Tax expenditures and the efficiency of Croatian value added tax

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Abstract

The main aim of this paper is to provide a systematic overview of value added taxation in Croatia along with main changes in relevant legislation and to estimate total amount of tax expenditures. Results show that the proportion of tax expenditures in GDP in Croatia in 2010 amounted to less than 4%, a proportion lower than in any of the EU new member states, as well as almost twice as low as the EU-27 average. It can be concluded that the Croatian value added taxation system is efficient in this way, as was additionally shown by an analysis according to which Croatia in 2010 had better efficiency indicators than all the observed EU member states. The Croatian VAT system is mainly harmonized with EU directives, but abolition of the zero rate is still expected; this will increase government revenue by approximately 0.4-0.8% of GDP, depending on a chosen scenario. It has been suggested that a detailed analysis of the overall value added taxation system should be initiated, with the aim of optimizing cost-benefits. The main focus should be placed on the determination of the optimal VAT registration threshold, the costs and benefits of the introduced reliefs and exemptions in the tax system and the potential effects of the repeal of the zero rate.

Keywords: value added tax (VAT), tax expenditures, efficiency, the Croatian economy, European Union

1 INTRODUCTION

At the level of consolidated general government, Croatia allocated 39.9% of GDP for the financing of public needs in 2010 (Ministry of Finance, 2012). Such heavy public consumption requires the provision of sufficient revenues, whose main sources are taxes. The tax burden at the level of Croatian general government amounted to 33% of GDP in 2010, significantly lower than the European average of 39.5% of GDP in 2010 (Eurostat, 2012a)[1]. On the other hand, the tax burden is generally heavier in the old than in the new EU member states. Still, the tax burden in Croatia is approximately 2 percentage points higher than the unweighted tax burden average of new member states, which amounted to 31.2% of GDP in 2010 (Eurostat, 2012a).

Economic theory generally supports the model based on a heavier reliance on consumption tax revenues, which is especially suitable for transition countries. Consumption taxation is considered to be simpler and more efficient and is less sensitive to inflationary effects. The Croatian taxation model, then, which is based on heavier taxation of consumption, should not be changed (Kuliš, 2007a:1). According to European Commission (2010:3), several member states have recently increased VAT rates, either as a response to the needs for consolidation resulting from the crisis or in the context of a longer-term shift towards indirect rather than direct taxation. The latter shift can be rationalised by the relative efficiency

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[1] The tax burden in this context comprises total tax revenues and social security contributions paid to the state at the level of general government budget.

of consumption taxes, consumption being a broader and more stable base than profits and incomes. The broader base allows for lower rates, thereby reducing the distortive effects of taxation, with favourable effects on growth and employment (European Commission, 2010:3).

According to data in financial literature, the idea of turnover taxation by applying the value added tax (VAT) appeared for the first time in 1918 or 1919, but it was the European Union that had a special importance in the creation and introduction of VAT. VAT was gradually introduced in all member states of the European Union, and it was soon introduced in some other countries that were not members of the EU. Today it is applied as a taxation form of final consumption in all countries all over the world, except in some federal states, including the United States of America (Cindori and Pogačić, 2010:227-228).

The main aim of this paper is to provide a systematic overview of value added taxation in Croatia along with the main changes in relevant legislation and, moreover, to estimate the total amount of tax expenditures. Thereby a special emphasis will be placed on the determination of the main causes of the size of tax expenditures in VAT and a parallel analysis of Croatian tax expenditures and the efficiency of the VAT system and of those in the EU new member states will be made. The results will show that the proportion of tax expenditures in GDP in Croatia in 2010 amounted to less than 4%, a lower proportion than in any of the EU new member states, as well as almost twice as low as the EU-27 average. It can be concluded that Croatian value added taxation system is efficient in that way, which was additionally shown by the analysis according to which Croatia in 2010 had better efficiency indicators than any of the observed EU member states.

After the introduction, in the second part of the paper the Croatian value added taxation system will be described in detail along with all the important changes in VAT legislation. The third part of the paper deals with tax expenditures in comparison with EU member states. The fourth part is oriented to a consideration of the efficiency of the Croatian VAT system with standard measurements and in comparison with EU member states. This is followed by a conclusion.

2 VALUE ADDED TAX IN CROATIA

Until the introduction of value added taxation, consumption in Croatia was taxed by the tax on products and services. Numerous tax rates and exemptions led to difficulties in the implementation of regulations and control of tax collection, which created favourable conditions for tax evasion. From 1993 to 1995 the number of rates of tax on turnover was gradually lowered, which indicated certain preparations for the introduction of VAT (Kuliš, 2007b:25).

The House of Representatives of the Croatian Parliament at its plenary session that took place on 21st June 1995 adopted the Value Added Tax Law (OG 47/95), while the application of VAT Law was prescribed in detail by the VAT Rules (OG

60/96). VAT Law should have officially entered into force on 1st January 1997. Still, by the Law on the Postponement of the Application of the VAT Law official application was postponed to 1st January 1998. It was assumed that the introduction of VAT might cause a possible inflationary effect. However, it in fact caused a single increase of prices of only 2.4%, in the first several months of 1998, while after only one quarter price levels stabilised. The biggest pressure on citizens' living standard after the introduction of VAT arose from the increase in utility sector prices, which increased by 2% in Koprivnica, the lowest rise, and by as much as 31.4% in Bjelovar (Kliment and Dražić Lutilsky, 2005:286).

From the beginning of the official application of VAT, the tax rate was uniform and amounted to 22% (Article 10 of VAT Law, OG 47/95). The subject of taxation was every delivery of goods or services in the country with compensation, own consumption, imported goods, deliveries of goods and services carried out with or without compensation or by beneficiary conditions to shareholders and members of their closer family, as well as to other recipients, if all other conditions prescribed by the VAT Law were met (Article 2 of the VAT Rules, OG 60/96).

After almost two years of VAT application, a great deal of lobbying from interest groups led to the introduction of the zero rate for certain products. Hence, from 1st November 1999 the Law concerning Amendments to the VAT Law (Article 1, OG 105/99) prescribed a new article that brought in the zero rate for bread, milk, books and textbooks, medicines, implants and other medical products of a similar nature (more details can be found in Article 4 of the Amendments to the VAT Law, OG 112/99).

From 1st June 2000 this list was expanded by another Law concerning Amendments to the VAT Law (OG 54/00) to cover scientific and scholarly journals. Other tax exemptions were also prescribed (like film screening services), new exemptions on import deliveries and so on. The Law concerning Amendments to the VAT Law (OG 73/00) additionally expanded the zero rate to cover certain services: public screenings of films, entering into force on 1st September 2000 and organising stays paid with transfers from abroad entering into force on 1st January 2001.

The Law concerning Amendments to the VAT Law (OG 90/05) brought in an additional tax rate of 10% on the provision of accommodation or accommodation with breakfast, half board or full board in all types of commercial catering objects, as well as on agency fees for the previously stated services with starting date of application of 1st January 2006. From 1st August 2007 the tax rate of 10% applied also to newspapers and magazines published daily and periodically, except on those that are fully or mainly filled with advertisement or on those that are used explicitly for advertising purposes (Law concerning Amendments to the VAT Law, OG 76/07).

The Law concerning Amendments to the VAT Law (OG 87/09), adopted at a plenary session of the Croatian Parliament on 10th July 2009, with the date of entry into force of 1st January 2010, significantly changed the VAT Law; this was due to

the harmonisation of Croatian regulations with Council Directive 112/2006/EZ of the European Union (for details on executed harmonisation see Vlada RH, 2010:3). This amendment also included a change from institutional to functional exemption for banking, financial, insurance and re-insurance services (OG 87/09).

As a consequence of the global economic and fiscal crisis, and with the aim of increasing budget revenues, on 1st August 2009 Croatia started to apply a standard VAT rate of 23%, instead of the 22% that had been in force up to that moment (Law concerning Amendments to the VAT Law, OG 94/09). Detailed formal application of VAT Law with all amendments was regulated by the VAT Rules (OG 149/09) that entered into force on 1st January 2010.

