find important macroeconomic, policy and institutional quality factors that may explain the differences in the level of FDI performance among European countries. Thus, our main findings reinforce the argument that the traditional location factors are able to explain the differences in FDI patterns across European countries but when the level of FDI performance is compared, a number of specific determining factors are expected to play a more important role. To the best of our knowledge this is the only paper to address this issue in the empirical literature on FDI.

In this paper we use a unique panel dataset covering 26 EU countries between 1994 and 2012. The results show that the main determinants of FDI inflows to these countries when taken as a homogenous group are market size, trade openness, unemployment rate, infrastructure endowment, unit labour costs and tax burden. Political and institutional risk factors also play a significant role in explaining FDI in Europe. When investigating FDI patterns across different groups of European countries (EU-15 and CEE countries), we find that country-specific factors such as growth in GDP, unit labour costs and credit risk seem to contribute to the differences in FDI flows attracted by each group of countries. The results also show that the top ten FDI performers are able to attract significant amounts of FDI because of their macroeconomic stability and high level of institutional development. In contrast, for the group of countries with low FDI dominance, we find that policy and institutional quality factors do play a more important role in explaining FDI; credit risk and quality of institutions are significant determinants of FDI.

The rest of the paper is organized as follows: the next section outlines our conceptual framework and summarises the theory on the determinants of FDI. The econometric model and data analysis are presented in section three. Section four presents econometric results from FDI panel regressions. Some concluding remarks are offered in the final section.

2 LITERATURE REVIEW: DETERMINANTS OF FDI
It has long been recognized that the benefits of FDI for the host country can be significant, including knowledge and technology transfer to domestic firms and the labour force, productivity spillovers, enhanced competition and improved access for

exports abroad, notably in the source country. The impact of FDI on the host economy depends on the type of FDI. Three different types of FDI were identified: market-seeking FDI (horizontal FDI), resource-asset seeking FDI, and finally, efficiency-seeking FDI (vertical FDI). The purpose of *market-seeking* FDI is to serve local and regional markets. It is also called horizontal FDI, as it involves the replication of production facilities in the host country. Tariff-jumping or export-substituting FDI is a variant of this type of FDI. Because the reason for horizontal FDI is to serve a local market better by local production, market size and market growth of the host economy are the main drivers. Impediments to accessing local markets, such as tariffs and transport costs, also encourage this type of FDI.

The second type, *resource or asset seeking* FDI, is observed when firms invest abroad to acquire resources not available in the home country, such as natural resources, raw materials, or low-cost labour. Especially in the manufacturing sector, when multinational firms directly invest in order to export, factor-cost considerations become important. In contrast to horizontal FDI, vertical or export-oriented FDI involves relocating parts of the production chain to the host country. Availability of low-cost labour is a prime driver for export-oriented FDI. Moreover, FDI in the resource sector, such as oil and natural gas, is attracted to countries with abundant natural endowments. The third type of FDI, called *efficiency-seeking,* occurs when the firm can gain from the common governance of geographically dispersed activities in the presence of economies of scale and scope. In this case, prior to making a decision, foreign investors consider the price of the factors of production (adjusted for productivity differences) and the membership in regional integration agreements. Prospective membership in the EU, which is conductive to the establishment of regional corporate networks, seems to have attracted more efficiency-seeking FDI to transition economies after the initial announcement of the progress of EU accession.[4]

Foreign direct investment represents an important source of finance for both developed and developing countries but most of FDI inflows and outflows are concentrated within the developed countries. Empirical research on foreign investment finds that FDI inflows to less developed countries are usually associated with vertical investments (Carr et al., 1998; Marakusen et al., 1996). Vertical FDI takes place when a firm relocates only a part of its production process, and not the whole production. In many cases, it is the relocation of the labour-intensive activities in low wage countries. This process tends to reduce the labour intensity of the home country domestic production. FDI inflows to developed (industrially advanced) countries are usually horizontal investments driven by market-seeking strategies, and they tend to increase the labour intensity of the home country domestic production (Mariotti et al., 2003). Therefore, horizontal investments replicate the

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[4] It must be said that market-seeking and efficiency-seeking FDI do not exclude each other. If the market-seeking FDI has a penetration logic (it looks for the market size and market parts), the efficiency-seeking FDI and resource-asset seeking FDI may be considered as delocalisation investments (Aubin et al., 2006).

complete production process of the home country in a foreign country. Horizontal FDI seeks to take advantage of a new large market, which is considered a traditional motive for FDI. In recent years, the determinants of and motivation for FDI in developing countries (including transition economies) have changed in the process of globalization.[5]

FDI is a rather complex economic phenomenon which depends on many factors whose relative importance may change as the economic environment evolves over time; so it is possible that as the economy of the host country changes and the international environment evolves, the factors motivating FDI also change. Even though the traditional determinants and the types of FDI associated with them have not disappeared with globalization, their importance is declining (Nunnenkamp, 2002). For example, one of the most important traditional FDI determinants, market size, has decreased in importance, while at the same time new determinants have emerged. Cost differences between locations, the quality of infrastructure, the ease of doing business and the availability of skills have increased in importance (Botrić and Škuflić, 2006). This reveals that investors' motives are changing, and consequently countries must seek new ways to attract FDI.

There is a growing body of research literature that provides empirical evidence about the factors determining the patterns of FDI in different countries and regions, including Europe.[6] When it comes to the analysis of FDI directed to CEE countries, the two main approaches that have been used are survey-type studies and formal quantitative analyses (Benacek et al., 2000). Quantitative studies on the determinants of FDI are based on a number of different models, but the gravity approach is the most commonly used in practice. According to Demekas et al. (2005) gravity factors consistently explain about 60 percent of aggregate FDI flows, regardless of the region.[7] Policy and institutional environment also matter for FDI. For example, Janicki and Wunnava (2004) find that international trade is perhaps the most important determinant of foreign direct investment in the CEE region, while Carstensen and Toubal (2004) argue that comparative advantages like low relative unit labour costs, corporate tax rates and relative endowments

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[5] According to Dunning (2002), FDI in developing countries has shifted from market-seeking and resource-seeking FDI to more (vertical) efficiency-seeking FDI. Due to globalization-induced pressure on prices, multinational enterprises (MNEs) are expected to relocate some of their production facilities to low (real) cost developing countries. Nevertheless, and in contrast to FDI in industrial countries, FDI in developing countries still is directed predominantly to accessing natural resources and national or regional markets.

[6] The majority of previous work in this area reports two groups of explanatory factors: gravity factors (proximity, market size) and factor endowments (infrastructure, human capital). Though there has been considerable theoretical work on foreign direct investment (for a literature review see Alfaro et al., 2006; Blonigen, 2005; Nonnemberg and Mendonça, 2004; and Vavilov, 2005), there is no agreed model providing the basis for empirical work. Rather, the eclectic paradigm, also known as OLI framework (Dunning, 1988, 1992), has been largely employed in research literature as a general tool of reference for explaining the FDI patterns of multinational enterprises.

[7] Following LeSage and Pace (2008), Leibrecht and Riedi (2010) extent the frequently used gravity model via the inclusion of spatial interaction effects across home countries of FDI as well as across host countries. Moreover, they consider the host country's surrounding market potential as a determinant of FDI flows. This variable captures the possibility that the market size of proximate countries may impact on the volume of FDI a particular host country receives.

also exert a significant influence. In our paper, we undertake the second approach, based on a comparative panel data analysis.

The gravity model rests on the assumption that FDI flows are larger between large economies and even more if the countries are close neighbours. The GDP-related core gravity variables (GDP of home country and GDP of host country) capture size effects: the larger the home country of FDI, the more FDI should emerge from this country; the larger the market size of a host country, the more FDI it should receive. Thus, the two variables are positively correlated with FDI. Following previous empirical research into host country determinants of FDI (Altomononte and Guagliano, 2003; Demekas et al., 2005) we include two proxy variables for market size – gross domestic product and population – in the panel data analysis. Nominal (or real) GDP is traditionally used as a proxy for the market size of the host country, while growth rate in GDP is used as a measure of the quality of the market demand in the same country. The two variables will indicate the importance of market-seeking FDI in a host country. We expect a positive correlation between a host country's market size and FDI. As our analysis is based on FDI net inflows to the host country, we do not include source country's GDP as an explanatory variable.

Distance has long been used successfully as a variable in gravity models explaining international trade. In these models distance functions as a proxy for transportation costs but also as a proxy for the affinity between the trading economies. Affinity is determined by geographical proximity and similarities in culture and language. A high affinity implies that economic interaction between the countries (such as trade or FDI) can occur with reduced friction (Johansson and Westin, 1994). From a theoretical point of view, the sign on the distance variable is ambiguous *a priori* (Markusen and Maskus, 2002), depending on the motive for FDI.[8] While large distance may encourage FDI due to an internalization advantage, it also may discourage FDI due to the lack of market know-how, higher communication and information costs, and differences in culture and institutions (Buch et al., 2004, 2005). However, if the investor's host-country affiliates are relatively new, as is often the case in the Central and Eastern European countries, they typically depend on headquarter services and intermediate inputs supplied by the parent firm. Therefore, even in the case of horizontal FDI to the CEE countries, a negative impact of distance on FDI is plausible.

