

# (In)efficiency of corporate income tax expenditures on underdeveloped areas of special tax treatment in Croatia

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## Abstract

*The introduction of various tax expenditures by the tax authorities, mostly in corporate income taxation (CIT), in order to kick start development in areas affected by the war as well as in economically underdeveloped areas has been characteristic of the Croatian tax system since 2000. Although the purpose of such forms of state aid was to foster economic development and equalize the level over the entire country, at the same time they caused forgone tax revenues and it is therefore necessary to analyze their advantages and disadvantages and evaluate their possible positive or negative effects. This paper deals with the analysis of tax expenditures in the system of CIT in Croatia and it investigates their effect on the budget and the possible advantages brought by their introduction. The main purpose of the paper is to answer the questions as to whether the expenditures that have been introduced in CIT justify their purpose and the goal of their introduction and what can be done to improve the existing CIT expenditures system.*

*Keywords: tax expenditures, revenues forgone, corporate income tax, underdeveloped areas with special tax treatment, Croatia*

## 1 INTRODUCTION

Tax expenditures are all items that lead to forgone tax revenues, whether they reduce the tax base or the tax amount due. The basic characteristic of tax expenditures is that by excluding certain items from the calculation of tax obligation they indirectly lead to forgone budget revenues and their effect is difficult to measure.

Unlike subsidies, tax expenditures constitute a manner of public spending and government policies that is most often outside the budgetary frame. They are not included in the calculation of total government revenues, and therefore it is not possible to learn their actual size or how much and spending they represent in the state budget, which can (on purpose or not) reduce (or hide) the real size of such spending. An additional problem lies in the fact that consideration of allocative and operative efficiency is rarely required in the process of deciding about the distribution of budget funds. Therefore the world's best practices show that prior to the introduction of a certain form of tax expenditures, a cost benefit analysis is necessary. Furthermore, they need to have an exact purpose, they have to be chosen correctly with a specific goal in mind, based on real needs and according to the proclaimed economic and social goals of the government. "In order for the amounts of expenditures not to reach undesired proportions, it is necessary to control their total size and their number and if necessary, reduce them" (Brixi Polackova, Valenduc and Swift, 2004).

Because of the great importance of their analysis, developed countries research into and monitor programs of tax expenditures regularly, but this is not the case in the countries in transition.

Tax expenditures reporting began in Germany and the United States in the late 1960s, with other countries introducing it in the late 1970s (Austria, Canada, Spain and the United Kingdom) and the remainder started in the 1980s (OECD, 1996:9).

Organizations such as the OECD and World Bank publish reports on and analyses of tax expenditures of the utmost quality. The most popular investigations of tax expenditure programs are those made by Surrey and McDaniel (1985a), OECD (1996 and 2010) and the World Bank researchers (Brixl Polackova, Valenduc and Swift, 2004). The ever more widespread use of tax expenditure programs leads to certain disagreements and dilemmas that mostly concern their definition, range and methodology of calculation.

For example, the latest analysis of tax expenditures by OECD (2010) includes a comparison of ten OECD countries: Canada, France, Germany, Japan, South Korea, the Netherlands, Spain, Sweden, Great Britain and the United States. The basic purpose of this analysis is to provide a better understanding of the manner in which these countries define, measure, control and revise tax expenditures.

The manner, time and methodology of reporting about tax expenditures and their links to the budget process vary significantly from country to country. In seven of the 14 OECD countries that report on tax expenditure programs – Austria, Belgium, France, Germany, Portugal, Spain and the United States – the authorities are legally obliged to produce tax expenditure reports. In most of these countries, a report is currently produced annually, the exceptions being Germany (every two years) and Italy (sporadic). In Australia, Belgium, Finland, France, Portugal, and Spain, the tax expenditure report is linked explicitly to the budget process. In the United States, a tax expenditure report is produced as part of the government's budget but is not integrated into the budget process (Brixl Polackova, Valenduc and Swift, 2004:212).

The most important researches of this topic for Croatia and the neighbouring countries are the following. Bratić and Urban (2006) analyzed the tax expenditures in four tax forms (personal and corporate income tax, real property transaction tax and value added tax). Furthermore, in his second analysis Bratić (2011) analyses the effects of expenditures in the Croatian corporate income taxation system and Blažić (2006) as well as Blažić and Drezgic (2012) provide a comparative overview of tax incentives in personal income tax (PIT). Research has also been done into corporate income tax expenditures in the transition countries (Kraljić, 2001), as well as in Croatia's neighbouring countries – Slovenia, Serbia, Montenegro, Macedonia and Albania (Šimović and Mihelja Žaja, 2010). In Serbia and Montenegro Raičević and Nenadić (2005) analyze corporate income tax incentives, while Lazović-Pita and Pita (2012) and Klun (2012) analyze personal and corporate income tax expenditures in Bosnia and Herzegovina and Slovenia.

The situation with tax expenditures in Croatia is that numerous and miscellaneous advantages in the tax system have been introduced without prior cost-benefit analyses and control of efficiency, that have finally in the past ten years led to significant state budget losses of tax revenues.

This paper uses the *revenue forgone method* in order to analyze budgetary tax revenues forgone that occurred because of the introduction of expenditures in the CIT system. Afterwards, based on available indicators, it researches into whether they had met the purpose they were introduced for (e.g. faster and stronger economic development in the areas where they were applied).