The last amendments of VAT Law at the moment of writing this paper were prescribed by the Law concerning Amendments to the VAT Law (OG 22/12) and include several significant changes that may be considered important for this research. Since 1st March 2012 the standard VAT rate has been increased from 23% to 25%, while a reduced rate of 10% is applied oils and fats of vegetable of animal origin, children's food and processed food on a basis of cereals for infants and small babies, delivery of water, except for a water available in shops in bottles or any other packaging, and to white sugar made from either sugar cane or sugar beets. Furthermore, this amendment also envisaged application of the reduced rate of 10% to the preparation of food and food serving in catering objects, as well as serving non-alcoholic beverages, wine and beer in these objects in line with special provisions. Moreover, this amendment also prescribed the increase of the VAT registration threshold from 85,000 to 230,000 kuna. The latter two amendments should enter into force on 1st January 2013.

The importance of VAT revenue as a proportion of general government budget revenue and of GDP is illustrated in table 1.

TABLE 1

Share of value added tax revenue in total tax revenues of the general government budget and in GDP (in billions kuna and in percentages)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP	208.8	228.9	247.4	266.7	291.0	318.3	345.0	335.2	334.6
General government budget revenues	82.9	89.3	96.4	103.1	112.3	126.7	134.7	128.1	123.7
Total tax revenues[a]	75.9	81.3	85.9	91.8	100.6	110.6	120.4	113.6	110.4
VAT revenue	26.0	28.1	29.9	32.2	34.9	37.7	41.3	37.1	37.7
Share in GDP	12.4	12.3	12.1	12.1	12.0	11.9	12.0	11.1	11.3
Share in total revenues	31.3	31.5	31.0	31.3	31.1	29.8	30.7	28.9	30.5
Share in tax revenues	34.2	34.6	34.8	35.1	34.7	34.1	34.3	32.6	34.1

[a] *Total tax revenues comprise tax revenues and social security contributions paid to the state at the level of general government budget.*

Source: Ministry of Finance (2012); author's calculation.

Total revenues from VAT in the analysed period 2002-10 amount on average to 34% of total tax revenue, while the average share in total general government budget revenue amounts to 30.7%. Nominally, VAT revenue in the period 2002-10 increased by 45%, from 26 billion kuna in 2002 to 38 billion in 2010. Still, the share of VAT revenue in GDP decreased by 1 percentage point in the observed period, mainly as a consequence of significant changes in the VAT Law, as already described in this part of the paper. Without any doubt, it can be concluded that VAT, along with social security contributions, is the most productive tax of the general government budget, covering the largest number of taxpayers[2].

3 TAX EXPENDITURES

Tax expenditures are defined as items in the analysed tax forms which represent a loss to the tax revenue of the central government budget, either because they reduce the tax base or because they reduce the tax liability (Bratić and Urban, 2006:133). According to OECD (1996:9) tax expenditures are concessions (reliefs) that fall outside tax norms or benchmarks. These norms include accounting conventions, the structure of tax rates, the deductibility of compulsory payments, provisions to facilitate tax administration, and norms related to international fiscal obligations. Tax expenditures can take a number of forms, including tax exemptions, allowances, credits, deferrals, reliefs, etc. (OECD, 2010:12). Tax expenditures are actually an instrument of interventionism which is used by the government to favour certain groups or categories of taxpayers (sectors, firms or individuals), and to encourage certain economic activities, branches or industries. Thereby the government wittingly accepts a decrease in its revenue (Bratić, 2011:40).

In the VAT system there are in total three reductions of the tax base and one reduction of the tax liability. Deliveries that reduce the tax base are deliveries not subject to taxation, deliveries exempted from taxation and zero-rated deliveries, while deliveries rated at the rate of 10% are deliveries that reduce the tax liability. Bratić and Urban (2006:172-177) in the analysis of tax expenditures estimate loss of government revenue from value added tax exclusively from deliveries rated with lower rates, while all other tax exemptions from deliveries in the country, import and export deliveries are excluded from the analysis[3]. In their analysis, they use the statistical report on VAT as a relevant source of total amount of deliveries. Table A1 in the appendix shows the amounts of taxable and non-taxable deliveries according to the statistical report on VAT (PDV-K, as it is called) in the period 2005-10. It should be stressed that data from statistical report PDV-K shown in table A1 do not include the total amount of all deliveries, since these data do not include special taxation procedures (exemptions) for small entrepreneurs, or deliveries of different

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[2] VAT revenues were up to 2008 the most significant tax revenue of the general government budget (on average 34.6% of total tax revenue in the period 2002-08). In 2009 and 2010, owing to a significant decrease in consumption caused by the global financial crisis (and associated VAT revenue decline), social security contributions have become the dominant tax revenue of the general government budget.

[3] Bratić and Urban (2006) elaborate only the zero rate, since at the moment of publishing of their paper the rate of 10% had not been introduced.

subjects that were excluded until 2010 due to an institutional exemption. According to the methodology applied in Bratić and Urban (2006:174-177), it is possible to calculate loss of revenue from value added tax because of zero-rated deliveries and deliveries rated at the rate of 10%, which is shown on table 2.

TABLE 2

Lost value added tax revenue because of zero-rated deliveries and deliveries rated at the rate of 10% in the period 2005-10 (in billions kuna)

	2005	2006	2007	2008	2009	2010[a]
Zero-rated deliveries	5.8	4.9	5.4	5.9	5.8	5.9
Taxable deliveries at the rate of 10%		1.0	1.3	1.5	1.5	1.6
Total	5.8	5.9	6.6	7.4	7.3	7.5

[a] *Preliminary data.*

Source: Author's calculation based on data from table A1 in appendix.

Loss of revenue from VAT due to zero-rated deliveries is calculated as the total amount of these deliveries multiplied by the standard VAT rate, while the loss of revenue from VAT due to taxable deliveries at the rate of 10% is calculated as the amount of these deliveries multiplied by the standard VAT rate and decreased by the amount of actually collected revenue at the rate of 10%. Thereby in the period 2005-08 the standard VAT rate of 22% was used, in 2009 the rate of 22,42% (weighted average of the rate of 22% for the first 7 months and of 23% for the next 5 months of 2009) and in 2010 the standard VAT rate of 23%. The amount of deliveries taxed at reduced rates increased from 26.3 in 2005 to 38 billion kuna in 2010. From table 2 it can be seen that the estimated loss of revenue from VAT due to the reduced rates amounted to 5.8 billion kuna in 2005 and rose gradually to 7.5 billion kuna in 2010. Cumulatively, the waiver of the state due to reduced rates in the period 2005-10 amounted to 40.5 billion kuna.

Reduced VAT rates are particularly of interest for this analysis. Council Directive 112/2006/EZ of the European Union (2006:46-47) prescribes the usage of one VAT standard rate that must not be lower than 15% and one or two reduced rates, but not lower than 5%. This actually means that Croatia is still not harmonized in that context with the EU directives. Table 3 shows the list of VAT rates applied in EU member states and in Croatia.

This table with the VAT rates applicable in the EU member states shows the relatively uneven taxation policies among them. Standard VAT rates range from 15% in Cyprus and Luxemburg to the highest 27% in Hungary. All the observed countries, except Denmark, apply at least one reduced VAT rate, while super reduced and parking rates are applied in some older EU member states only. Usage of zero rate is generally allowed only for export deliveries, since VAT on exported goods and services is paid in the land to which they are exported, i.e. in the land in which

these goods and services are consumed. Still, there are some deviations from this rule, so this privilege in an undetermined time period, i.e. "until the final VAT system establishment", is relevant mainly to some old member states that applied a zero rate at the time of the adoption of the Council Directive. When it is about new member states, the application of a zero rate is allowed only for a limited transitional time period. Until the end of 2010 Cyprus applied a zero rate to the deliveries of particular foodstuffs and beverages, as well as to deliveries of pharmaceutical products, drugs and vaccines, and Poland was allowed to apply zero rate to certain books and specialised periodicals. Malta was entitled to apply a zero rate to foodstuffs and pharmaceuticals until 1 January 2010, but according to European Commission (2012) data, as of 1 January 2012 Malta was still applying the zero rate, but will certainly be compelled to repeal this rate in the future.