Several previous studies (Altomonte, 1998; Bevan and Estrin, 2000; Bos and Van de Laar, 2004; Carstensen and Toubal, 2004) have suggested that trade limitations have

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[8] Johnson (2006) argues that distance should have a negative effect on market-seeking FDI. Increasing distance implies lower affinity, resulting in higher costs of investment and more costly adaptation of goods to local preferences. Efficiency-seeking FDI is likely to be affected negatively by distance for the case where the components produced in the host country are shipped back to the source country, since transportation costs increase with distance. Distance can be argued to be relatively unimportant for resource-seeking investment. Resource-seeking MNEs are attracted to a limited number of geographical locations where the needed resource is available, diminishing the importance of distance for the investment decision.

also had significant impact on the size of FDI flows. Factors such as trade openness are of major importance to investors who usually prefer countries with relatively liberal trade regimes. It is widely argued that FDI and openness of the economy should be positively related as the latter in part proxies the liberality of the trade regime in the host country, and in part – the higher propensity for multinational firms to export.[9] Following Deichman (2001), Falk and Hake (2008), and Holland and Pain (1998) we include a proxy variable (import plus export as a percent of GDP) to assess the relative effect of trade openness on FDI flows. The expected effects may differ by the type of investment regarding local market or export orientation, the host country's foreign exchange control laws and applied capital taxation. However, for our sample of 26 EU countries, we should expect trade openness to indicate also the level of integration of the local economy into the regional economic flows. Therefore, trade openness will have a positive impact on FDI.

The prospects for political and macroeconomic stability together with the transparency of the legal regulations governing factors, such as foreign ownership of land and profit repatriation, all matter to potential investors and the risk must be compensated for by higher expected gains (Jun and Singh, 1996). Usually foreign companies look for resources availability, high productivity, reduced unit labour costs, but also for well-established financial institutions providing full banking services as well as well-developed security markets. Thus, financial system stability and the level of credit activities in a host country represent attractive factors for foreign investors and can be considered important determinants of FDI (Albulesku et al., 2010). In this study, we use the volume of domestic credits to the private sector as a share of GDP to proxy the credit activities in a host country. We expect a positive relationship between this variable and FDI.[10]

Furthermore, the existence of a developed and effective infrastructure is necessary for the operations of MNEs since it reduces costs of distribution, transportation and production, thereby affecting comparative and absolute advantage of the host country. Bellak et al. (2009) find evidence that FDI in CEE countries is attracted by increases in infrastructure endowment; information and telecommunication infrastructure as well as transport infrastructure impact positively on FDI. Different studies of FDI use different proxies for infrastructure.[11] For example, Demekas et al. (2007) include an indicator of infrastructure reform from the European Bank for Reconstruction and Development (EBRD). This index reflects the state of

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[9] Trade policies and, more broadly, trade costs (tariffs, non-tariff barriers, and transportation costs) are generally found to have a significant impact on FDI flows, but in aggregate regressions their sign is ambiguous. This is probably due to the different effect the barriers to trade can be expected to have on horizontal and vertical FDI; they tend to attract horizontal FDI, which aims at penetrating the domestic market, but repel vertical FDI.
[10] Our preliminary tests find this variable to be a weak proxy for credit activities (and financial stability) in a host country. The variable shows insignificant in all model specifications.
[11] Goodspeed et al. (2006) explain FDI in a broad range of countries and include the consumption of electric power, the number of mainline telephone connections and a composite infrastructure index in their regressions. In a related paper Goodspeed et al. (2010) find that a favourable infrastructure endowment attracts FDI to developed as well as less developed countries. Thereby the impact is larger in the latter country group.

regulation of infrastructure services (EBRD, 2004). The study finds that, for the less developed economies in their sample, infrastructure is an important determinant of FDI, while it becomes insignificant for the more developed countries. Campos and Kinoshita (2003) use the number of mainline telephone connections as a proxy for infrastructure. A positive impact on FDI is found only for the former Soviet Union countries. In this study we use total telephone lines per 100 people to account for the quality and availability of infrastructure services in a host country. As favourable infrastructure endowment attracts FDI to both developed and less developed countries, we expect a positive influence on FDI.

Empirical research finds that the choice of an investment location is driven by total labour costs as well as labour productivity. The indicators of labour costs used in empirical studies can be classified into three major groups: total labour costs, gross wages and unit labour costs (see Bellak et al., 2008 for a comprehensive survey of existing studies in the field).[12] Although the various measures can be classified into these three groups, the exact definition of the measures applied differs widely within each category. Consequently, the empirical studies show a wide variety of results with respect to the size and significance of the coefficient of the labour cost proxy used. Most of them report a negative impact of labour costs on FDI, while Boudier-Bensebaa (2005) finds a significant positive sign for the unit labour cost variable in a study on regional FDI in Hungary.

Since our sample includes both well-developed and developing (transition) economies we expect the difference between gross wages and total labour costs to vary substantially in different European countries. If foreign investors are seeking low labour costs, the availability of cheap labour will be an important factor affecting FDI. However, firms only prefer low wage locations if the reduced labour costs are not compensated by lower labour productivity, or an overvalued currency. Following Carstensen and Toubal (2004) we use monthly average gross wages as a share of GDP per employment to proxy the unit labour costs in a host country. A rise in wages increases, *ceteris paribus*, unit production costs, and therefore, decreases FDI. Therefore, we may expect a negative relationship between this variable and FDI, although a positive-signed coefficient is plausible.[13]

Previous studies of FDI in developing countries have put particular stress on the indicators of economic and political risk (Lucas, 1993; Singh and Jun, 1996). This

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[12] The literature using unit labour costs is heterogenous concerning the operationalisation of labour costs. For example, Bevan and Estrin (2004) use annual average wages in the manufacturing sector as a proxy for total labour costs and nominal GDP per capita as a proxy for labour productivity. In contrast, Carstensen and Toubal (2004) employ differences in unit labour costs between home and host countries calculated as monthly average gross wages over nominal GDP per employment.

[13] Since labour costs in the transition economies appear to be very low, it is likely that they would generate efficiency-seeking FDI from MNEs in countries that have higher labour costs. At the same time one should recognize the fact that low wages do not necessarily reflect low production costs because labour productivity may be low. Taking this into account, the location decision of a multinational enterprise depends on the relative productivity-adjusted labour cost in the host country.

comprises three main elements: (a) macroeconomic stability, e.g., growth, inflation, exchange rate risk; (b) institutional stability such as policies towards FDI, tax regimes, the transparency of legal regulations and the scale of corruption; and (c) political stability, ranging from indicators of political freedom to measures of surveillance and revolutions. In general, it might be expected that FDI is more likely to flow from developed countries into developing economies that are politically stable and have access to large, regional markets. In this study the institutional stability is proxied by corruption and a composite variable for the quality of institutions. Previous studies of the relationship between corruption and FDI (Demekas et al., 2005; Smarzynska and Wei, 2000; Stoian and Filippaios, 2007) indicate that a high level of corruption can have a negative effect on the volume of FDI flows since it increases the costs of operation in the host country for foreign investors and reduces the profitability of investment. Following Pournarakis and Varsakelis (2004) we use the Transparency International's Corruption Perceptions Index (TI) as a proxy for the severity of corruption. Pursuant to previous empirical findings, we expect a negative correlation of this variable with FDI.

To account for the institutional quality effects we use the World Bank's Worldwide Governance Indicators (WGI), which include six measures: political stability, government effectiveness, regulatory quality, rule of law, control of corruption, and voice and accountability. The perception of political stability (and risk) is measured through Moody's Sovereign Credit Rating, which *inter alia* captures the likelihood of expropriation of assets and other forms in which a weak institutional environment is manifested. Less political risk should lead to more FDI. Due to the particular definition of the measure of risk (see appendix A) we expect a positive correlation with FDI, that is, the higher the country risk index, or the less risky the investment environment, the more attractive a country is for FDI. Following previous empirical studies we introduce a second proxy for credit risk – a country's credit default swap (CDS) spread – which is found to be negatively correlated with FDI.

We use two additional variables (unemployment rate and statutory corporate income tax rate) to capture the effect of any economic changes that might influence overall economic activity, and FDI in particular. Less unemployment should imply larger investment flows; thus, we expect negative correlation with FDI.[14] Previous empirical studies (see Bellak and Leibrecht, 2009) show that low (effective average) corporate tax rates indeed attract FDI in general, and FDI in CEE countries, in particular. Thus, a negative relationship between the tax rate and FDI is expected.[15]

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[14] It's axiomatic that a higher unemployment rate should discourage FDI. One might consider that a high unemployment rate might mean that a unit labour cost advantage of the host country might be long-lasting, since the labour demand would have to expand tremendously before any pressure for wage inflation would be present.