The primary goal of this paper is to try to assess the benefits of their introduction, to answer whether the potential benefits that resulted from the introduction the tax expenditures compensated for the state budget tax revenues forgone and whether they should be eliminated and/or replaced with government subsidies in order to increase state budget transparency.

## 2 DEFINITION AND OPEN METHODOLOGY ISSUES IN TAX EXPENDITURE ANALYSIS

There is no simple, all-embracing definition of tax expenditures, nor is there broadly accepted methodology for calculating them. Therefore a description of the broadest used definitions and accepted methodologies of calculating tax expenditures follow.

### 2.1 DEFINITION AND DIFFERENT FORMS OF TAX EXPENDITURES

Tax expenditures are an instrument the government uses to favour certain groups or categories of taxpayers (regions, sectors, firms or individuals) and to provide incentives to given economic activities or branches. In such a case, the government consciously concurs in the reduction of its own revenue. The same effect would be achieved if the government collected the taxes from all the bases, and later, allocated direct transfers, grants or aid from the expenditure side of the budget.

According to the OECD (1996:9) definition, also used by the World Bank (Brix Polackova, Valenduc and Swift, 2004), in broad terms, tax expenditures are concessions that fall outside of a tax norm or benchmark<sup>1</sup>. Tax norms include the rate structure, accounting conventions, the deductibility of compulsory payments, provisions to facilitate administration and those relating to international fiscal obligations (OECD, 1996:9). In other words, tax expenditure is “revenue forgone because of preferential provisions of the tax structure” the express aim of which is to achieve certain economic or social objectives. In practice, tax codes and tax sy-

<sup>1</sup> The Canadian Department of Finance defines tax expenditures in a similar way. For more see: [http://www.fin.gc.ca/taxexp/2001/taxexp01\\_1e.html#\\_Toc519392242](http://www.fin.gc.ca/taxexp/2001/taxexp01_1e.html#_Toc519392242) and [http://www.fin.gc.ca/taxexp/1999/taxexp\\_99\\_1e.html#Expenditure](http://www.fin.gc.ca/taxexp/1999/taxexp_99_1e.html#Expenditure).

stems are differently defined across different countries, which make them difficult to compare.

According to the majority of methodologies used, all items that are in fact a certain deviation or change from the existing tax system for the sake of obtaining given economic and social objectives are considered tax expenditures and can be classified into those that reduce the tax base, and those that reduce the tax due (more in: State of Illinois, 1998:1). Typically, these deviations or distortions mostly appear in the form of exceptions or exemptions (when the income of a certain group of taxpayers is excepted or deducted from the tax base), deductions or allowances from the tax base (when for certain costs or other amounts the tax base is reduced), tax incentives, special discounts, exclusions, abatements, reduced or preferential tax rates, reductions of the base (when a certain category of taxpayer or activity benefits from a reduction of the normal tax rate), reliefs, deferrals (when the normal rate for payment of the tax is postponed without any attendant interest or fine) and various forms of tax credits or reductions of the tax amount due.<sup>2</sup>

There are further classifications of certain types of tax expenditures, e.g. tax incentives, which occur most often in corporate income taxation (CIT). Usually, different kinds of tax incentives are categorized in several groups: (lower) tax rate, tax holidays and investment incentives (accelerated depreciation, tax credits and tax allowances).<sup>3</sup> The fourth group contains different tax incentives that are not directly connected to those previously mentioned, such as transfer of tax loss and lower withholding tax rates for certain payments. In practice it is sometimes very difficult to determine which tax expenditure belongs to which group or subgroup, while sometimes the same tax expenditures can be put into various groups.

Moreover because there is such a wide range, it can be assumed that the list of tax expenditures will probably include some items that are not really tax expenditures. Hence for a high-quality and accurate analysis of tax expenditures it is necessary to give as much information as possible about deviations (concessions and changes) from the basic tax system (Government of Canada, 2004:60).

## 2.2 METHODOLOGY OF TAX EXPENDITURES CALCULATION

There is widely spread debate on the methodology used to assess the impact of tax expenditure, since some tax expenditures may have a different impact than direct spending, taking into account any resulting changes in the behaviour of taxpayers (OECD, 2004; Allen and Tommasi, 2004).

Although most of the OECD countries use similar methodologies, but with different ranges of tax expenditures, there have been some suggestions for new tax

<sup>2</sup> For more concerning the various kinds of tax expenditures see Arbutina and Ott (1999).

<sup>3</sup> For more see Zee, Stotsky and Ley (2002); Mintz (2006); Blažić (2006); Šimović and Mihelja Žaja (2010).

expenditure calculation methods. Joint Committee on Taxation (2008) for example sums up and revises in its report numerous criticisms of the existing concepts and besides the basic, it offers an alternative frame, first suggested by Kraan (2004), with the goal of achieving a consensus about the usefulness of the new concept; however, it is still too soon to evaluate it (OECD, 2010:17).