TABLE 3

VAT rates applied in the EU member states and Croatia, situation at 1ˢᵗ January 2012

Country	Standard	Reduced	Super reduced	Parking	Zero rate
Belgium	21	6/12		12	Yes
Bulgaria	20	9			
Czech Rep.	20	14			
Denmark	25				Yes
Germany	19	7			
Estonia	20	9			
Greece	23	6.5/13			
Spain	18	8	4		
France	19.6	5.5/7	2.1		
Ireland	23	9/13.5	4.8	13.5	Yes
Italy	21	10	4		Yes
Cyprus	15	5/8			
Latvia	22	12			
Lithuania	21	5/9			
Luxembourg	15	6/12	3	12	
Hungary	27	5/18			
Malta	18	5/7			Yes
Netherlands	19	6			
Austria	20	10		12	
Poland	23	5/8			
Portugal	23	6/13		13	
Romania	24	5/9			
Slovenia	20	8.5			
Slovakia	20	10			
Finland	23	9/13			Yes
Sweden	25	6/12			Yes
United Kingdom	20	5			Yes
Croatia	23	10			Yes

Source: European Commission (2012); author's adjustment.

Since Croatia will soon join the EU, the abolishment of the zero rate is only the question of time. Nestić (2008:27) estimates that in the case of Croatia, products on which zero rate has been applied represent about 7.5% of total final household consumption and in the case of the introduction of a VAT rate of 10% for those products, the price level would increase by approximately 0.8%. By an analogous arithmetical estimate we can conclude that the introduction of a VAT rate of 5% on products on which the zero rate is currently applied, the increase of the price level would amount to approximately 0.4%. It is very likely that it would be only a single effect, which should not overflow to other prices and thus should not tend to lead to a permanent increase in the inflation rate (Nestić, 2008:27). Figure 1 shows the general impact of VAT introduction or a VAT rate increase on the level of prices.

FIGURE 1

Impact of VAT introduction or a VAT rate increase on general price level
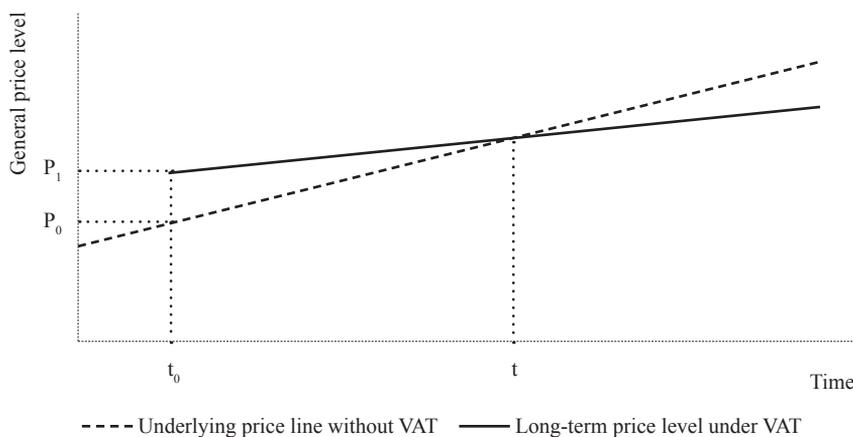
Source: Minh Le (2003:47).

According to Minh Le (2003:46-47) in a case in which VAT is revenue-enhancing, it will help the government to pursue tight monetary policy, and then VAT may even exert a downward pressure on inflation, i.e. in this case VAT is deflationary rather than inflationary. Figure 1 shows how the introduction, i.e. VAT rate increase leads to a once-and-for-all increase in the general price level from P_0 to P_1 in time period t_0. As the government collects more revenues and contracts the money supply, the rate of growth of the general price level starts to fall. At moment t these two price levels (with and without VAT introduction, i.e. the increase of a VAT rate) are equal and after that moment the long-term price level under VAT stays below the price line without the introduction of VAT (or without an increase in the VAT rate).

It should be emphasised that in Croatia the list of products eligible for the zero rate includes only basic goods like bread, milk, books, some medicines and certain

pharmaceuticals, medical aids, scientific magazines and the public showing of films. According to Copenhagen Economics (2007:8), typical price inelastic goods are basic goods consumed in larger shares by low income households, while price elastic goods typically are luxury goods consumed in larger shares by high income households. Hence, it can be concluded that in the case of Croatia the demand is price inelastic for the majority of goods that are currently taxed by the zero rate and that the increase of VAT rate would probably have just an insignificant effect on the total consumption of these goods. In other words, from the data of deliveries to which zero rate has been applied (see table A1 in appendix) it is possible to calculate the approximate amount of money that would have flowed into the government budget if these deliveries had been taxed at the rate of 5% and 10%. Estimated potential VAT revenue in case of applied VAT rates harmonized with the EU Council Directive is retroactively calculated for the period 2005-10 and the results are shown on table 4.

TABLE 4

Potential VAT revenue in the period 2005-10, in case of applied harmonized VAT rates with the EU Council Directive

	2005	2006	2007	2008	2009	2010
Value of zero-rated deliveries (billions of kuna)	26.3	22.5	24.4	26.6	25.7	25.8
Gross domestic product (billions of kuna)	266.7	291.0	318.3	345.0	335.2	334.6
Potential revenue, 5% rate (billions of kuna)	1.3	1.1	1.2	1.3	1.3	1.3
Potential revenue, 10% rate (billions of kuna)	2.6	2.2	2.4	2.7	2.6	2.6
Potential revenue, 5% rate (% GDP)	0.5	0.4	0.4	0.4	0.4	0.4
Potential revenue, 10% rate (% GDP)	1.0	0.8	0.8	0.8	0.8	0.8

Source: Author's calculation based on data from table A1 in appendix.

If Croatia had been applying the VAT rate of 5% in the period from 2005 to 2010 on deliveries taxed at the zero rate, the government would have collected somewhere between 1.1 and 1.3 billion kuna annually, while in case of the application of a VAT rate of 10% in the same period, the government would have collected twice as much, i.e. between 2.2 and 2.7 billion kuna annually. Hence it can be estimated that upon harmonization of the reduced rates with the EU guidelines the government revenue will increase by the amount equal to 0.4% of GDP in case of the application of a 5% VAT rate to deliveries that are currently taxed at the zero rate, or analogously 0.8% of GDP in case of the application of a VAT rate of 10%. From this brief analysis it can be concluded that the share of tax expenditures in GDP in Croatia at the moment the zero rates are repealed will decrease by 0.4, or 0.8 percentage points, depending on the applied reduced rate for deliveries that are currently taxed by the zero rate.

Besides the differences in definition of tax rates in EU member states and Croatia, one of the unequal criteria of the VAT system is also the defined registration threshold, i.e. the level of realized turnover in a certain tax period (usually in one year) that determines the conditions in which taxpayers (entrepreneurs) are obliged to register in the VAT system. Entrepreneurs that become a part of the VAT system have to charge VAT on all of their deliveries of goods and services, but have the right to deduct VAT that is displayed on their input accounts for acquired goods and services.

The level of threshold for VAT registration influences both tax revenues and compliance costs. A threshold that is too high may result in loss of tax revenues for the government, because of the non-registration of a certain number of taxable persons for VAT. On the other hand, a threshold that is set too low, leading to a relatively large number of small entrepreneurs participating in the VAT system, considerably burdens the tax administration and increases compliance costs (Kesner-Škreb and Medak Fell, 2008:2). Keen and Mintz (2004:574) stress that in choosing the optimal threshold for VAT, besides the desires to increase tax revenue and reduce administration and compliance costs, one should also take into account the minimization of the potential distortions arising from the differential treatment of firms above and below the threshold, but there are also links to be made with the design of optimal audit strategies. Kim (2005) extends this study by taking into account corporate tax evasion behaviour depending on the chosen registration threshold. VAT registration thresholds in the new EU member states and Croatia applied in September 2011 are shown on figure 2.