[15] From an empirical viewpoint, corporate income taxes do indeed matter for investment location decisions of MNEs. For example, De Mooij and Ederveen (2008) carry out a meta-analysis of 35 empirical studies and find a median tax-rate elasticity (semi-elasticity) of FDI of about -2.9. However, the typical tax-rate elasticity crucially depends on the tax measure used and the operationalisation of FDI applied. Concerning tax rates, various measures are proposed in the literature (see e.g., Devereux, 2004).

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A COMPARATIVE PANEL DATA ANALYSIS

3 EMPIRICAL SPECIFICATION

This study aims to reveal whether the traditional (location) characteristics can explain the differences in FDI in different groups of EU countries. Therefore, the central research question to be answered can be formulated as follows: Can the traditional factors – identified by the existing empirical literature – be applied to less developed transition economies, or are there other determinants (e.g., policy and institutional risk factors) that explain the different attractiveness of the two groups of European countries? This question will be investigated by analyzing FDI to a group of 26 EU countries covering the period 1994-2012. In this study we take a different approach – the whole sample of European countries is divided into two groups, Western European countries (EU-15) and Central and Eastern European countries[16], and they are analyzed separately. Then, we rank the host countries in our sample based on their relative FDI performance and investigate the marginal effect of different macroeconomic, policy and institutional quality factors on FDI in each group of countries. To explain the differences in FDI across Western and Eastern European countries we test two research hypotheses:

Hypothesis 1: Since the two groups of European countries – the more developed Western countries and the CEE countries – are geographically close and share similar market features, there should be a group of common factors that explain FDI inflows to these two regions.

Hypothesis 2: Since the differences in FDI pattern across the two groups of countries may be due to different macroeconomic, policy and institutional factors, the more developed the institutional and policy environment in a host country is, the larger the FDI dominance of this country over the countries with less-developed environments.

3.1 DEPENDENT VARIABLE

The dependent variable is FDI net inflows per year (in current U.S. dollars). A sample of 26 European host countries, including 15 Western countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden and United Kingdom[17]) and 11 Central and Eastern European countries (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Poland, Latvia, Lithuania, Romania, Slovakia and Slovenia) is examined to empirically test the determinants of FDI flows. The analysis uses logarithm of FDI inflows to adjust for the skewed nature of the data; other studies of FDI determinants in transition economies undertake similar treatments of the dependent variable (see Demekas et al., 2005). The analysis also incorporates FDI inflow for the previous year as an independent variable. Substantively, the lagged dependent variable accounts for the path-dependent nature of FDI flows; that is, coun-

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[16] According to UNCTAD statistics, CEE countries include 19 ex-centrally planned economies and cover also the group of Southeastern European countries included in our sample.

[17] Malta and Cyprus are excluded from the group of Western countries as they do not belong to the original EU-15 formation and there is scarce information for most of the country-specific variables.

tries that have received FDI in the past may be more likely to receive it in the present year. Methodologically, the lagged dependent variable helps to control for serial correlation.

3.2 EXPLANATORY VARIABLES

Two main assumptions for the choice of explanatory variables to be used in the empirical analysis emerge from the preceding discussions (see section 2). First, in order to better understand the determinants of FDI, it is crucial to specify an empirical model that allows for a combination of traditional (market size, distance, trade costs, and relative factor endowments), and more country-specific determining factors (risk, corruption and quality of institutions). All of these variables are closely related to the theoretical models that explain the attractiveness of a country as an FDI destination. Second, European countries are far from being homogeneous. Both the level of economic development and the size of FDI differ across different groups of countries (EU-15 and CEECs). Hence, the key question we address in this paper is how important the traditional determinants are in explaining the FDI pattern into more and less developed EU countries, and what specific factors contribute to the FDI dominance of EU-15 over CEE countries.

As noted earlier, market-seeking FDI is to serve the host country market. Market size is a measure of market demand in the country. We expect FDI flows to be greater in countries with a larger domestic market. Following previous research on FDI we use real GDP rather than nominal GDP as a proxy for market size, as the large fall in output that characterised the first years of transition (1994-1997) could result in a strange relationship between GDP and FDI inflows. We use population (POP) as a second proxy for the market size of a host country. We expect both variables to have a strong positive influence on FDI. We also use annual real growth rate in GDP (GDP_G) as a proxy for the market potential of a host country.[18] In line with previous empirical studies this variable should be positively correlated with FDI. It is a stylized fact in the empirical literature that trade volumes between two countries are a function of both income levels of the two countries (GDP) and the distance between them. In a gravity model, the smaller the distance between two countries, the more they are expected to trade. Distance is a proxy for transportation costs, or (economic) barriers to trade. Following Demekas et al. (2005), we compute weighted distance (W_DISTANCE) as the sum of bilateral distance to all source countries multiplied by the ratio of GDP of source country to all source countries' GDP. In line with their study, we expect a negative correlation with FDI.

We also introduce a number of control variables, which capture the impact of global and country-specific effects on FDI. Our choice of control variables is led by FDI theory and it is based on well-established findings in the empirical litera-

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[18] We used general secondary education enrolment rate (EDUC) as an alternative proxy for the market demand in a host country. We find this variable insignificant in all model specifications.

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ture (see section 2). These are real world GDP growth rate (WORLD_GDP), credit default swap spread (CDS), trade openness (import plus export as a percent of host country's gross domestic product, TRADE), unemployment rate (UNEMPL), telecommunication (total telephone lines per 100 people, TELE), corporate tax burden (statutory corporate income tax rate, TAX), unit labour costs (ratio of monthly average gross wages to GDP per employment, ULC), corruption index (Transparency International's Corruption Perceptions Index, COR), and credit risk (Moody's Sovereign Credit Rating, CR_RISK).

In addition to the macroeconomic and political risk effects we introduce a group of factors that measure the level of the institutional quality in a host country. To summarize the information contained in these factors, we utilized principal component analysis (PCA). PCA permits the reduction of the number of variables used in the estimation and yet retains a substantial part of the information contained in the various variables. This strategy has been widely used in previous empirical studies (Calderón and Servén, 2004; Kumar, 2006). A detailed explanation and the expected sign of each proxy variable included in the composite index (INSTIT) are presented in appendix B. Following Sinha (2012), we created a second composite (socio-economic) variable (NAT_RES); this variable is used as a proxy for the availability of natural resources and the ability of the country to process these resources using technology and skill. It includes the following variables: gross fixed capital formation, gross domestic product, gross domestic product per capita, gross domestic savings, and total natural resources rents (see appendix B).

To summarize our discussions on model variables and data sources, appendix A displays both dependent and explanatory variables and their expected impact on FDI. We use the correlation matrix of dependent and explanatory variables (available upon request) to examine the possible degree of collinearity among these variables. The explanatory variables used as proxies for policy and institutional risk effects (COR, CR_RISK and INSTIT) are highly correlated with the rest of the variables used in our regression analysis. Thus, we may expect that multicollinearity will be present in our model. To mitigate this problem these variables are included in the model specifications one at a time.

Table 1 displays the differences in the level of macroeconomic and institutional development between the group of top ten FDI performers and the rest of the countries in our sample. The data show that countries with large FDI dominance are characterized with well-developed macroeconomic, policy and institutional environment, while most of the countries in the second group are transition economies. This may explain the larger FDI flows to the first group of (more developed) EU countries and the relatively low FDI performance of the second group. We also run a simple t-test on the mean differences between the characteristics of the two groups of countries and find that for all but two variables the mean difference is statistically significant.

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TABLE 1

T-tests on mean-differences

Mean	Top 10	Others	Difference (t-test)
FDI	4.19E+10	5.16E+09	9.79***
GDP_REAL	1.12E+12	1.13E+11	15.24***
POP	3.80E+07	7.10E+06	15.96***
W_DISTAN	5.28E+03	4.62E+03	6.02***
GDP_G	0.0232	0.0296	-2.17**
W_GDP	0.028	0.028	0.00
CDS	69.363	283.34	-2.75***
TRADE	0.989	1.035	-0.86
UNEMPL	0.087	0.092	-1.24
TELE	0.497	0.368	11.68***
TAX	0.337	0.25	12.31***
ULC	0.868	0.227	10.12***
COR	3.808	5.208	-7.85***
CR_RISK	18.772	14.718	14.08***
INSTIT	1.078	-0.688	9.85***
NAT_RES	1.496	-0.938	15.66***

Note: *, **, and *** represent significance at 10, 5, and 1 percent, respectively.
Data in table 1 represent the mean values of the dependant and explanatory variables for the sample of top 10 countries in terms of FDI inflows and the rest of the sample, for the period of 1994-2012. Total number of observations is 272. For some variables there are missing observations. The dependent variable is total FDI net inflows. The explanatory variables are Real GDP (GDP_R), Population (POP), Weighted distance (W_DISTAN), Growth in real GDP (GDP_G), Real world GDP growth rate (W_GDP), CDS spread (CDS), Trade openness (TRADE), Unemployment rate (UNEMPL), Infrastructure endowment (TELE), Corporate income tax rate (TAX), Unit labour costs (ULC), Corruption index (COR), Sovereign credit rating (CR_RISK), Institutional quality index (INSTIT), and Natural resources (NAT_RES). Time dummies for different major events (Eurozone and EU membership) are not included in the table. The table shows also the t-statistics of the mean-differences between the characteristics of the two country groupings.
Source: Authors' calculation.