The tax expenditure calculation could be made by using three basic methods, equally used in OECD countries:

- *Revenue forgone method* – is an *ex post* calculation of the loss in revenue incurred by government (more in: Brixi Polackova, Valenduc and Swift, 2004:7). It calculates the amounts that cause the reduction of tax revenues due to the existence of certain tax privileges (incentives, exemptions, credits, etc.). It is based on the comparison of the existing legislative framework and a framework in which these tax privileges would not exist.
- *Revenue gain method* – that considers the amounts of income growth that can be expected in the case of abolishing certain tax privileges. In order to achieve accurate evaluation of income calculated in this way, it is generally necessary to take into account the changes in behaviour (adjustments) or other secondary effects closely connected to such changes. Those effects include the change in behaviour of tax payers and return effects and interaction between taxes.
- *Outlay equivalent method* – which evaluates the amount of nominal direct costs in order to achieve the same effects if tax expenditures are replaced with programs of direct expenditures and according to which the direct expenditure equals the tax procedure with corresponding types of the tax payer's income.

This paper uses *the revenue forgone method* which is used in most developed countries and institutions (for example, Australia, SAD, OECD and World Bank).

### 3 (IN)EFFICIENCY OF CORPORATE INCOME TAX EXPENDITURES IN CROATIA

Since 2000 Croatia has tried to favour certain groups of subjects, especially those in the underdeveloped areas with special tax treatment (UASTT), as well as to stimulate economic activities and investments in free zones. The basic forms of corporate income tax expenditures from 2000 are reductions of the tax base or reliefs and reductions of the tax due or tax credits.

Until 2007 the CIT base was reduced by the costs of the salaries of the newly employed, expenses for research and development (R&D) and expenses for training and personal professional development. Since 2007 the abatements for those expenses have been replaced with state aids for R&D projects, aids for education and allowances for employment. Additionally, CIT has been reduced in UASTT,

free zones as well as by the investment incentives. Also, from 2001 until 2006 tax was additionally reduced if disabled persons were employed. UASTT include all three groups of areas of special state concern, hill and mountain areas and city of Vukovar (table 1).

**TABLE 1**

*Reasons for the introduction of tax expenditures in underdeveloped areas with special tax treatment*

Areas of special state concern (ASCC) <sup>a</sup>	I. group – areas occupied in the Croatian war of independence, located next to state boundaries, with up to 5,000 inhabitants
	II. group – areas occupied in the Croatian war of independence, excluding areas in group I.
	III. group – economically underdeveloped areas
Hill and mountain areas <sup>b</sup>	Underdeveloped areas, i.e. areas with negative natural increase, low development rates and high unemployment
	Areas with unfavourable climate and other natural characteristics
City of Vukovar <sup>c</sup>	Stimulation of investments, faster economic growth, increase of employment

Sources: <sup>a</sup>*Zakon o područjima posebne državne skrbi (Act on areas of special state concern, consolidated version, NN 26/03)*; <sup>b</sup>*Zakon o brdsko-planinskim područjima (Act on hill and mountain areas, NN 12/02)*; <sup>c</sup>*Zakon o obnovi i razvoju Grada Vukovara (Act on reconstruction and development of the city of Vukovar, NN 44/01, 90/05 and 80/08)*.

CIT revenues were divided among all levels of general government until 2007, when they became exclusively state budget revenue. The trends of CIT revenues and their proportion in total state budget revenues are shown in table 2.

CIT revenues are not as important as the revenues from VAT and social security contributions (more in tables A4 and A5 in appendix). For example, table 2 shows that the CIT revenues from 2000-2010 on average amount to 9.5%, while VAT revenues amount to 60% of total state budget tax revenues. Furthermore, in period 2008-10 the CIT revenues were significantly reduced as a direct consequence of the widespread economic crisis. Table A5 in appendix shows that, according to the proportion of certain tax forms in total general government tax revenues, the Croatian tax system is more consumption-oriented (higher VAT proportion) than the EU average.

Tax expenditures represent direct budget revenues forgone and central government authorities should be interested in having a detailed overview of all the positive and negative effects of this tax policy. Below, the article will show the total tax revenues forgone by the state treasury because of the tax expenditures in the CIT system.

TABLE 2

*Tax structure in Croatia, state budget, 2001-10 (in %)*

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
PIT	8.4	7.9	6.9	6.6	6.1	5.9	2.8	2.4	2.2	1.9	5.1
CIT	4.9	6.2	6.8	6.6	7.8	8.6	13.7	15.2	14.8	10.2	9.5
Property taxes (tax on real estate transaction)	0.7	0.7	0.6	0.8	0.7	0.8	0.9	0.9	0.8	0.7	0.8
Taxes on goods and services	76.9	79.4	80.9	81.9	81.5	81.3	79.6	80.2	77.3	81.1	72.0
VAT	57.5	60.6	62.1	63.3	63.6	59.7	58.8	59.4	58.2	60.0	60.3
Excise	19.0	17.5	17.3	16.8	16.1	19.8	18.9	17.1	17.3	19.0	17.9
Sales tax	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
Taxes on international trade and transactions	7.9	4.8	4.0	3.4	3.1	2.7	2.6	2.7	2.7	2.6	3.7
Other taxes	1.2	1.1	0.8	0.7	0.7	0.6	0.5	0.4	2.1	3.5	1.2
Total tax revenues	100	100	100	100	100	100	100	100	100	100	–

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

Table 3 shows how state budget tax revenues forgone caused by CIT expenditures were the lowest in 2001 and 2002, when the number of tax expenditures was also the lowest. From 2002 state budget tax revenues forgone rose constantly and powerfully and reached almost 700 million kuna in 2007. Having in mind that Croatia has had large budget deficits for years, it is logical to question the justification of such a tax policy.