FIGURE 2

VAT registration thresholds in the new EU member states, EU-27 average and Croatia (thousands of euro)
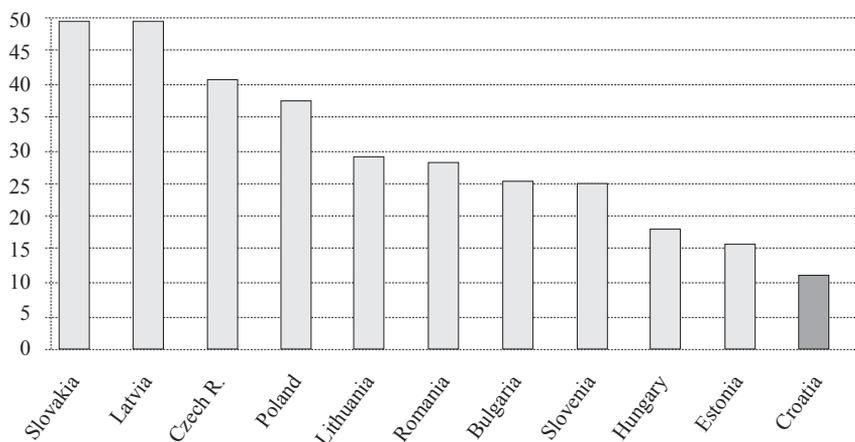
Source: European Commission (2011); author's adjustment.

Croatia with its registration threshold of 85 thousand kuna (equivalent to approximately 11.3 thousand euro) is above the minimum prescribed threshold of 5 thousand euro (European Commission, 2011), but is still trailing behind the new EU member states. It should be noted, however, that a number of new EU member states changed their levels of VAT threshold at the time of their accession to the EU (Kesner-Škreb and Medak Fell, 2008:2-3).

Also telling of the questionability of the present Croatian VAT registration threshold is the survey elaborated in Dimitrić (2004:361), according to which opinions about the adequacy of this threshold are divided among both enterprises and craftsmen. According to this analysis, among tradesmen there is a significant relationship between standpoints on the question of the VAT registration threshold and the size of annual turnover and annual income. More respondents with a lower turnover and income consider that this threshold is set too low, which means that they prefer to be or to stay outside the VAT system. Since the service industry is mostly represented in small trades, and in these trades input VAT is of less significance than in industries that are not labour-intensive, this opinion seems quite logical. To be outside the VAT system brings market competitiveness because lower prices can be formed. Besides that, the fact that in this case the input VAT is actually paid does not have any particular negative impact due to the high share of labour in the input structure. Among the interviewed craftsmen there also exists a significant and negative relationship between opinion concerning the VAT threshold level of 85,000 kuna and the seasonal characteristics of the craft. Therefore, tradesmen whose activities are not seasonal mainly consider that the threshold of 85,000 kuna is set too low. Seasonal trades are in a privileged position since in the season they realize the optimal ratio of inputs and outputs and VAT does not represent a significant burden to them (Dimitrić, 2004:361). According to already mentioned Amendments to the VAT Act (OG 22/12), the Croatian VAT registration threshold will be increased to 230 thousand kuna (somewhere in the region of 30.5 thousand euro) starting from 1st January 2013. This change should favour the operations of entrepreneurs with lower turnovers and thus reduce their business costs, as they will no more be required to determine their tax liabilities or submit the legally prescribed tax forms. Taxpayers who wish to stay in the VAT system can do so, but are then obliged to remain registered in the VAT system for another 5 calendar years (Kuliš, 2012:4).

Up to now the main focus of this part of the paper was placed on reduced rates and the defined VAT registration threshold. It was already mentioned earlier in the text that the estimations of tax expenditures in the former part of the paper raise several issues primarily due to the data source used (statistical report on VAT – PDV-K), but also due to non-inclusion of all factors that may have impacted this amount. If we abandon these considerations on factors that impact reduction or extension of the tax base, the amount of tax expenditures in VAT can be estimated as the difference between the VAT tax base multiplied by a standard VAT rate and actu-

ally collected VAT revenue in a specific year, which can be shown with the following expression:

$$TE = B \cdot r - R \qquad (1)$$

where *B* represents VAT base, *r* standard VAT rate, and *R* actually collected VAT revenue. The product of the tax base and the standard VAT rate shows the absolute amount that the government would have collected in a situation in which all taxable goods and services were taxed at the uniform tax rate. Still, it has to be emphasised that the situation in practice is not as simple as that. Therefore, for the purpose of this analysis one important limitation has to be imposed, assuming that the application of a uniform VAT rate would not imply any economic distortions (like changes of prices, level of consumption, tax evasion and so on).

The main methodological obstacles derive from the absence of publicly available data on VAT base. However, the closest assessment of the VAT base is the amount of expenditure on final consumption, since the VAT exactly represents a tax on final consumption. National accounts contain data on final consumption expenditure (Item P3 of the national accounts). Nevertheless, the figures provided under Item P3 in national accounts do not exactly match the theoretical potential VAT base, since they measure consumption at market prices, that is, including VAT. VAT revenues should therefore be removed from this amount since the theoretical basis for taxation should not include the tax itself (OECD, 2011:107). In other words, it is necessary to transform the equation (1), which can be expressed as:

$$TE = (FC - R) \cdot r - R \qquad (2)$$

where *FC* denotes the amount of final consumption expenditure and all other variables are denoted as before. According to OECD (2011:107-108), final consumption expenditure and VAT base differ in several items and these are: production of non-market output by the government, imputed rents, tax purchase of dwellings and the exemption of financial and insurance services[4]. Due to limitation of data availability in national accounts, the aforementioned adjustments that need to be made in order to obtain a more accurate assessment of the theoretical VAT base cannot be made within the scope of this paper. Therefore, in all analyses in this paper we used final consumption expenditure as an approximation of the theoretical VAT base. These discrepancies between the theoretical and such an estimated VAT base can obviously generate some errors in calculation, but the estimation of the real magnitude of these errors falls outside the scope of this paper.

Figure 3 shows the estimated share of VAT tax expenditures in the GDP of EU new member states, the EU-27 average and Croatia in 2010, while total statistics

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[4] For a detailed overview on methodology of harmonization of the final consumption expenditure and the theoretical VAT base see OECD (2011:107-108).

on VAT tax expenditures in the period 2006-10 are shown in table A2 in appendix. For the calculation of VAT tax expenditures defined by the expression (2) and shown in table A2 there were used several different sources. For data on final consumption expenditure and gross domestic product of all observed EU countries and Croatia, the Eurostat database has been used (2012b; 2012c). For collected revenues from VAT of EU member states the Eurostat database was used (2012a), while for Croatia this indicator was available in time series of the Croatian Ministry of Finance (2012). Data on VAT rates of the EU member states according to different time periods are available in European Commission (2012), while in case of Croatia the relevant legislation framework was introduced in the previous part of the paper that examines VAT in Croatia. Used in the calculation of the VAT tax expenditures for a certain year was the average VAT rate in that year, calculated as a weighted average of all applied standard rates in that year, where weights were chosen in accordance with the duration of application of a certain VAT rate. For example, in case of Croatia in 2009 we used the average VAT rate of 22.42% calculated by the summation of the standard VAT rate of 22% multiplied by 7/12 (since the VAT rate of 22% applied in Croatia in the first seven months of 2009) and the standard VAT rate of 23% multiplied by 5/12 (since the VAT rate of 23% was applied in the last five months of 2009).

FIGURE 3

Estimated tax expenditures of EU new member states, EU-27 average and Croatia in 2010 (% of GDP)
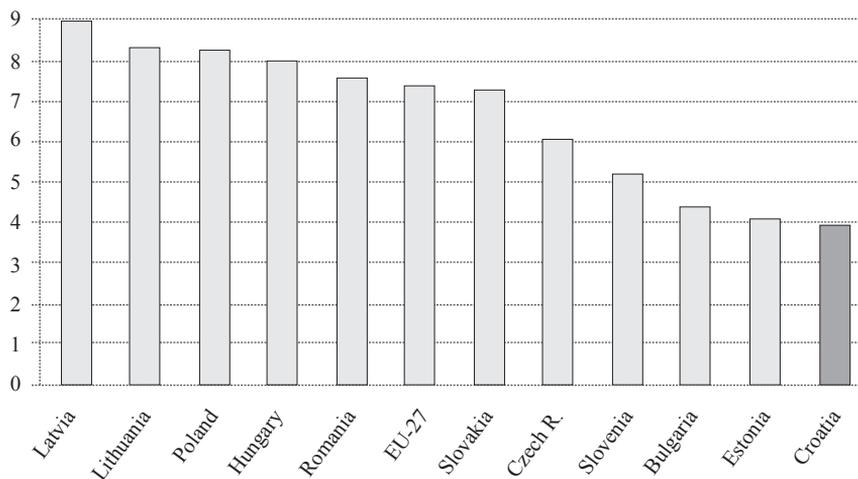
Source: Author based on data from table A2 in appendix.