4 MODEL AND ECONOMETRIC RESULTS

The use of panel regressions with both a time-series and a cross-country dimension, as opposed to a simple cross-section regression, allows a more sophisticated examination of country-specific effects. This study uses the following specification:

$$Ln(FDI_{jt}) = Ln(FDI_{jt-1}) + \beta_1 Y_{jt} + \beta_2 X_{jt} + \varepsilon_{jt} , \qquad (1)$$
$$\varepsilon_{jt} = \eta_{jt} + \gamma_t + u_{jt} ,$$

where FDI_{jt} denotes FDI inflows to host country j at time t, FDI_{jt-1} is the lagged value of dependent variable, Y_{jt} is a vector of traditional location variables, and X_{jt} is a vector of control (macroeconomic, policy and institutional) variables. Here ε_{jt} is an error term that includes the country-specific as well as time-specific effects.

Time effects, γ_t, are usually modelled as fixed parameters as they are correlated with the gravity model variables. Including time fixed effects in the empirical model is one way to consider spatial autocorrelation in disturbances (Hansson and Olofsdotter, 2010). In order to explore the cross-sectional dimension of the panel we assume that the country-specific effects η_{jt} are random and *i.i.d* with $(0; \sigma_\mu^2)$. As this assumption requires the country-specific effects to be uncorrelated with the considered regressors, we will verify the latter condition by means of a Hausman test.[19] Finally, u_{jt} denotes the stochastic remainder disturbance term which we allow to suffer from heteroskedasticity and serial correlation of unknown forms. All regressions include year dummy (TIME) to control for time variation from changes in external economic environment common across sample countries.

The results for panel data regressions are presented in tables 2 through 6. The benchmark model is run for six different specifications. Table 2 shows the results for the total dataset of 26 EU countries (EU-15 and 11 CEE countries). The first column in table 2 displays the estimation results for our core model. In line with some recent studies on FDI in transition economies (Bellak et al., 2009; Hansson and Olofsdotter, 2010) we find that the coefficient of GDP variable is statistically significant and positive.[20] With respect to other gravity variables in Model 1, the estimated coefficients of POP and DIST carry the expected signs but only the POP variable is marginally statistically significant at the 10 percent level. One possible explanation of why the distance variable enters the model insignificantly is that the main source countries of FDI to our sample countries are from Europe.[21] Growth in GDP used as a proxy for market demand also shows no significance in our analysis (see Model 1). Although the results of our pre-estimation tests indicate there is no causality in the FDI-GDP relationship we decided to omit the GDP_G variable from the rest of our model specifications.

The control variables enter the empirical model statistically significantly except real world GDP growth rate. This variable proves to be insignificant in all model specifications and drops from models 2 through 6. The estimated coefficients of the rest of the control variables carry the expected signs. A positive estimate of the TRADE variable implies that countries with relatively liberal trade regimes capture disproportionately more FDI. It also indicates that a higher level of integration of the local economy into the regional economic flows impacts the FDI attracted by this country positively. The positive and significant coefficient of the TELE variable signifies that, in general, countries with more favourable infra-

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[19] Hausman's (1978) specification test enable us to test the hypothesis regarding the absence of correlation between the unobservable specific effects and the explanatory variables, and thereby, to consider the individual effects as random or fixed. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.

[20] If the GDP coefficient is positive and significant this implies that foreign investors are indeed attracted to a large domestic market (market-seeking FDI). We also use GDP per capita as a proxy for the quality of the market demand in a host country and do find this variable significant in all model specifications.

[21] When the GMM estimator is used (not reported here), the DIST variable proves to be marginally statistically significant and negative.

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structure endowment attract more FDI. As expected, the unemployment rate and corporate income tax rate have negative impacts on FDI but only UNEMPL is strongly statistically significant at the 1 percent level. The coefficient on corporate tax rate displays a tax-rate elasticity of about -1.5. This result is in line with the meta-analysis of De Mooij and Everdeen (2008) who find a median tax-rate elasticity of about -2.9 but this should be treated with caution because they use the effective average tax rate rather than the statutory tax rate. Finally, in line with Demekas et al. (2005), our analysis shows a marginally significant (and negative) impact of unit labour cost on FDI.

We also introduce a number of control variables that proxy for different political and institutional risk effects (see Model specifications 2 through 5). The estimated coefficients of COR, CR_RISK and INSTIT are statistically significant and with the expected signs. The NAT_RES variable used as a proxy for the availability of natural resources in a host country enters the model as insignificant. These findings are not unexpected. The data in table 1 show that the largest amount of FDI is attracted by EU-15 countries (see also appendix C for the top 10 FDI performers), which are well developed economies with low levels of macroeconomic and political risk, and limited natural resources. At the same time CEE countries are characterized with a low degree of transparency and high bureaucratic risk that defer FDI. For these countries we expect variables such as corruption, credit risk and quality of institutions to play a significant role in explaining FDI. When country risk level is measured by the credit default swap spread (CDS), the results show a strong negative impact on FDI (see Model 1).

TABLE 2
FDI net inflows panel regressions (1994-2012), total sample

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
GDP_REAL	3.513** (0.010)	2.064*** (0.000)	2.464*** (0.000)	2.341*** (0.000)	1.929*** (0.004)	2.079*** (0.000)
POP	2.093 (0.537)	1.222 (0.441)	2.893* (0.068)	2.843* (0.081)	0.098 (0.960)	1.477 (0.332)
WEIGHTED_ DISTANCE	-0.036 (0.880)	-0.089 (0.558)	-0.047 (0.754)	-0.108 (0.473)	-0.098 (0.522)	-0.094 (0.536)
GDP_G	1.944 (0.445)					
WORLD_ GDP	0.045 (0.992)					
CDS	-0.165** (0.015)					
TRADE	0.357 (0.211)	0.553* (0.060)	0.426* (0.105)	0.340 (0.196)	0.886* (0.087)	0.351 (0.184)
UNEMPL	-3.325 (0.288)	-2.091 (0.258)	-6.075*** (0.003)	-4.037** (0.028)	-5.327*** (0.010)	-2.932* (0.100)
TELE	2.757 (0.188)	3.322*** (0.001)	3.723*** (0.000)	3.391*** (0.001)	2.924** (0.011)	3.329*** (0.002)

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Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
TAX	-1.460 (0.608)	-1.206 (0.348)	-1.271 (0.312)	-1.153 (0.364)	-2.147 (0.120)	-1.514 (0.234)
ULC	-0.719 (0.505)	-1.102* (0.087)	-1.058* (0.097)	-0.464 (0.487)	-0.993* (0.103)	-0.918 (0.153)
COR		-0.201* (0.083)				
CR_RISK			0.089*** (0.004)			
INSTIT				0.269** (0.022)		
NAT_RES					0.090 (0.345)	
Lag(FDI)	0.006 (0.945)	0.117* (0.052)	0.105* (0.077)	0.123** (0.038)	0.088 (0.160)	0.131** (0.028)
TIME(2008)	0.570*** (0.007)	0.170 (0.344)	0.146 (0.412)	0.119 (0.510)	0.102 (0.579)	0.158 (0.382)
R-squared (overall)	0.288	0.274	0.299	0.292	0.310	0.280
Number of observations	183	342	347	347	324	347

Notes: Model 1 includes gravity variables (GDP, POP and WEIGHTED DISTANCE), world and country-specific macroeconomic variables (GDP_G, WORLD_GDP, CDS, TRADE, UNEMPL, TELE, TAX and ULC). Models 2 through 5 include policy and institutional risk variables (COR, CR_RISK, INSTIT and NAT_RES). Models 1 through 6 include also lagged value of the dependent variable (FDI). Table 2 shows FE specification for each model based on Hausman's test results. All variables (expect FDI, GDP and POP) are taken as ratios or in percent.
*, **, and *** represent significance at 10, 5, and 1 percent, respectively.
P-values are shown in brackets. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.
Source: Authors' calculation.

We also introduce the lagged value of the dependent variable (FDI) in all model specifications. The positive sign of this variable shows that countries with a larger stock of FDI will also, *ceteris paribus*, have an advantage in attracting new investment compared to countries with a smaller stock. All model specifications include a time dummy to control for different time periods (before the financial crisis of 2008 and after that); the estimated coefficient is positive and statistically significant only in Model 1.