Tax revenues forgone from the reduction of the CIT base rose from 25 in 2001 to 159 million kuna in 2009.<sup>4</sup> The forgone state budget tax revenues were the largest in 2007 when it “lost the chance” to collect 234.5 million kuna (an increase of about 740% compared to 2001).

Although the tax expenditures caused by the reduction of tax base are not negligible in total tax expenditures, the state budget could also collect the much bigger amounts lost by the reduction of the tax amount due. This has been a problem especially since 2005 when the Government made numerous amendments in tax

<sup>4</sup> For more detailed view of forgone state budget tax revenues see table A1 in appendix.



legislation in order to try to accelerate the economic development of underdeveloped areas. For example, total tax expenditures caused by the reduction of tax rose from 35.4 million in 2001 to 358.6 million kuna in 2009. The highest amount was reached in 2007, 463 million kuna.

**TABLE 3**

*State budget tax revenues forgone because of corporate income tax expenditures, 2001-09 (in million kuna)*

	2001	2002	2003	2004	2005	2006	2007	2008	2009
1 State budget CIT revenues	1,987	2,659	3,074	3,131	3,951	5,056	8,816	10,565	9,439
2 Total state budget tax revenues forgone in CIT*	60.4	86.1	266.3	337.3	456.2	506.0	697.5	682.4	517.4
2.1 Revenues forgone caused by the reduction of tax base	25.0	41.7	175.7	230.2	205.8	196.4	234.5	230.0	158.8
2.2 Revenues forgone caused by the reduction of the tax amount due	35.4	44.4	90.6	107.1	250.4	309.6	463.0	452.4	358.6
2.2.1 Reliefs and exemptions for UASTT	13.8	17.5	35.8	33.2	81.0	149.5	245.1	224.2	132.3
2.2.2 Reliefs and exemptions for free zone users	21.5	25.8	40.3	44.5	24.1	36.3	57.2	48.8	18.1
2.2.3 Incentives for investments	0.1	0.9	13.9	28.8	144.9	123.6	160.7	179.4	208.2
2.2.4 Incentives for the employment of disabled persons	0.0	0.2	0.6	0.6	0.4	0.2	–	–	–
3 Proportion of state budget total tax revenues forgone in total CIT revenues (2/1, in %)	3.0	3.2	8.5	10.8	11.6	10.0	7.9	6.5	5.5

*\*The state budget tax revenues forgone caused by CIT expenditures tax base are recalculated in a way that nominal tax expenditures amounts are multiplied by rate of 20%. Until 2007 CIT revenues were divided between different levels of government (70% of all revenues belonged to the state budget), and those amounts have been recalculated. Since 2007 CIT revenues belong to state budget.*

*Source: Tax Administration (2011), author's own calculation.*

Analysis of individual items of tax expenditures shows that the amounts of reliefs and exemptions for areas with special tax treatment (ASTT) are the highest, as well as the incentives for investments, which rose constantly during the entire period.

Comparison of proportions of tax revenues forgone caused by tax expenditures in total CIT revenues shows that simultaneously with the rise of CIT revenues, the proportion of tax expenditures in those revenues also rose. For example, the state budget failed to collect 10% of CIT revenues in 2006 by failing to charge every ten out of a hundred kuna in the CIT system.

Undeveloped areas with special tax treatment are lagging behind, the other areas of Croatia, economically, socially, demographically as well as in general development, mostly because of the wartime destruction and its negative influence on social conditions and the economy. CIT expenditures were introduced to facilitate equal development of all areas of Croatia, faster recovery from the consequences of war and more active return of pre-war inhabitants as well as the stimulation of demographic and economic development. Although these reasons justify the introduction of many reliefs and exemptions in those areas, the inadequacy of statistical data makes it very difficult to connect them to any of the possible positive economic and development effects which they might have produced. The additional problem lies in the fact that the tax administration does not have that kind of statistical database.

Therefore, the analysis of certain economic indicators (original local budget revenues per inhabitant) and indicators of structural difficulties (employment and unemployment rate) as well as additional indicators of development of entrepreneurship and demographic indicators mostly will try to indicate the basic trends<sup>5</sup>. Further on in this paper, based on available data the comparison of indicators for UASTT, the rest of Croatia and the whole of Croatia will be made, and certain conclusions as to the efficiency of tax expenditures will be made.

In consideration of a whole picture of tax expenditures efficiency, financial indicators on business of enterprises in Croatia would be helpful, but they have not been analyzed due to the failure of the Financial Agency to make data available (FINA, certain data are available in: ---, 2006; Bratić, 2011:120).