In 2010 Croatia recorded a share of tax expenditures in GDP of slightly less than 4%, the lowest among all the observed new member states of the European Union

(counting Croatia as a new member state), as well as lower than the average of all EU member states. Relatively similar shares as in Croatia were recorded in Estonia and Bulgaria, but in the majority of all other countries this share was significantly higher. The highest share of tax expenditures in GDP, of almost 9%, was recorded in Latvia, followed by Lithuania, Poland and Hungary with the shares of approximately 8%. The average of all EU countries was almost twice as high as the share of tax expenditures in Croatia, so it can be stated that the Croatian value added taxation system is relatively efficient in that manner.

However, it was already stressed (see figure 2) that the VAT registration threshold in Croatia is the lowest compared to all observed countries, which could lead to the conclusion that there exists some kind of connection between the VAT registration threshold and estimated tax expenditures in VAT. Figure 4 shows a scatter plot of the share of VAT tax expenditures in GDP and VAT registration thresholds.

FIGURE 4

Scatter plot of VAT tax expenditures (% GDP) and VAT registration thresholds
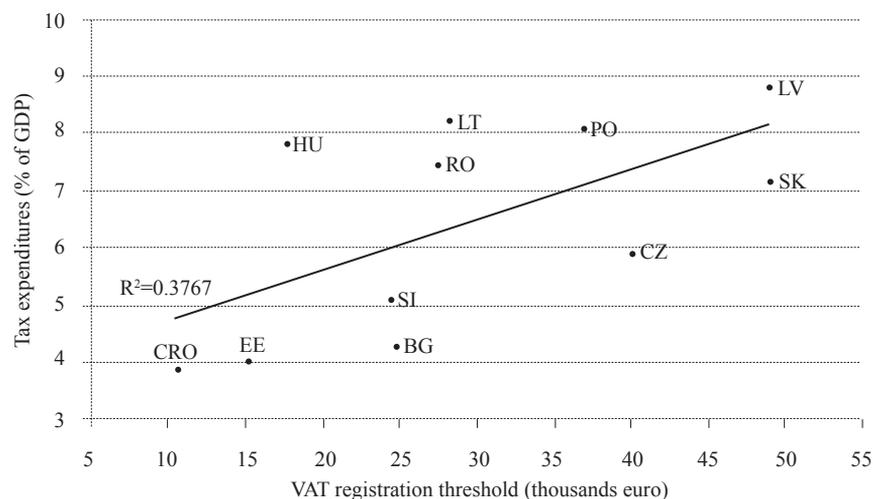
Source: Author's calculation.

The regression line shows that there exists a positive relationship between the prescribed VAT registration thresholds and the share of tax expenditures in GDP. Countries with lower VAT thresholds mainly have also lower share of tax expenditures in GDP and vice versa. From the determination coefficient (R^2 statistics) of 38% it can be concluded that the defined VAT registration threshold is relatively important causal factor of the total amount of tax expenditures; this relationship may be considered significant up to the significance level of 4.46%[5]. Therefore it

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[5] p-value of F-statistics of the observed model.

is definitely necessary to initiate execution of a detailed analysis of the adequacy of the Croatian VAT registration threshold with the aim of optimization of the costs and benefits of the added value taxation system. Besides the VAT registration threshold, some other factors, like reduced rates and exemptions, also definitely have an important effect on total VAT tax expenditures. However, their contribution to total amount of VAT tax expenditures is almost impossible to quantify in this kind of analysis.

4 EFFICIENCY OF VALUE ADDED TAX

There is no generally accepted opinion on what is an efficient VAT system or what it should look like, but most controversies connected to VAT efficiency definitely refer to the application of different taxation rates. The Copenhagen Economics study (2007:4) stresses that uniform rates are a superior instrument to maintain a high degree of economic efficiency, to minimise otherwise substantial compliance costs and to smooth the functioning of the internal market. On the other hand, the use of reduced rates as a policy instrument is often advocated notably for health, cultural and environmental reasons to provide easier and more equal access to educational and cultural content and incentives for eco-innovation and knowledge-based resource efficient growth (European Commission, 2010:14-15). Taxation by the uniform tax rate is definitely more often represented by tax experts that consider that VAT should achieve exclusively fiscal and economic goals, while individuals who consider that VAT should also achieve some social goals usually vote for larger number of tax rates. Arguments for and against the uniform VAT tax rate are shown in table 5.

TABLE 5

Arguments for and against the uniform VAT rate

Reason	Arguments for the uniform VAT rate	Arguments against the uniform VAT rate
Regressiveness	The concept of regressiveness is hard to define unambiguously, since it is not a matter of indifference which base one looks at – income or consumption, or to which period the observation relates. However, any possible regressiveness should be corrected by social transfers or by progressiveness of other taxes.	The term regressiveness is usually linked to annual income, so a single rate VAT system burdens the impoverished more, i.e. it generates unfavourable social effects.
Tax administration	The introduction of several tax rates requires a detailed definition of taxable products, complicates tax administration and leads to an increase of the administrative costs compared to a system with uniform rate.	Taxation costs do not depend on number of rates only, so that technical aspect should not have any impact on decisioning on number of rates and taxation policy.

Reason	Arguments for the uniform VAT rate	Arguments against the uniform VAT rate
Tax evasion	Taxpayers will attempt to put all products that are not unequivocally defined in lower rate categories, which opens the door to corruption and lobbying, as well as to tax evasion.	Lower tax rates (and consequently lower prices) may have an impact on decisions of certain groups of consumers to stop spending in the informal economy (for example in the case of construction or miscellaneous repairs).
Prices	Lower VAT rates are not a guarantee of lower prices. In a free market, prices are formed according to supply and demand. Traders set their prices according to the elasticity of demand, that is, according to what the market will bear, irrespective of the rate of taxation.	Lowering the VAT rates on certain products/services definitely leads to the lowering of prices on those products/services, and especially in business activities with pronounced competitiveness.
Consumer preferences	Various rates of VAT lead to distortions of consumer preferences and the absence of the neutrality principle. For example, taxation of luxury products at higher rates will discourage the impoverished from occasionally upgrading their consumption with more expensive products.	It is acceptable to allow some key sectors to apply reduced rates for certain products or services in order to foster economic growth and competitiveness. Application of reduced rates is often requested in the tourism sector, arguing that tourism will be in unfavourable position with regard to foreign competition where tourist services are taxed by lower rates.
Budget revenue	Lower VAT rates mean lower government budget revenues.	Loss of government revenue due to introduction of reduced or zero rates could be mitigated by increased consumption or increase of some other taxes (e.g. excise duties).

Source: Author based on Kesner-Škreb (1999), Copenhagen Economics (2007), Kuliš (2007a), Cindori and Pogačić (2010).

Another very important issue in the value added taxation system is linked to tax exemptions. Tax exemptions are classified in three groups: exemptions in the country, export and import exemptions. All exemptions in the country are without the right of deduction of input tax, while export products are exempted from payment of the VAT, due to the destination principle, but with the right to deduct tax calculated in their inputs (Kuliš, 2007b:29). Lejeune (2011:274) stresses that the EU VAT system has a relatively narrow tax base because of the prevalence of these

exemptions without a right of deduction[6]. However, where the input deduction is denied, the non-deductible VAT becomes a cost to the provider of the supplies of goods or services. That cost is then passed on to the consumers in a phenomenon referred to as cascading. Hence, VAT exemptions create distortions and uncertainty and keep the VAT system from being broad-based and neutral to business. On the other hand, regressiveness is not solved efficiently because these measures do not target low-income wage earners. Therefore, the prevalence of such VAT exemptions cannot be considered the best practice. Besides that, much litigation has arisen due to the wide range of exemptions and different interpretations by EU member states regarding the criteria for determining whether a transaction is subject to an exemption. From 2000 to 2009, 57 of 204 VAT cases (28%) referred to the European Court of Justice involved an exemption matter (Lejeune, 2011:274).