The results achieved so far show that there is a set of gravity and traditional (location) factors common across different groups of European countries (EU-15 and CEE countries) that explain FDI flows to these countries. Thus, we find strong evidence in support of our first hypothesis. Although the two groups of countries are geographically closer and share similar market features, one may expect them to have different kinds of attractiveness to foreign investors. Looking at them as a homogeneous group of economies makes it difficult to disentangle institutional

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and other effects on FDI that are cross-correlated to these same factors. Thus, using separate samples makes it possible to analyze whether the motives for FDI differ across EU-15 and CEE countries. Another advantage of using separate samples is that it reduces the correlation between the explanatory variables. Basically, the same specifications as for the total sample are used. The results for the groups of EU-15 and CEE countries are presented in tables 3 and 4.

Model 1 in table 3 shows that the gravity variables (except distance) enter the model statistically significantly. While GDP and POP variables show strong positive impact on FDI in all model specifications, the DISTANCE variable remains insignificant. Similarly to the total sample GDP_G variable and real world GDP growth rate are not statistically significant. Including macroeconomic factors as control variables yields results similar to those for the total sample. All but two variables (unemployment and tax rates) show a significant impact on FDI flows into the group of EU-15. In the next few models we control for different political and institutional risk effects. COR, CR_RISK and NAT_RES variables are all found to have a statistically significant impact on FDI. The results in table 3 show that more developed European countries with a larger stock of FDI will have no advantage in attracting new investments compared to countries with a smaller stock; the estimated coefficient is positive but statistically insignificant. All model specifications in table 3 include time dummies for the years 1999 and 2002 to control for Eurozone membership effect.[22] The estimated coefficients for year 2002 are statistically significant, which confirms our expectation that, in general, Eurozone membership plays an important role in attracting more FDI into the group of EU-15 countries but its immediate effect may be negative for some EU countries (year 2002 dummy is negative).[23]

TABLE 3

FDI net inflows panel regressions (1994-2012), EU-15 sub-sample

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
GDP_REAL	8.341** (0.029)	5.559*** (0.000)	5.540*** (0.000)	5.217*** (0.000)	4.669*** (0.002)	5.300*** (0.000)
POP	2.564 (0.801)	8.543** (0.019)	9.168** (0.012)	8.611** (0.020)	3.995 (0.351)	8.418** (0.023)
WEIGHTED_ DISTANCE	-0.723 (0.276)	-0.164 (0.498)	-0.143 (0.552)	-0.145 (0.556)	-0.148 (0.543)	-0.140 (0.567)
GDP_G	10.151 (0.182)					
WORLD_ GDP	0.169 (0.985)					

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[22] The euro currency was launched alongside EU national currencies in 1999 but physical notes and coins that replaced all national currencies came into existence in 2002. For more details see: http://en.wikipedia.org/wiki/Eurozone#Member_states.

[23] There is no way of saying whether the 2002 dummy is negative due to Eurozone membership or maybe there are other factors that affect FDI flows in that particular year (2002).

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Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
CDS	-0.270** (0.015)					
TRADE	3.638** (0.019)	0.300 (0.661)	0.513 (0.453)	0.277 (0.694)	0.033 (0.964)	0.375 (0.587)
UNEMPL	-4.202 (0.407)	-3.040 (0.335)	-5.162 (0.168)	-0.347 (0.915)	-5.601 (0.129)	-0.626 (0.836)
TELE	8.292*** (0.005)	3.710*** (0.004)	3.912*** (0.002)	4.030*** (0.002)	3.248** (0.021)	3.948*** (0.003)
TAX	-2.774 (0.586)	-1.786 (0.256)	-1.085 (0.494)	-1.123 (0.522)	-3.662** (0.042)	-1.712 (0.283)
ULC	-0.935 (0.667)	-1.786 (0.144)	-2.058* (0.090)	-1.634 (0.225)	-1.836* (0.105)	-2.066* (0.094)
COR		-0.399** (0.018)				
CR_RISK			0.106** (0.011)			
INSTIT				0.155 (0.426)		
NAT_RES					0.208* (0.056)	
Lag(FDI)	0.170* (0.103)	0.068 (0.350)	0.043 (0.557)	0.065 (0.383)	0.003 (0.970)	0.068 (0.360)
TIME(1999)	omitted	0.399 (0.172)	0.415 (0.155)	0.428 (0.149)	0.430 (0.143)	0.425 (0.151)
TIME(2002)	omitted	-0.494** (0.029)	-0.573** (0.011)	-0.537** (0.019)	-0.643*** (0.006)	-0.544** (0.018)
R-squared (overall)	0.291	0.295	0.298	0.275	0.307	0.272
Number of observations	91	210	210	210	197	210

Notes: Model 1 includes gravity variables (GDP, POP and WEIGHTED DISTANCE), world and country-specific macroeconomic variables (GDP_G, WORLD_GDP, CDS, TRADE, UNEMPL, TELE, TAX and ULC). Models 2 through 5 include policy and institutional risk variables (COR, CR_RISK, INSTIT and NAT_RES). Models 1 through 6 include also lagged value of the dependent variable (FDI). Table 3 shows FE specification for each model based on Hausman's test results. All variables (expect FDI, GDP and POP) are taken as ratios or in percent.
*, **, and *** represent significance at 10, 5, and 1 percent, respectively.
P-values are shown in brackets. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.

Source: Authors' calculation.

Next, the benchmark model (1) is run for the sub-sample of CEE countries (see table 4). The results support our first hypothesis that there is a set of traditional factors (market size, trade openness, unemployment and tax rate) that are common FDI determinants across different groups of European countries. At the same time we find a number of country-specific factors significant only for the group of CEE countries. For example, unlike the total and EU-15 samples, growth in real GDP enters the model strongly statistically significantly (see Model 1). This result sup-

ports Suder and Sohn (2010) finding that the fast economic growth of CEE countries during the last two decades plays an important role in increasing the attractiveness of this group of economies for foreign investors. Surprisingly, the unit labour cost (ULC) variable is not found to have a significant impact on FDI flows into the group of CEE countries; the estimated coefficient is negative but statistically insignificant. This result is inconsistent with previous empirical studies (see Bellak et al., 2008; Demekas et al., 2005) that consistently reveal negative significant effects of labour costs on FDI; yet this effect should be interpreted with caution, as a positive sign for unit labour costs is also possible, if they actually capture a higher skill level and higher per capita income.

TABLE 4

FDI net inflows panel regressions (1994-2012), CEECs sub-sample

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
GDP_REAL	0.206 (0.911)	0.097 (0.933)	0.325 (0.755)	0.641 (0.536)	1.435 (0.299)	0.537 (0.607)
POP	1.252 (0.786)	5.825** (0.043)	5.470* (0.050)	5.398* (0.053)	5.475 (0.145)	5.050* (0.071)
WEIGHTED_DISTANCE	-0.261 (0.305)	-0.316* (0.087)	-0.155 (0.419)	-0.263 (0.147)	-0.277* (0.105)	-0.260 (0.155)
GDP_G	5.587** (0.047)					
WORLD_GDP	0.632 (0.931)					
CDS	0.018 (0.890)					
TRADE	0.355 (0.208)	0.672** (0.021)	0.582** (0.027)	0.407* (0.105)	2.054*** (0.003)	0.480* (0.062)
UNEMPL	-0.645 (0.898)	-3.929* (0.104)	-5.324* (0.061)	-4.737* (0.082)	-5.868** (0.041)	-3.667 (0.170)
TELE	2.272 (0.531)	0.647 (0.736)	2.070 (0.286)	0.696 (0.707)	2.952 (0.152)	1.060 (0.567)
TAX	-5.815 (0.125)	-2.278 (0.384)	-5.270** (0.035)	-5.315** (0.033)	-4.267* (0.080)	-3.906* (0.099)
ULC	-0.175 (0.891)	-0.188 (0.799)	-0.286 (0.687)	-0.612 (0.411)	-0.656 (0.385)	-0.207 (0.772)
COR		0.116 (0.487)				
CR_RISK			0.104* (0.094)			
INSTIT				0.283* (0.084)		
NAT_RES					0.034 (0.955)	
Lag(FDI)	0.276** (0.024)	0.227** (0.017)	0.246*** (0.008)	0.249*** (0.007)	0.265*** (0.005)	0.259*** (0.005)
PRIV	omitted	omitted	omitted	omitted	omitted	omitted
TIME(2004)	0.062 (0.850)	0.117 (0.618)	0.165 (0.483)	0.131 (0.575)	0.097 (0.682)	0.124 (0.599)

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
TIME(2007)	0.605** (0.049)	0.726*** (0.002)	0.702*** (0.003)	0.689*** (0.004)	0.664*** (0.005)	0.731*** (0.002)
R-squared (overall)	0.458	0.456	0.485	0.486	0.525	0.472
Number of observations	92	132	137	137	127	137

Notes: Model 1 includes gravity variables (GDP, POP and WEIGHTED DISTANCE), world and country-specific macroeconomic variables (GDP_G, WORLD_GDP, CDS, TRADE, UNEMPL, TELE, TAX and ULC). Models 2 through 5 include policy and institutional risk variables (COR, CR_RISK, INSTIT and NAT_RES). Models 1 through 6 include also lagged value of the dependent variable (FDI). Table 4 shows FE specification for each model based on Hausman's test results. The PRIV variable is automatically omitted from the FE model specifications. By construction, the FE estimator drops variables which are time invariant. With the RE estimator, the PRIV variable is positive and statistically significant in model specifications 1, 3 and 6. All variables (expect FDI, GDP and POP) are taken as ratios or in percent.
*, **, and *** represent significance at 10, 5, and 1 percent, respectively.
P-values are shown in brackets. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.
Source: Authors' calculation.