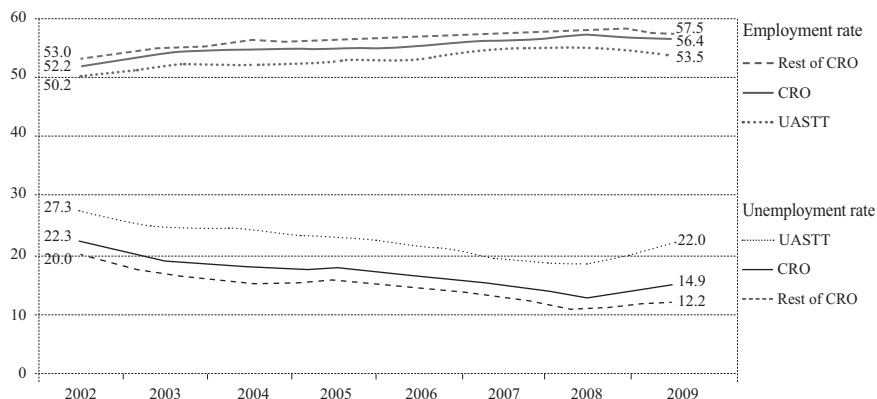
Graph 1 shows the movement of indicators of structural difficulties (employment and unemployment rate), the important indicators of economic development.

The employment rates in UASTT remained significantly lower than in the rest of Croatia during the researched period, but also lower than in the entirety of Croatia. Furthermore, the difference in comparison with the rest of Croatia rose from 2.8% in 2002 to 4% in 2009. Similar conclusions can be made by comparing the UASTT with the whole of Croatia. The fall in the employment rate in UASTT that began at the outset of the economic crisis (end of 2007, beginning of 2008) is very sharp compared to the other two areas researched.

<sup>5</sup> *Unemployment rate* is defined as the proportion of unemployed persons in the work force (total of unemployed and employed). It is a standard indicator used to identify areas with structural difficulties. *The employment rate* represents the proportion of employed persons in the population of working age (population from 15 until 64 years of age). *Original local budget revenues per inhabitant* can be defined as current local budget revenue reduced by all transfers from the state and county budgets, donations, for assigned revenues from corporate and personal income taxes from the central government (according to the legislative amendments on belonging of revenues until and from 2007), and any other form of aid, per inhabitant.

## GRAPH 1

Indicators of structural difficulties, 2002-09 (in %)



Source: CBS; author's own calculation.

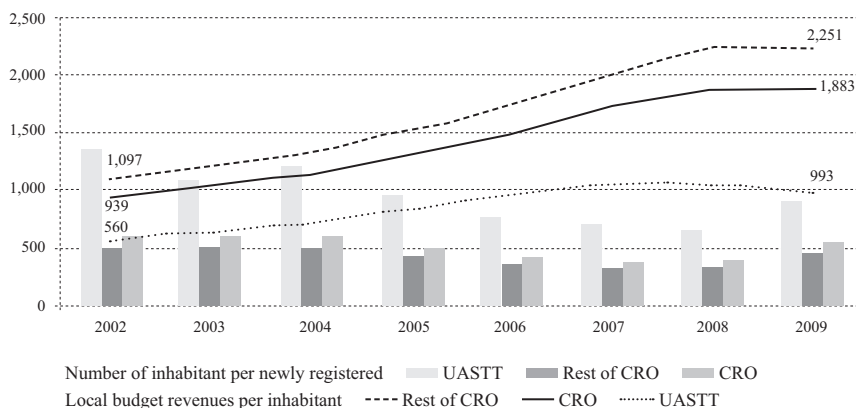
The unemployment rate was in constant decline in all three observed areas until 2008, with significant growth in 2009. In spite the decline, the unemployment rate was significantly higher in UASTT than in the rest of Croatia and in Croatia as a whole. For example, in 2002 it was 7.3 percentage points higher in UASTT than in the rest of Croatia and 5 percentage points higher than in the whole of Croatia. The gap did not diminish, and in some years it was even higher. In 2009 the unemployment rate in UASTT was 22% and it was 9.8 percentage points higher than in the rest of Croatia and 7.1 percentage points higher than in the entirety of Croatia. Also, Graph 1 shows that until 2009 the unemployment rate did not reach even the average level of the whole of Croatia from 2002, which could lead to the conclusion that the targeted tax expenditures for those areas were not successful and have not contributed to the fulfilment of a single goal for which they were introduced, which is the faster reduction of unemployment in UASTT.

Graph 2 shows that the local budget revenues per inhabitant, in spite of their growth in all the analyzed areas during the entire period from 2002-09, in UASTT still largely lagged behind the rest of Croatia, this difference, moreover, increasing during the time.

For comparison, the local budget revenue per inhabitant in UASTT rose from 560 kuna in 2002 to 993 kuna in 2009, while during the same period in the rest of Croatia it rose from 1,097 kuna to 2,251 kuna. As shown in graph 1, the economic crisis brought about an even stronger decline of local budget revenues in UASTT, and stagnation in the rest of the country as well as in the whole of Croatia. In brief, in spite of stronger and broader tax privileges, UASTT had slower growth of local budget revenues than the other parts of Croatia and the country as a whole.

GRAPH 2

Local budget revenues per inhabitant, 2002-09



Source: Croatian Chamber of Economy, CBS, Ministry of Finance (2012), author's own calculation.