Exemptions are contrary to the principle of VAT as a broad-based tax. The continued relevance of many of the existing exemptions is questionable. Broadening the tax base by reducing the number of exemptions makes the tax more efficient and more neutral and offers a valid alternative to increasing VAT rates (European Commission, 2010:10). Bratić and Urban (2006:152) also agreed that the various exemptions and tax privileges complicate the tax system, increase the costs of tax collection and open up windows for tax evasion. Hence, it is absolutely necessary to make an analysis of the costs and benefits of the introduction of any form of tax expenditure into the existing tax system before their introduction. This is additionally proven by the recorded increasing trend of such analyses among different countries that tend to calculate costs and benefits of introduced reliefs and exemptions in the tax system which narrow the tax base or reduce the obligation of paying the tax (Bratić, 2011:39). Evaluation of tax measures refers to a policy review that assesses the performance of tax measures according to the following three criteria: relevance, effectiveness and efficiency. A relevance review answers the question whether the tax measure is consistent with policy priorities, and if it realistically addresses an actual need. An effectiveness review should provide an answer to the question whether a tax measure is meeting its objectives effectively, within budget, and without unwanted outcomes. An efficiency review answers the question whether the tax measure is the most appropriate and efficient means to achieve objectives, as compared to alternative design and delivery approaches (Lenjosek, 2004:19).

Since there is no clear idea of an efficient VAT system, it is impossible to determine a precise measure of VAT efficiency. In this part of the paper the most often used three measures of the VAT efficiency will be elaborated, along with all their advantages and disadvantages. Ebrill et al. (2001:40-42) define two measures of efficiency of the VAT revenue collection system and these are efficiency ratio (ER) and C-efficiency ratio (CER).

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[6] This also relates to VAT in Croatia since the Croatian VAT system is almost completely harmonized with the European system.

The efficiency ratio or the productivity ratio of VAT is defined with the following expression:

$$ER = \frac{R}{Y \cdot r} \cdot 100 \qquad (3)$$

where *R* denotes actually collected VAT revenue, *Y* denotes nominal GDP, and *r* standard VAT rate. The efficiency ratio shows what percent of GDP each percentage point of the standard VAT rate collects. However, this measure may be misleading since in principle VAT taxes consumption and not production, while GDP measures production and not consumption (Bird and Gendron, 2006:11). Thus the perfect efficiency ratio of 100% would be achieved only in case of the application of the uniform rate on production-type VAT (which is not applicable in our case since all EU countries, as well as Croatia, use the consumption-type VAT) and statistics would also be vitiated by the errors in GDP measurement (Ebrill et al., 2001:41). These issues can be easily bypassed by using the C-efficiency ratio, which substitutes consumption for GDP, and which can be expressed with the following formula:

$$CER = \frac{R}{FC \cdot r} \cdot 100 \qquad (4)$$

where *R* denotes actually collected VAT revenue, *FC* final consumption expenditures, and *r* standard VAT rate. As before, perfect C-efficiency ratio of 100% would be achieved only in the case of the application of a uniform rate, while in the case of the application of a zero rate or reduced rates of VAT on certain goods and services, the C-efficiency ratio would drop under 100 percent. On the other hand, the inclusion of investment in the VAT base, or a break in the VAT chain resulting in the taxation both of final consumption and some of the constituent intermediate goods, will tend to result in C-efficiency of over 100 percent (Ebrill et al., 2001:41-42).

Theoretically, a taxation system could be considered fully efficient in a case in which it covers the whole tax base (final consumption expenditure) by the uniform rate and when the tax administration manages to collect the whole tax liability. According to OECD (2011:106-113), one relatively appropriate indicator for that purpose is the VAT Revenue Ratio (VRR). VRR measures the difference between actually collected VAT revenues and revenues that could be theoretically collected in the case in which the whole VAT tax base is levied at a uniform tax rate, which can be shown with the following expression:

$$VRR = \frac{R}{B \cdot r} \cdot 100 \qquad (5)$$

where *R* denotes actually collected VAT revenue, *B* VAT tax base, and *r* standard VAT rate. As already elaborated in the text, a very good approximation of a VAT tax base can be expressed as the difference between the final consumption expenditure and actually collected VAT revenues. Thus, it is necessary to transform expression (5), as shown by the following equation:

$$VRR = \frac{R}{(FC - R) \cdot r} \cdot 100 \qquad (6)$$

where *FC* represents the amount of final consumption expenditure, and all other variables are denoted the same way as before. All three VAT efficiency indicators of EU new member states and Croatia in 2010 are demonstrated in figure 5, while total statistics on each and separate efficiency indicator in the period 2006-10 are available in tables A3, A4 and A5 in appendix.

FIGURE 5

VAT efficiency indicators in Croatia and EU new member states in 2010
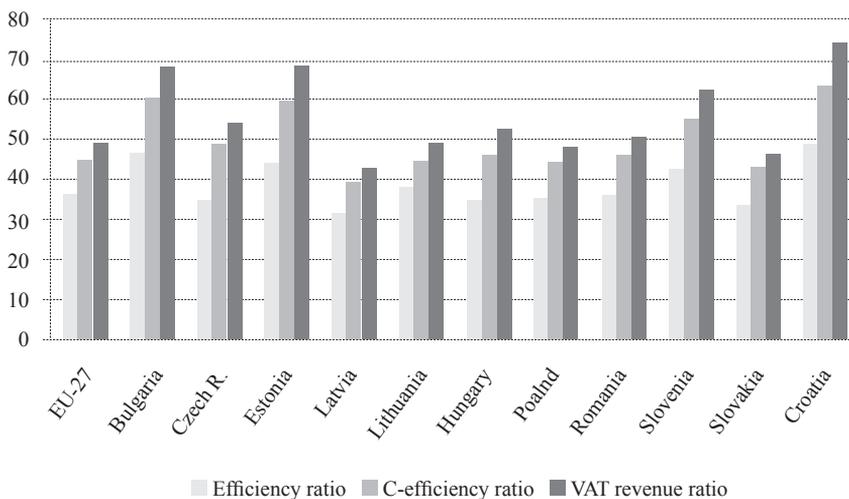
Source: Author based on tables A3, A4 and A5 from appendix.

Croatia had in 2010 the best efficiency indicators of all observed EU member states, which means that Croatian value added taxation system may be considered more efficient than that of any of the observed EU countries. According to VAT system efficiency, Croatia is followed by Estonia and Bulgaria, while Latvia is considered the least efficient of all the observed countries. It should be emphasised that these results are expected, according to the estimated share of tax expenditures in GDP, which is visible on figure 3, and which is directly linked to VAT system efficiency. However, from the definitions of all three efficiency indicators, disadvantages due to which they should be interpreted with a special attention can be observed. Namely, none of the administrative, compliance and taxpayer costs that are indirectly linked to VAT efficiency are represented in any of the observed efficiency measures[7]. Besides that, these measures do not tackle possible economic distortions caused by the nature of these taxes.

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[7] For details regarding the tax authorities costs (administrative costs of taxation) see for instance Bratić and Pitarević (2004), and for costs of taxpayers see Blažić (2004).