One may expect that unlike the EU-15 sample, variables such as corruption and quality of institutions will have a significant impact on FDI in transition economies. We do find that two of the control variables that proxy political and institutional risk effects (CR_RISK and INSTIT) enter the model statistically significantly. Thus, we provide evidence in support of the hypothesis that policy and institutional quality factors are indeed able to explain the differences in attractiveness among CEE countries for foreign investors. We may expect that transition effects will be more pronounced at the level of business entities (through privatization or other phenomena) than on a country-specific level. To confirm or reject this hypothesis we also run the model with a dummy variable (PRIV) indicating the perceived quality of the method of privatization followed by the recipient (host) country.[24] In line with previous research (see Carstensen and Toubal, 2004; Holland and Pain, 1998), we do find evidence that the method of privatization has a strong impact on the level of foreign investment in the transition economies in Central and Eastern Europe.[25] The estimated coefficient for lagged value of FDI also proves to be positive and statistically significant. All model specifications include time dummies for the years 2004 and 2007 to control for EU membership effects. Of the two variables only the 2007 dummy shows a strong positive impact

[24] The variable is constructed on the same basis as Holland and Pain (1998), where sales to outside owners receive the highest quality rating, while voucher distribution and management-employee buyouts receive the lowest rating.
[25] The PRIV variable is automatically omitted from the FE model specifications. By construction, the FE estimator drops variables which are time invariant. With the RE estimator, the PRIV variable is positive and statistically significant in model specifications 1, 3 and 6. These results are available upon request.

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on FDI. We may conclude that the announcement effect of EU membership of Bulgaria and Romania in 2007 did play a positive role in attracting more foreign investments in this region.

In the previous section, we asked the question if there are top FDI performers among the European countries, and if this is the case, what factors may explain the FDI dominance of this group of countries over the rest of the countries in our sample. To answer this question, we rank all the countries in our sample based on the index of relative dominance of FDI flows (Sinha, 2012) and split them into two groups – top ten FDI performers and the rest of the countries (see appendix C). Then, we run the benchmark model (1) for each of these two sub-samples to investigate if FDI determinants are similar across the two groups. The results are reported in tables 5 and 6. As expected, we find that traditional (location) factors such as gross domestic product, credit default risk, telecommunications, and tax rate have similar effects on FDI across the two groups of performers. In contrast, the unit labour costs (ULC) variable shows significant impact on FDI only in the group of countries with low FDI dominance (most of these countries are transition economies), while variables such as UNEMPL and TELE are found to have larger effect in the group of top ten FDI performers. For this group of more developed EU economies the world GDP growth rate also plays a significant role in attracting more FDI, especially in periods of strong economic development.

TABLE 5

FDI net inflows panel regressions (1994-2012), Top 10 sub-sample

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
GDP_REAL	3.007 (0.233)	1.555 (0.146)	2.512** (0.038)	1.865* (0.083)	1.179 (0.326)	1.632* (0.105)
POP	13.938 (0.145)	1.843 (0.466)	3.821 (0.172)	3.593 (0.196)	1.160 (0.722)	1.943 (0.441)
WEIGHTED_DISTANCE	-0.097 (0.920)	-0.041 (0.864)	-0.054 (0.821)	-0.021 (0.931)	-0.012 (0.961)	-0.023 (0.924)
GDP_G	13.256 (0.135)					
WORLD_GDP	18.964* (0.086)					
CDS	-0.279** (0.045)					
TRADE	0.588 (0.745)	0.499 (0.492)	0.597 (0.407)	0.351 (0.631)	0.053 (0.947)	0.542 (0.453)
UNEMPL	-6.617 (0.143)	-4.963* (0.100)	-7.259*** (0.007)	-7.236*** (0.008)	-8.189*** (0.005)	-6.275** (0.017)
TELE	8.338*** (0.003)	3.918** (0.016)	4.292*** (0.009)	4.193** (0.011)	3.174* (0.084)	3.907** (0.017)
TAX	-3.345* (0.073)	-1.069 (0.534)	-0.405 (0.814)	-0.015 (0.993)	-1.453 (0.457)	-0.902 (0.596)

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
ULC	-1.871 (0.380)	-0.648 (0.525)	-0.818 (0.424)	-0.054 (0.961)	-0.638 (0.540)	-0.582 (0.567)
COR		-0.131 (0.431)				
CR_RISK			0.106 (0.124)			
INSTIT				0.269 (0.162)		
NAT_RES					0.011 (0.916)	
Lag(FDI)	0.088 (0.505)	0.227** (0.013)	0.203** (0.027)	0.214** (0.018)	0.192** (0.050)	0.227** (0.012)
TIME(2008)	0.537* (0.059)	0.124 (0.631)	0.100 (0.693)	0.051 (0.843)	0.007 (0.979)	0.097 (0.705)
R-squared (overall)	0.425	0.312	0.321	0.319	0.312	0.308
Number of observations	72	149	149	149	140	149

Notes: Model 1 includes gravity variables (GDP, POP and WEIGHTED DISTANCE), world and country-specific macroeconomic variables (GDP_G, WORLD_GDP, CDS, TRADE, UNEMPL, TELE, TAX and ULC). Models 2 through 5 include policy and institutional risk variables (COR, CR_RISK, INSTIT and NAT_RES). Models 1 through 6 include also lagged value of the dependent variable (FDI). Table 5 shows FE specification for each model based on Hausman's test results. All variables (expect FDI, GDP and POP) are taken as ratios or in percent.
*, **, and *** represent significance at 10, 5, and 1 percent, respectively.
P-values are shown in brackets. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.
Source: Authors' calculation.

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When analyzing the impact of political and institutional risk factors on FDI we do find some differences between the two groups of countries. The top ten FDI performers are able to attract significant amount of FDI due to their political and macroeconomic stability, as well as the high transparency of their legal regulations. Thus, we do not find the variables that proxy these policy and institutional effects to have a significant influence on FDI. For the group of countries with low FDI dominance, both credit risk and quality of institutions are found to be significant determinants of FDI. These findings are not unexpected. The countries that belong to the second group are economies with less developed policy and institutional environments; as said before labour costs in these countries appear to be relatively low, so it is likely that they are able to attract predominantly efficiency-seeking FDI from MNEs in countries that have higher labour costs. Thus, our second hypothesis is confirmed. The time dummy variable used to control for the 2008 crisis effect proves to be statistically insignificant for both groups of FDI performers (except in Model 1).

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TABLE 6

FDI net inflows panel regressions (1994-2012), others sub-sample

Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	FE	FE	FE	FE	FE	FE
GDP_REAL	4.005* (0.053)	3.081*** (0.000)	3.046*** (0.000)	3.309*** (0.000)	1.576 (0.161)	2.947*** (0.000)
POP	0.892 (0.850)	1.136 (0.616)	0.329 (0.882)	0.429 (0.842)	0.516 (0.860)	0.787 (0.712)
WEIGHTED_DISTANCE	-0.003 (0.991)	-0.108 (0.591)	-0.053 (0.790)	-0.109 (0.582)	-0.073 (0.723)	-0.101 (0.616)
GDP_G	3.402 (0.272)					
WORLD_GDP	4.939 (0.446)					
CDS	-0.229** (0.022)					
TRADE	0.340 (0.282)	0.768** (0.025)	0.546* (0.073)	0.445 (0.139)	2.064*** (0.007)	0.495* (0.104)
UNEMPL	-6.542 (0.213)	-0.733 (0.767)	-4.417 (0.167)	-3.089 (0.235)	-5.232* (0.087)	-0.934 (0.706)
TELE	2.189 (0.573)	3.274** (0.033)	3.838** (0.012)	3.778** (0.012)	5.307*** (0.008)	3.531** (0.021)
TAX	-1.740 (0.668)	-1.883 (0.355)	-2.772 (0.155)	-2.885 (0.136)	-3.505* (0.091)	-2.662 (0.174)
ULC	-0.813 (0.596)	-1.885** (0.043)	-1.621* (0.075)	-1.088 (0.233)	-1.429* (0.100)	-1.499* (0.101)
COR		-0.218 (0.216)				
CR_RISK			0.067* (0.086)			
INSTIT				0.384** (0.014)		
NAT_RES					0.646 (0.297)	
Lag(FDI)	0.083 (0.448)	0.009 (0.912)	0.000 (0.999)	0.006 (0.937)	0.017 (0.843)	0.014 (0.859)
TIME(2008)	0.655** (0.038)	0.223 (0.368)	0.222 (0.372)	0.187 (0.448)	0.107 (0.682)	0.244 (0.327)
R-squared (overall)	0.319	0.321	0.337	0.348	0.364	0.325
Number of observations	111	193	198	198	184	198

Notes: Model 1 includes gravity variables (GDP, POP and WEIGHTED DISTANCE), world and country-specific macroeconomic variables (GDP_G, WORLD_GDP, CDS, TRADE, UNEMPL, TELE, TAX and ULC). Models 2 through 5 include policy and institutional risk variables (COR, CR_RISK, INSTIT and NAT_RES). Models 1 through 6 include also lagged value of the dependent variable (FDI). Table 5 shows FE specification for each model based on Hausman's test results. All variables (expect FDI, GDP and POP) are taken as ratios or in percent.
*, **, and *** represent significance at 10, 5, and 1 percent, respectively.
P-values are shown in brackets. The null hypothesis for the Hausman test is that the difference in coefficients between fixed effects and random effects specifications is not systematic. Thus a small p-value (<0.05) suggests the rejection of the random effects specification.
Source: Authors' calculation.