Furthermore, the so called *indicators of the development of entrepreneurship* (the number of newly registered enterprises and number of inhabitants per newly registered enterprise, table A3 in appendix) show that the trend towards reduction of the number of inhabitants per newly registered enterprise in the UASTT was faster than in the rest of Croatia and in Croatia as a whole, in which the ratio is still more favourable. This could lead to the conclusion that the rest of Croatia and the entire Croatia in a certain way achieved better results regarding the development of entrepreneurship than UASTT, although it had been less incited by the central government. The reasons for the weaker development of entrepreneurship are numerous and earlier research shows that a large number of enterprises does not produce any income at all, or else the income produced is so small that the benefits do not play a significant role (more in: ---, 2006).

Demographic indicators too, considering the last two general censuses, do not benefit UASTT. Table 4 shows that the number of inhabitants in UASTT fell faster than in the rest of Croatia and in the whole of Croatia.

TABLE 4

Number of inhabitants in underdeveloped areas with special tax treatment, in the rest of Croatia and in the entire Croatia, 2001 and 2011 (in thousands and %)

	2001	2011	2011/2001
The Republic of Croatia (CRO)	4,437	4,291	0.967
Underdeveloped areas with special tax treatment	892 <sup>a</sup>	844	0.946
Rest of Croatia	3,546	3,447	0.972
Proportion of UASTT in CRO (in %)	20.1	19.7	—

<sup>a</sup> Including municipalities that additionally became a part of areas with special tax treatment.

Source: Croatian Bureau of Statistics, author's own calculation.

Although in comparison with 2001 the number of inhabitants in Croatia fell, the largest contribution to that reduction was by UASTT. At the moment (2011) 5.4% fewer people live in these areas than in 2001, whereas in the whole of Croatia the reduction is 3.3%. UASTT lost 48,341 inhabitants in the last 10 years and the proportion in the total number of inhabitants fell from 20.1 to 19.7%. In other words, the underdeveloped areas with special tax treatment, along with the much lower level of economic development, also suffer from increased emigration and lower natality.

#### 4 CONCLUSION

CIT revenues are not as important as VAT revenues in the Croatian state budget and in the past years those revenues have been significantly reduced. Apart from the reduction of the CIT revenues due to the economic crisis, the state budget has failed to collect significant amounts because of different types of tax expenditures.

This analysis has pointed out the structural difficulties of UASTT and their falling further behind in economic growth, for they have not developed faster than, or as fast as indeed, the rest of Croatia in spite of the many tax measures and it is therefore questionable whether the tax expenditures directed towards those areas have fulfilled their purpose.

However, total amounts of tax expenditures could still be too small and/or insufficient to stimulate the general economic and social development of those areas. Moreover, the instability of legislative system for the CIT because of constant amendments increases uncertainty, which has a negative effect on investments and economic development. An additional problem is that the introduction of new tax expenditures has made the system more complex and decreased governmental revenues. Everything mentioned is not at all irrelevant or negligible, especially in times of the existing insufficient collection of state budget tax revenues.

But it could also be postulated that the situation in UASTT would be even worse without the special treatment. However, to make such an analysis a high-quality and detailed statistical base with longer time series is required in order to statistically evaluate the correlation between the tax expenditure programs and all analyzed indicators. Unfortunately, no such statistical data base exists.

Finally, all those reasons should encourage the tax authorities to make a significant reform of tax expenditures in the CIT or at least, a review of them. One of the options is their complete annulment or replacement with transfers (subsidies) from the state budget. That would have a positive effect on the neutrality, efficiency and productiveness of the tax system, as well as the increase of transparency in the state budget. This analysis has shown the insufficient efficiency of CIT expenditures in the analyzed areas and, far from justifying their future existence,

has indicated that a reduction of them is necessary, which would lead to the simplification of the system. This would enable the use of lower general tax rates and reduction of marginal tax rates, leading to an expansion of the tax base and at the same time the collection of more revenues.

TABLE A1

*Forgone state budget tax revenues due to CIT expenditures – more details, 2001–09 (in million kuna)*

	2001	2002	2003	2004	2005	2006	2007	2008	2009
1 Reduction of CIT base									
1.1 Expenses for salaries of the newly employed	25.0	41.7	53.8	51.8	51.8	41.5	–	–	–
1.2 Expenses for research and development	–	–	78.1	86.8	92.3	83.5	–	–	–
1.3 Expenses for training and personal professional development	–	–	43.8	91.6	61.7	71.4	–	–	–
1.4 State aid for education	–	–	–	–	–	–	55.3	63.7	49.7
1.5 State aid for research and development projects	–	–	–	–	–	–	156.0	162.0	106.6
1.6 Allowances for employment	–	–	–	–	–	–	23.2	4.3	2.5
Total tax revenues forgone due to the reduction of tax base	25.0	41.7	175.7	230.2	205.8	196.4	234.5	230.0	158.8
2 Reduction of the CIT amount due									
2.1 Reliefs and exemptions in UASTT	13.8	17.5	35.8	33.2	81.0	149.5	245.1	224.2	132.3
2.2 Reliefs and exemptions for free zone users	21.5	25.8	40.3	44.5	24.1	36.3	57.2	48.8	18.1
2.3 Investment incentives	0.1	0.9	13.9	28.8	144.9	123.6	160.7	179.4	208.2
2.4 Incentives for the employment of disabled persons	0.0	0.2	0.6	0.6	0.4	0.2	–	–	–
Total tax revenues forgone for reduction of the tax amount due	35.4	44.4	90.6	107.1	250.4	309.6	463.0	452.4	358.6
3 Total tax revenues forgone of state budget in CIT system (1+2)	60.4	86.1	266.3	337.3	456.2	506.0	697.5	682.4	517.4
CIT revenues of state budget	1,987	2,659	3,074	3,131	3,951	5,056	8,816	10,565	9,439
Proportion of tax revenues forgone in total CIT revenues (in %)	3.0	3.2	8.5	10.8	11.6	10.0	7.9	6.5	5.5

Source: Tax Administration (2011), author's own calculation.