5 CONCLUSION

Value added tax in Croatia, along with social security contributions, is the most important tax revenue in the general government budget and covers the largest number of taxpayers. Total revenues from VAT in the analysed period 2002-10 amount on average to 34% of total tax revenue, while the average share of VAT revenue in total general government budget revenue amounts to 30.7%. Since the beginning of VAT application, the taxation system has experienced significant modifications primarily related to changes of VAT rates, exemptions, registration threshold, etc. VAT is currently mainly compliant with European guidelines, while some minor harmonisations are expected up to the moment of Croatian accession to the EU, primarily related to abolishment of the zero rate. Since Croatia will be obligated to abolish the currently applied zero rate on some products, this paper estimated the effect of such changes on the Croatian budget. Analysis shows that government revenue will increase by an amount equal to 0.4% of GDP in the case of the application of the lowest prescribed VAT rate of 5% on deliveries that are currently taxed at the zero rate, or analogously 0.8% of GDP in case of application of a VAT rate of 10%. It can be concluded that the share of tax expenditures in GDP in Croatia at the moment of the abolishment of zero rates will also decrease by the same amount, i.e. 0.4 or 0.8 percentage points, depending on the applied reduced rate.

From 2005 to 2010 the amount of all deliveries not subject to taxation, exempted from taxation and taxed at the reduced rates increased by 90%, from 109 to 208 billion kuna. From that amount, deliveries taxed at the reduced rates increased from 26.3 in 2005 to 38 billion kuna in 2010. Estimated loss of VAT revenues due to reduced rates is treated as a tax expenditure and was estimated at 5.8 billion kuna in 2005, gradually rising to 7.5 billion kuna in 2010. Cumulatively, revenue foregone by the state due to reduced rates in the period 2005-10 amounted to 40.5 billion kuna.

Estimates show that the proportion of tax expenditures in GDP in Croatia in 2010 amounted to less than 4%, a proportion lower than that experienced in any of the EU new member states, and almost twice as low as the EU-27 average. It can be concluded that Croatian value added taxation system is relatively efficient in that way, which was additionally shown in the efficiency analysis according to which in 2010 Croatia had a better efficiency indicator than any of the observed EU member states.

However, in the whole analysis of VAT system efficiency no analyses of the total costs of tax authorities, i.e. administrative and compliance costs of taxation, the costs of taxpayers, as well as other costs induced by economic distortions generated by the nature of these taxes were included. Therefore, it is absolutely necessary to initiate a detailed analysis of the whole value added taxation system with the aim of the optimization of costs and benefits. This analysis should at least en-

compass determination of the optimal VAT registration threshold, costs and bene-
fits of introduced reliefs and exemptions in the taxation system, which narrow the
tax base or reduce the tax liability and all the potential effects of the repeal of the
zero rate on all participants that will be directly or indirectly affected by these
changes. All introduced reliefs and exemptions that impact the level of tax expen-
ditures in Croatian VAT system should be closely monitored and evaluated by
their relevance, effectiveness and efficiency in order to achieve the best practice
VAT model. Thus, further research in Croatia should be focused on a broader con-
cept of the value added taxation system, one that also covers the different costs of
taxation, as well as all the potential implications to economic growth and market
competitiveness.

TABLE A1

PDV-K statistical report, nominal amounts (in billions kuna)

	2005	2006	2007	2008	2009	2010[a]
Deliveries – total (1+2)	562.1	634.8	702.2	762.5	666.2	691.3
1) Deliveries not subject to taxation and exempted deliveries – total (1a+1b+1c)	109.2	119.6	134.2	144.4	125.8	195.7
1a) Deliveries not subject to taxation	24.4	27.8	30.9	33.5	27.8	29.8
1b) Deliveries exempted from taxation	58.5	69.4	78.8	84.4	72.2	140.1
of which: Export deliveries – with the right to deduct input tax	56.1	64.5	72.6	78.1	66.1	74.6
of which: Deliveries in the country – without right of deduction of input tax	2.4	2.6	2.5	2.5	3.0	59.7
1c) Zero-rated deliveries	26.3	22.5	24.4	26.6	25.7	25.8
2) Taxable deliveries – total (2a+2b+2c)	453.0	515.1	568.1	618.1	540.4	495.6
2a) Taxable deliveries at the rate of 10%		8.2	10.4	12.6	12.1	12.2
2b) Taxable deliveries at the rate of 22%	453.0	506.9	557.7	605.5	307.0	-1.7
2c) Taxable deliveries at the rate of 23%					221.4	485.1

[a] *Preliminary data.*

Source: Central Office, Tax Administration, Ministry of Finance; author's adjustment.

TABLE A2

Estimate of tax expenditures in Croatia, new member states and EU-27 average in the period 2006-10 (% GDP)

	2006	2007	2008	2009	2010
EU-27[a]	6.3	6.5	6.8	7.3	7.3
Bulgaria	4.2	4.7	3.5	5.1	4.3
Czech Rep.	5.6	5.3	5.0	5.4	6.0
Estonia	2.2	2.3	3.9	3.8	4.1
Latvia	4.7	4.7	6.9	9.8	8.9
Lithuania	6.2	5.2	5.9	9.1	8.2
Hungary	6.2	5.7	5.9	6.9	7.9
Poland	7.8	7.1	7.8	8.4	8.2
Romania	6.8	6.1	6.1	7.4	7.5
Slovenia	4.1	3.8	4.1	5.1	5.2
Slovakia	5.6	5.9	6.0	7.4	7.2
Croatia	2.4	2.7	2.5	3.7	3.9

[a] *For EU-27 standard rate was used as a weighted average of all members' standard rates, where weights of each country were determined by the amount of final consumption expenditures.*

Source: Author's calculation.

TABLE A3

Efficiency rate in Croatia, new member states and EU-27 average in the period 2006-10

	2006	2007	2008	2009	2010
EU-27[a]	37.5	36.7	36.0	35.3	36.0
Bulgaria	53.5	51.8	54.5	45.2	46.1
Czech Rep.	33.6	33.4	35.6	36.4	34.9
Estonia	50.4	49.2	43.9	46.5	43.9
Latvia	47.7	45.8	37.3	28.5	31.6
Lithuania	42.1	45.0	44.4	37.5	37.7
Hungary	38.0	40.3	39.0	38.0	34.8
Poland	37.0	37.9	36.4	33.8	35.3
Romania	41.7	42.5	41.6	35.0	36.2
Slovenia	42.6	42.3	42.5	42.3	42.5
Slovakia	39.3	35.5	36.3	35.3	33.4
Croatia	54.6	53.9	54.4	49.3	49.0

[a] *For EU-27 standard rate was used as a weighted average of all members' standard rates, where weights of each country were determined by the amount of final consumption expenditures.*

Source: Author's calculation.

TABLE A4

C-efficiency rate in Croatia, new member states and EU-27 average in the period 2006-10

	2006	2007	2008	2009	2010
EU-27[a]	47.8	47.4	46.0	43.7	44.7
Bulgaria	62.7	60.5	65.7	56.8	59.9
Czech Rep.	48.4	49.4	51.9	50.6	48.7
Estonia	70.4	69.7	59.6	61.6	60.2
Latvia	57.9	57.1	45.2	35.2	39.2
Lithuania	50.0	54.9	52.3	41.1	44.4
Hungary	49.5	52.5	51.3	49.3	46.3
Poland	45.8	48.3	45.5	42.4	44.0
Romania	48.7	51.3	50.8	43.3	45.9
Slovenia	59.5	60.6	59.6	55.6	55.4
Slovakia	51.7	48.5	48.6	43.6	42.9
Croatia	70.3	68.9	70.2	64.1	63.5

[a] *For EU-27 standard rate was used as a weighted average of all members' standard rates, where weights of each country were determined by the amount of final consumption expenditures.*

Source: Author's calculation.

TABLE A5

VAT revenue rate in Croatia, new member states and EU-27 average in the period 2006-10

	2006	2007	2008	2009	2010
EU-27[a]	52.4	52.2	50.5	47.6	49.0
Bulgaria	71.6	68.9	75.6	64.1	68.0
Czech Rep.	53.3	54.5	57.5	56.0	53.9
Estonia	80.7	79.7	66.8	69.8	68.5
Latvia	64.6	63.7	49.2	38.0	42.8
Lithuania	55.0	60.9	57.7	44.8	49.0
Hungary	55.0	58.7	57.1	55.4	52.4
Poland	50.9	54.1	50.6	46.8	48.7
Romania	53.7	56.8	56.3	47.2	50.9
Slovenia	67.6	69.0	67.6	62.5	62.3
Slovakia	57.3	53.4	53.6	47.6	46.7
Croatia	83.1	81.3	83.0	74.9	74.4

[a] *For EU-27 standard rate was used as a weighted average of all members' standard rates, where weights of each country were determined by the amount of final consumption expenditures.*

Source: Author's calculation.