5 CONCLUSION

The analysis presented in this paper has enabled identification of several key determinants of FDI flows into Western and Eastern European countries, and highlighted the significance of different policy and institutional factors for the attractiveness of these countries for foreign investors. By using both traditional and more specific variables and a longer period (1994-2012), we extend the previous research work on FDI, which focuses mainly on European Union countries as a homogeneous group of economies. Our research provides additional support to the common view that the traditional location factors (GDP, population, trade openness, unemployment, infrastructure endowment, tax rate and unit labour costs) are important determinants of FDI into different European countries. At the same time we find that country-specific characteristics such as economic growth, unit labour costs, and credit risk contribute to the differences in the FDI pattern across EU-15 and CEE countries. Policy and institutional quality factors also play an important role in explaining the increasing attractiveness of both groups of countries for foreign investors.

The results of an analysis of indicate that market-seeking motives (proxied by GDP, population and trade openness) are important drivers of FDI to all European countries. Investigating the importance of FDI motives for EU-15 and CEE countries as separate groups shows that efficiency-seeking motives (proxied by infrastructure endowment) have significant effect on FDI in both regions, while growth in GDP, unemployment and tax rates seem to influence FDI only in the group of CEE countries. In line with previous empirical research (Bevan and Estrin, 2000; Carstensen and Toubal, 2004; Holland and Pain, 1998; Stoian and Filippaios, 2007), the explanatory variables that purport to measure the significance of policy and institutional environment such as corruption, credit risk, and quality of institutions are found to have a significant influence on FDI in Europe. When total sample is divided into two sub-samples (EU-15 and 11 CEE countries) this effect remains strong; while quality of institutions seems to be important FDI determinant only in the group of CEE countries, natural resource availability is a significant factor for more developed EU-15 countries.

To the best of our knowledge this is the only paper that investigates the marginal effect of macroeconomic, policy and institutional quality factors on FDI in different European countries based on their relative performance. We ranked all the countries in our sample based on the index of relative dominance of FDI flows and investigated the factors that determine FDI in each group. Our results show that the top ten FDI performers are able to attract significant amount of FDI because of their macroeconomic stability and high level of institutional development. For the group of countries with low FDI dominance we find that policy and institutional quality factors have strong explanatory power; credit risk and quality of institutions are significant determinants of FDI. Our findings have strong policy implication for the group of less developed European countries where the governments'

efforts should be directed to creating stable political and institutional environments, as well as appropriate incentives for foreign investors.

Unfortunately, the research does have some limitations. In the first place, we were not able to differentiate the origin of FDI in our sample (in case of the EU-15). Thus, we have been limited in our analysis on the expected (negative) impact of distance (as a location factor) on FDI attractiveness for different groups of European countries. In addition, the empirical results are derived from a sample of transition economies, which include only new EU member states. Thus, the study will improve if candidate member states (e.g., Macedonia, Bosnia and Herzegovina, Albania, Serbia and Montenegro) are included in the analysis. This will help us investigate the role of different macroeconomic, policy and institutional factors in explaining FDI flows attracted by countries at different stages of transition process – the so-called "laggards" and "leaders". This analysis is left for future research.

To summarize the discussions on model variables and data sources, the table below displays both dependent and explanatory variables and their expected impact on FDI. The observation period is 1994-2012. Time dummies for different major events (Eurozone and EU membership effects) are also included in the table.

TABLE A1
Dependent and explanatory variables

Variable	Explanation	Data source	Expected sign
Dependent variable			
FDI	Foreign direct investment, net inflows (BoP, current US$). The data is annual and covers the period 1994-2012	World Bank (WDI Database, 2014)	
Explanatory variables			
GDP_REAL	Real gross domestic product (in 2005 US$), proxy for market size	World Bank (WDI Database, 2014)	+
POP	Total population, proxy for market size	World Bank (WDI Database, 2014)	+
W_DISTANCE	Weighted distance calculated as the sum of bilateral distance to all source countries multiplied by the ratio of GDP of source country in year t to all source countries' GDP in year t	WIIW Database (2014), OECD (2014)	–
GDP_G	Annual real growth rate in GDP, proxy for market demand	World Bank (WDI Database, 2014)	+
WORLD_GDP	Historical World GDP Growth Rate	World Bank (WDI Database, 2014), International Financial Statistics of the IMF (2014)	+
CDS	5-year credit default swap spread	Bloomberg Professional Service (2014)	–
TRADE	Level of imports plus exports (in US$) of the host country as a percentage of its GDP (in US$), proxy for trade openness	World Bank (WDI Database, 2014)	+
UNEMPL	Unemployment rate, proxy for macroeconomic stability	World Bank (WDI Database, 2014)	–
TELE	Telephone lines (per 100 people), proxy for infrastructure endowment	World Bank (WDI Database, 2014), International Telecommunications Union (2014)	+
TAX	Statutory corporate income tax rates, proxy for macroeconomic stability	Mintz and Weichenrieder (2010), Edwards and Mitchell (2008), Keen, Kim, and Varsano (2006), KPMG's Corporate and Indirect Tax Surveys (2014)	–

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Variable	Explanation	Data source	Expected sign
Explanatory variables			
ULC	Gross monthly wages in current US$, as share of GDP per employment, proxy for unit labour costs	WIIW Database (2014), OECD (2014)	–/+
COR	Transparency International's Corruption Perceptions Index (TI), on a continuous scale from 0 (squeaky clean) to 10 (highly corrupt), proxy for institutional risk	Transparency International Annual Reports, 1995-2012	–
CR_RISK	Moody's Sovereign Credit Rating, on a continuous scale from 0 (the lowest possible rating) to 20 (maximum creditworthiness), proxy for political risk	Moody's (2014)	+
INSTIT	First principal component of control of corruption, political stability, government effectiveness, regulatory quality, rule of law, and voice and accountability	Worldwide Governance Indicators (WGI)	+
NAT_RES	First principal component of gross fixed capital formation, gross domestic product, gross domestic product per capita, gross domestic savings and total natural resources rents	World Bank (WDI Database, 2014)	+
TIME	Temporal (year) dummy	A dummy used to control for different time periods or announcement effects	+

Source: Authors' calculation.

In order to summarize the information contained in many socio-economic factors we use principal component analysis (PCA). This permits the reduction of the number of variables used in the estimation and yet still retains a substantial part of the information contained. We perform PCA using the World Bank's Worldwide Governance Indicators (WGI) and several other variables used as proxies for natural resources availability following Sinha (2012). We estimate the first principal component using the component variables listed below and create two new independent variables – INSTIT and NAT_RES. The former is a proxy for the overall institutional quality in a host country and the latter is a proxy for the availability of natural resources and the ability of the country to process these resources using technology and skill.

TABLE B1

Component variables of INSTIT and NAT_RES

Component	Definition	Expected effect
INSTIT		
Control of corruption	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	+
Political stability	Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.	+
Government effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	+
Regulatory quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	+
Rule of law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	+
Voice and accountability	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	+
NAT_RES		
Gross fixed capital formation	Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. According to the 1993 SNA, net acquisitions of valuables are also considered capital formation. Data are in current U.S. dollars.	+

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Component	Definition	Expected effect
NAT_RES		
Gross domestic product	GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	+
Gross domestic product per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	+
Gross domestic savings	Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption). Data are in current U.S. dollars.	+
Total natural resources rents	Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	+

Source: [http://info.worldbank.org/governance/wgi/index.asp] and [http://data.worldbank.org/indicator/all].

To study FDI dominance among the countries in our sample we compute the Index of Rank Dominance (IRD) as outlined in Bhanu Murthy (2011). Based on this Index we separate the total sample into two sub-samples: Top 10 performers and others. The IRD is a measure of continuous dominance by ranks and is computed the following way:

Eq. (C1)

$$I_{RD} = \frac{\sum\limits_{i=1994}^{2012}(Rank\ Score)_i}{Maximum\ Rank\ Score \times No.\ of\ years}\ ,$$

where:
I_{RD} is the Index of Rank Dominance;
Rank Score is 26, 25, 24, .., 2, 1 (in decreasing order of rank);
No. of years is 19.