TABLE A2

*CIT state budget tax revenues forgone caused by reductions of tax due, 2001-09  
(in million kuna\*)*

	2001	2002	2003	2004	2005	2006	2007	2008	2009
1 Reliefs and exemptions in ASCC	9.9	12.9	24.2	19.5	61.3	113.1	193.6	178.7	105.2
1 <sup>st</sup> group	3	3.8	5.3	7.1	21.4	49.8	82.3	93.8	53.8
2 <sup>nd</sup> group	6.9	8.1	10.5	9.6	33	58	104.6	79	48.4
3 <sup>rd</sup> group	0	1	3.8	2.8	2	5.3	6.7	5.9	4.1
2 Reliefs and exemptions in the hill and mountain areas	–	–	4.6	4.6	6	10.3	15.1	13.8	10.6
3 Reliefs and exemptions in the city of Vukovar	3.9	4.6	7	9.1	13.7	26.1	36.4	31.7	16.5
4 Reliefs and exemptions for free zone users	21.5	25.8	40.3	44.5	24.1	36.3	57.2	48.8	18.1
50% of prescribed rate	17.6	17.9	29.7	30	15.9	17.3	25.4	19.6	8.9
users investing more than a million kuna	3.9	7.9	9.8	14	7.4	17.6	27.8	23.4	5.5
in city of Vukovar	0	0	0.8	0.4	0.8	1.5	4	5.8	3.6
5.1 Capital investment incentives on corporate income greater than	0.1	0.9	13.9	28.8	144.9	123.6	139.6	124.6	117.6
4 million kuna, 10% tax, 10 years, 10 employees	–	–	–	–	1.1	4.8	1.6	9.6	8
10 million kuna, 7% tax, 10 years, 30 employees	0.1	0.3	1.4	5	5.5	2.7	6.5	1.1	1.3
20 million kuna, 3% tax, 10 years, 50 employees	0	0.7	0	6.7	14.8	7.8	24	11.7	12.4
60 million kuna, 0% tax, 10 years, 75 employees	0	0	12.5	17.1	42.9	51.5	107.5	102.2	95.9
for shipping activities	–	–	–	–	80.1	56.6	–	–	–
5.2 Capital investment incentives on corporate income greater than	–	–	–	–	–	–	21.1	54.8	90.6
1,5 million euro, 10% tax, 10 years, 10 employees	–	–	–	–	–	–	11	19.2	32.3
1,5–4 million euro, 7% tax, 10 years, 30 employees	–	–	–	–	–	–	0.4	12	1.7
4–8 million euro, 3% tax, 10 years, 50 employees	–	–	–	–	–	–	9.6	19.6	38.2
8 million euro, 0% tax, 10 years, 75 employees	–	–	–	–	–	–	0	4	18.4
6 Incentives for the employment of disabled persons	0	0.2	0.6	0.6	0.4	0.2	–	–	–
7 Total reductions of tax due from corporate income tax	35.3	44.3	86	107	250.6	309.8	463.1	452.4	359.6

\*70% of total reduction until 2007.

Source: Tax Administration (2011), author's own calculation.



**TABLE A3**

*Comparison of economic indicators for areas with special tax treatment, the rest of Croatia and the whole of Croatia, 2002-09*

	Unemployment rate (in %)			Employment rate (in %)			Original revenue per inhabitant (in kuna)			Number of newly registered enterprises			Number of inhabitants per newly registered enterprise		
	UASTT	Rest of CRO	CRO	UASTT	Rest of CRO	CRO	UASTT	Rest of CRO	CRO	UASTT	Rest of CRO	CRO	UASTT	Rest of CRO	CRO
2002	27.3	20.0	22.3	50.2	53.0	52.2	559.7	1,096.6	939.3	959	6,504	7,463	1,355	482	595
2003	24.5	16.8	19.2	52.1	55.0	54.2	646.0	1,198.6	1,036.7	1,192	6,124	7,316	1,090	512	607
2004	24.4	15.1	18.0	52.2	55.9	54.9	714.7	1,328.9	1,149.0	1,078	6,375	7,453	1,206	492	595
2005	23.3	15.5	17.9	52.8	55.7	54.9	852.7	1,524.5	1,327.7	1,354	7,422	8,776	960	423	506
2006	21.9	14.3	16.6	53.4	56.3	55.5	957.7	1,715.9	1,493.9	1,702	8,864	10,566	764	354	420
2007	19.2	12.9	14.9	54.8	57.0	56.4	1,051.9	2,011.7	1,730.6	1,822	9,740	11,562	713	322	384
2008	18.3	11.0	13.2	55.3	58.1	57.3	1,043.4	2,236.7	1,882.6	1,986	9,402	11,388	654	334	390
2009	22.0	12.2	14.9	53.5	57.5	56.4	992.6	2,251.3	1,882.6	1,444	6,687	8,131	900	469	546
2009/2002	0.81	0.61	0.67	1.07	1.09	1.08	1.77	2.05	2.00	1.51	1.03	1.09	0.66	0.97	0.92

Sources: DZS (2001), Croatian Employment Service, Croatian Chamber of Economy, Ministry of Finance (2012), author's own calculation.