LITERATURE

Bird, R. M. and Gendron, P. P., 2006. "Is VAT the Best Way to Impose a General Consumption Tax in Developing Countries?" [online]. *International Tax Program Paper 0602*. Toronto: Institute for International Business. Available from: [http://www.rotman.utoronto.ca/iib/ITP0602.pdf].

Blažić, H., 2004. "Troškovi oporezivanja u Hrvatskoj: troškovi poreznih obveznika i troškovi poreznih vlasti" [online]. *Financijska teorija i praksa,* 28 (3), 271-291. Available from: [http://www.ijf.hr/FTP/2004/3/blazic1.pdf].

Bratić, V. and Pitarević, M., 2004. "Troškovi poreznih vlasti u Hrvatskoj" [online]. *Financijska teorija i praksa* 28 (3), 377-399. Available from: [http://www.ijf.hr/FTP/2004/3/bratic-pitarevic.pdf].

Bratić, V. and Urban, I., 2006. "Tax Expenditures in Croatia" [online]. *Financial Theory and Practice* 30 (2), 129-195. Available from: [http://www.ijf.hr/eng/FTP/2006/2/bratic-urban.pdf].

Bratić, V., 2011. *Skrivena javna potrošnja – porezni izdaci: potreba ili udvaranje biračima?*. Zagreb: Institut za javne financije.

Cindori, S. and Pogačić, L., 2010. "Problematika utvrđivanja broja i visine stopa poreza na dodanu vrijednost" [online]. *Ekonomska misao i praksa*, 19 (2), 227-249. Available from: [http://hrcak.srce.hr/file/93380].

Copenhagen Economics, 2007. *Study on reduced VAT applied to goods and services in the Member States of the European Union* [online]. Available from: [http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/study_reduced_vat.pdf].

Council Directive 112/2006/EZ on the common system of value added tax, 2006. [online]. Available from: [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006L0112:20110101:EN:PDF].

Dimitrić, M., 2004. "Kvalitativna analiza poreznih troškova poslovnih subjekata" [online]. *Financijska teorija i praksa,* 28 (3), 355-376. Available from: [http://www.ijf.hr/FTP/2004/3/dimitric.pdf].

Ebrill, L. [et al.], 2001. *The Modern VAT*. Washington: International Monetary Fund.

European Commission, 2010. *GREEN PAPER On the future of VAT - Towards a simpler, more robust and efficient VAT system* [online]. Available from: [http://ec.europa.eu/taxation_customs/resources/documents/common/consultations/tax/future_vat/com(2010)695_en.pdf].

European Commission, 2011. *Where to tax?- ANNEX 1: THRESHOLDS* [online]. Available from: [http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/traders/vat_community/vat_in_ec_annexi.pdf].

European Commission, 2012. *VAT Rates Applied in the Member States of the European Union – Situation at 1st January 2012* [online]. Available from: [http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf].

Eurostat, 2012a. *Government revenue, expenditure and main aggregates* [online]. Available from: [http://appsso.eurostat.ec.europa.eu/nui/show.do? dataset=gov_a_main&lang=en].

Eurostat, 2012b. *Final consumption aggregates - Current prices* [online]. Available from: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset =nama_fcs_c&lang=en].

Eurostat, 2012c. *GDP and main components - Current prices* [online]. Available from: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_gdp_c&lang=en].

Keen, M. and Mintz, J., 2004. "The optimal threshold for a value-added tax". *Journal of Public Economics* 88 (2004) 559– 576. Washington: International Monetary Fund. doi: 10.1016/S0047-2727(02)00165-2

Kesner-Škreb, M. and Medak Fell, D., 2008. "Value added tax in Croatia vs EU: Tax threshold, zero rate, building land taxation and exemptions" [online]. *Newsletter*, No. 36. Available from: [http://www.ijf.hr/eng/newsletter/36.pdf].

Kesner-Škreb, M., 1999. "Ten Reasons in Favour of a Uniform Rate of a Value Added Tax" [online]. *Newsletter*, No. 2. Available from: [http://www.ijf.hr/eng/newsletter/2.pdf].

Kim, S., 2005. *Optimal Threshold for a VAT in the Presence of Tax Evasion* [online]. Available from: [http://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=iipf2005&paper_id=107].

Kliment, A. and Dražić Lutilsky, I., 2005. "Porez na dodanu vrijednost na temelju računa – usporedba Hrvatske sa zemljama Europske unije" [online]. *Zbornik Ekonomskog fakulteta u Zagrebu*, (3). Available from: [http://hrcak.srce.hr/file/41483].

Kuliš, D., 2007a. "Consumption Taxation: Value Added Tax and Excise Taxes" [online]. *Newsletter*, No. 33. Available from: [http://www.ijf.hr/eng/newsletter/33.pdf].

Kuliš, D., 2007b. "Oporezivanje potrošnje, nasljedstva i darova" [online] in: K. Ott, ed. *Javne financije u Republici Hrvatskoj,* 25-34. Zagreb: Institute of Public Finance. Available from: [http://www.ijf.hr/rosen/rosenic/rosenic.pdf].

Kuliš, D., 2012. "Changes in the Value Added Tax System" [online]. *Newsletter*, No. 67. Available from: [http://www.ijf.hr/upload/files/file/ENG/newsletter/67.pdf].

Lejeune, I., 2011. "The EU VAT Experience: What Are the Lessons?" [online] in: *The VAT Reader - What a Federal Consumption Tax Would Mean for America*, 257-282. Tax Analysts. Available from: [http://www.taxanalysts.com/www/freefiles.nsf/Files/LEJEUNE-21.pdf/$file/LEJEUNE-21.pdf].

Lenjosek, G. J., 2004. "A Framework for Evaluating Tax Measures and Some Methodological Issues" in: H. Polackova Brixi, C. M. A. Valenducand Z. L. Swift, ed. *Tax Expenditures - Shedding Light on Government Spending through the Tax System*, 19-44. Washington: The World Bank.

Minh Le, T., 2003. *Value Added Taxation: Mechanism, Design, and Policy Issues* [online]. Paper prepared for the World Bank course on Practical Issues of Tax

Policy in Developing Countries. Washington: The World Bank. Available from: [http://www1.worldbank.org/publicsector/LearningProgram/PracticalIssues/papers/Value%20added%20taxation/Value%20Added%20Taxation.doc].

Ministry of Finance, 2012. *Time Series Data – Consolidated General Government* [online]. Available from: [http://www.mfin.hr/hr/vremenske-serije-podataka].

Ministry of Finance, Tax Administration, 2011. *Statistical Reports of Croatian Tax Administration, Central Office on Value Added Tax from 2005 to 2010.* Zagreb: Ministry of Finance, Tax Administration.

Nestić, D., 2008. "Konvergencija razina cijena i njezin utjecaj na inflaciju u Hrvatskoj" [online]. *Ekonomski pregled*, 59 (1-2), 3-37. Available from: [http://hrcak.srce.hr/file/32770].

OECD, 1996. *Tax Expenditures – Recent Experiences.* Paris: OECD.

OECD, 2006. *Consumption Tax Trends 2006: VAT/GSV and Excise Rates, Trends and Administration Issues*. OECD Publishing.

OECD, 2010. *Tax Expenditures in OECD Countries.* OECD Publishing.

OECD, 2011. *Consumption Tax Trends 2010: VAT/GSV and Excise Rates, Trends and Administration Issues*. OECD Publishing.

Vlada Republike Hrvatske, 2010. *Izvješće o ispunjavanju obveza iz poglavlja 16. Porezi* [online]. Available from: [http://www.mvpei.hr/custompages/static/hrv/files/pregovori/5/p16.pdf].

Zakon o porezu na dodanu vrijednost, NN 47/95, 60/96, 106/96, 105/99, 112/99, 54/00, 73/00, 90/05, 76/07, 87/09, 94/09, 149/09, 22/12. Zagreb: Narodne novine.