We also present the Relative Index of Rank Dominance (RIRD) which provides a measure for relative dominance and is computed as:

Eq. (C2)

$$RIRD = \frac{I_{RD_i}}{\sum\limits_{i=1}^{26} I_{RD}}$$

TABLE C1
Index of Rank Dominance of FDI Inflows for the sample of 26 EU countries during the period 1994-2012

Rank	Country	Score	IRD	RIRD
1	United Kingdom	468	0.9853	0.0530
2	Luxembourg	456	0.9589	0.0516
3	France	445	0.9358	0.0503
4	Spain	390	0.8924	0.0480
5	Belgium	415	0.8737	0.0470
6	Germany	395	0.8662	0.0466
7	Poland	305	0.8449	0.0454
8	Italy	317	0.8342	0.0449
9	Netherlands	366	0.8026	0.0432
10	Sweden	338	0.7735	0.0416
11	Czech Republic	244	0.7625	0.0410
12	Portugal	221	0.7270	0.0391
13	Latvia	80	0.7018	0.0377
14	Ireland	267	0.6679	0.0359
15	Denmark	226	0.6608	0.0355

Rank	Country	Score	IRD	RIRD
16	Finland	213	0.6594	0.0355
17	Hungary	260	0.6516	0.0350
18	Greece	141	0.6184	0.0333
19	Austria	259	0.6184	0.0333
20	Croatia	139	0.6096	0.0328
21	Romania	196	0.6068	0.0326
22	Slovakia	137	0.6009	0.0323
23	Lithuania	79	0.5197	0.0279
24	Bulgaria	157	0.5164	0.0278
25	Estonia	94	0.4947	0.0266
26	Slovenia	63	0.4145	0.0223

Source: Authors' calculation.

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Anatomija destrukcije: politička ekonomija hrvatskog visokog školstva

An Anatomy of Destruction: the Political Economy of Croatian Higher Education

Anto BAJO, PhD
Institute of Public Finance, Smičiklasova 21, 10000 Zagreb, Croatia
e-mail: anto.bajo@ijf.hr

In February 2104, Jesenski and Turk the publishers issued the book *An Anatomy of Destruction: the Political Economy of Croatian Higher Education* by Professor Petar Filipić from Split University's Economics Faculty. The book consists of 15 chapters that, together with the introduction, list of references, index and short notes about the writer constitute a whole of 287 pages bound in a cover with a striking illustration on the cover. The writing is supplemented with 15 graphs and 37 tables that provide the analytical contribution of the author to a more complete understanding of the system by which higher education is financed in Croatia. The author has made use of 82 literature references, parts of books of older dates and scholarly and expert articles and project studies of more recent times.

For a number of years the author has studied the higher education system, not only out of dry economic curiosity but also in the glass of socio-economic and political changes and events that as a member of the academic community he has personally witnessed. In the thematic units the author critically re-examines, and provides an insight into, the state of the higher education system in Croatia.

After a foreword, in the first chapter the author explains the reasons for the existence of the book, and in the second gives an account of the problems he met in the process of data collection. Here already the reader is introduced to the key weakness of the system of higher education – lack of transparency and excessive discretion in management and decision making. In part three, the author expounds his proposition about the neo-liberal paradigm and higher education in Croatia, which he connects to the greatest number of the reasons for the origin of the existing structural problems in higher education, explained in detail in the subsequent chapters.

Part four is a picture of Croatian higher education or a story of the market for services in higher education. It is in fact a sketch for the understanding of a system that works according to a semi-market and a semi-state principle. The behaviour of individuals and institutions depends directly on the financial situation in the country or on the market, and the fifth part of the book analyses the work and functioning of institutions competent for the evaluation of tertiary education facilities and scientific institutions. Doubt is voiced as to the objectives of accreditation that have been transformed into the fulfilment of quantitative goals according to which higher education facilities are evaluated and according to which their fate is determined.

Part six discusses the many dilemmas that have arisen with the development of private colleges in conjunction with the gradual erosion of the positions of the public facilities and the preferential treatment of private colleges through laws and regulations as well as by direct lobbying via the mediation of public policies. No one sensible can be against private education, but if the state is not supporting the public sector, it would be advisable at least to ensure equal conditions for the two sectors. In part seven, there is a well-grounded criticism of the system of ineffective funding and academic silence that the system supports. The need to rethink

the whole of the system consisting of budget, the main source of funding, the university and its faculties, the students and the social environment is subjected to well-founded criticism. If at least one part of the unit in the analysis is missing, it is hard to expect the elaboration of a common-sense strategy or a good law to govern the area of higher education.

Parts eight and nine are directed towards the problem of promotion and excellence. In brief, as a result of the non-existence of any consistent scientific policy, individuals are encouraged to adjust their academic excellence to the criterion of maximum utility and minimum cost. In truth, most teachers and associates achieve with great effort references of academic excellence and have worthwhile results. However, for the author what is an important problem is the incoherent and poor system within which individuals seek (and find) shortcuts to undeserved privileges. Unluckily, it is these very individuals that set the criterion for the whole academic community, which has not found any way to prevent the erosion of the system through the existing legislative background. Chapter nine is a discussion about excellence that diminishes excellence and the questions concerning the established criteria for the evaluation of academic books and science papers. Chapter ten analyses the role of the trade unions and their submergence into the system for the maintenance of the status quo.

The two next chapters (eleven and twelve) are dedicated to the happiest part of the populations of Croatian society – the students and their fortune – they are happy, but they are also open-handedly funded by state subsidy programmes.

In chapter thirteen, the author refers to the need for a moral revision of the system of higher education and for improvement in governance. In the last chapter he criticises the short-sightedness implicit in the doctrine of neo-liberalism and refers to the need to develop real and not merely formal university autonomy, which is not in the domain of the academy and the government. The universities still have to win their way to real autonomy, which would mean a fundamental change in the manner in which colleges and universities are financed and organised.

Professor Filipić shows fairly clearly the economic effects of the many "political and policy" interventions of representatives of government, which frequently have too little understanding of the organisation, structure, financing and all the other accompanying problems of the higher education system in the phases of transformation. Unfortunately, this lack of understanding has spilled over onto other stakeholders. The Croatian system of higher education is far from any serious transformation, for in its mind set it is deep in the past time of the egalitarian provision of goods and services.

The author refers to the many structural difficulties of higher education, and is often indeed too mild in the description of the stakeholders and their decisions, the consequences that they have had on society and the derogation of the importance

of higher education in society. Although the author links most of the structural problems of higher education in Croatia with the neo-liberal paradigm, the reader does not necessary have to agree with this interesting and provocative thesis, for it seems that it is closer in Croatia to an anarchic-cum-liberal paradigm, with weak and opaque institutions. And after all, when was the liberal doctrine used and dominant in higher education in social communities in this region?

There is no doubt that the author of the book, through a semi-relaxed style of writing, is addressing the general population of readers who are not necessarily economists, engineers, lawyers or philosophers. In fact, every interested individual can find "a truth for himself or herself" in the book in the effort made to explain and understand the trends in the higher education of a country in the process of transformation.

The political economy of Croatian higher education would perhaps be better called *the political economy of the Croatian university* (which does not actually exist in operational terms). In a possible second edition the book might have a still more vigorous review of the practice (and why not financial too) management and organisation of the universities and colleges. It would not hurt if the author were to delve a little into the link between family and management in the Croatian academic community, the many campuses that have been built but not moved into.

The major part of the book is founded on numerous domestic, foreign and personal scientific investigations by the author. This kind of evidence-based work, with a light and fluid manner of writing, will more easily capture the reader's interest. True, non-economists might find some parts of the writing wearisome because of the many figures, but the explanations underneath the tables are quite enough for a good insight into the structure and message of the individual chapters.

For the writing of books like this, it is necessary to combine knowledge, experience, curiosity and youthful buoyancy. Petar Filipić is one of the few professors and economists in Croatia to have succeeded. What is more, he has turned his temperament, dynamism and unrelenting examination of the surroundings into a book that could have a broader social and regional influence, and perhaps be a good motivation for us to reconsider our (lack of) engagement in the system of higher education policies.

This, then, is a useful work about the financing, organisation and functioning of the system of higher education that will not leave its readers indifferent. It moves far outside the framework of classic university teaching material, for in a considerably easier manner it addresses the broader population of readers. The themes discussed are important and will probably have their place in scholarly, professional and other social debates. There is no doubt that the book will draw the special attention not only of experts and scholars but also of students, journalists

and interested individuals. It would be worth translating into English and making available to a wider circle of readers, particularly those who deal with the policies of higher education, the democratisation of society, transparency of financing and ensuring equal and just access to higher education in Europe and elsewhere. The book could be used as a kind of guide for the writing of similar works in the countries of Central and Eastern Europe.