**TABLE A4**  
*Tax revenues in Croatia, consolidated general government, 2000-10 (in %)*

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Personal income tax	11.5	9.6	9.5	8.9	9.0	8.5	8.8	9.0	8.9	9.1	8.4
Corporate income tax	3.7	4.2	4.9	5.3	5.1	6.1	7.1	8.0	8.8	8.3	5.8
Social security contributions	31.2	32.1	33.2	33.7	34.3	34.1	33.7	33.6	33.8	35.2	35.1
Payroll taxes	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
Value added tax	33.6	34.7	34.2	34.6	34.8	35.1	34.7	34.1	34.3	32.6	34.1
Excise	11.8	12.4	13.0	12.9	12.4	11.9	11.5	11.0	9.9	9.7	10.8
Other consumption taxes	0.5	0.4	1.0	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.6
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
Other taxes	0.7	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.3	1.2	2.0
Total tax revenues	100	100	100	100	100	100	100	100	100	100	100

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

**TABLE A5**

*Tax structure in EU, consolidated general government, 2009 (in %)*

	PIT	CIT	Contributions	Payroll taxes	Property taxes	VAT	Excise	Other consumption taxes	Taxes on international trade and transactions*	Other taxes	Total tax revenues
Austria	22.6	4.2	37.6	6.1	1.2	18.0	5.5	4.1	0.0	0.7	100
Belgium	28.0	5.9	39.0	0.0	3.6	15.9	4.9	2.6	0.0	0.1	100
Bulgaria	10.0	8.4	25.6	0.0	4.6	31.2	18.7	0.8	0.6	0.2	100
Cyprus	11.3	18.5	24.7	2.8	1.6	25.5	9.1	4.9	0.7	0.8	100
Czech Republic	10.9	10.9	43.6	0.0	1.2	21.2	11.2	1.0	0.0	0.0	100
Denmark	54.4	4.9	3.9	1.1	5.5	20.7	6.7	2.5	0.0	0.3	100
Estonia	15.9	5.2	37.2	0.0	1.0	24.9	14.1	1.7	0.0	0.0	100
Finland	—	—	—	—	—	—	—	—	—	—	—
France	17.3	2.9	42.6	3.1	10.4	15.4	4.7	4.2	0.0	-0.7	100
Greek	15.7	7.4	40.1	0.0	3.1	19.0	7.8	6.0	0.0	0.8	100
Ireland	26.9	8.5	24.6	0.0	3.6	21.6	9.2	3.7	0.0	2.0	100
Italy	27.2	5.6	32.7	0.0	3.4	12.9	4.9	8.9	0.0	4.4	100
Latvia	20.6	5.6	33.2	0.0	2.1	22.7	14.4	0.7	0.4	0.2	100
Lithuania	13.7	6.1	42.4	0.1	1.2	23.8	11.4	1.4	0.0	0.0	100
Luxembourg	20.4	14.4	31.9	0.0	3.4	16.1	9.0	4.7	0.0	0.0	100
Malta	17.4	19.5	21.1	0.0	3.1	21.8	8.2	8.9	0.0	0.0	100
Hungary	18.5	5.7	33.3	0.7	2.1	21.1	9.0	9.3	0.0	0.2	100
Netherlands	22.3	5.5	37.8	0.2	3.4	18.1	7.1	5.5	0.0	0.0	100
Germany	24.2	1.7	41.9	0.0	1.9	18.0	6.5	2.6	0.0	3.3	100
Poland	14.6	7.2	35.7	0.7	3.5	23.4	11.5	2.2	0.4	0.7	100
Portugal	17.1	8.5	35.4	0.0	3.0	20.7	8.1	4.6	—	2.5	100
Romania	—	—	—	—	—	—	—	—	—	—	—
Slovakia	9.5	9.0	44.5	0.0	1.4	23.6	9.8	2.1	0.0	0.0	100
Slovenia	15.7	5.4	42.3	0.2	1.6	20.9	10.6	3.1	0.2	0.0	100
Spain	22.0	7.2	41.6	0.0	6.5	12.4	6.7	3.5	0.0	0.0	100
Sweden	35.1	5.9	18.5	9.6	2.2	20.6	6.2	1.8	n.a.	0.0	100
United Kingdom	28.8	7.7	23.6	0.0	12.1	15.6	9.5	2.7	0.0	0.0	100
EU (average)	20.8	7.7	33.4	1.0	3.5	20.2	9.0	3.7	0.1	0.6	100
Croatia (2010)	8.4	5.8	35.1	0.0	0.8	34.1	10.8	1.6	1.5	2.0	100

\* EU without custom revenues which belong to the EU budget.

Source: Ministry of Finance (2012), IMF (2011), author's own calculation.

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