

# Dohodovni nasuprot potrošnom konceptu direktnog oporezivanja: vječna rasprava u Hrvatskoj

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## **INCOME VS. CONSUMPTION-BASED CONCEPT OF DIRECT TAXATION: ETERNAL DEBATE IN CROATIA\*\*\*\***

*Croatia marked more than 20 years from the big tax reform in 1994, which set up foundations of market economy tax system. At the time, Croatia was the only country consistently implementing consumption-based taxation i.e. interest-adjusted personal and corporate income tax. Such tax system triggered the numerous debates among Croatian (and international) tax experts. Special contribution to such tax system and debates was implementation of the Allowance for Corporate Equity, i.e. “protective interest” (term used in Croatia). Main motive and goal of this paper is to explore current tax experts’ attitudes toward integral model of consumption-based direct taxation that was in force in Croatia between 1994-2000, and does those attitudes reflect current layout of the Croatian tax system. In the paper, we present the results of a broad expert opinion survey about the Croatian tax system with special emphasis on elements contributing to consumption- versus income-based concept debate. The paper explores determinants of experts’ policy related to personal values regarding redistribution issues and beliefs*

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*on how the tax policy affects the economy. The research focuses on several questions/statements i.e. dichotomous dependent variables for which (non)-taxation presents the main precondition for the existence of consumption or income-based system of direct taxation. Such statements refer to introduction or abolishment of taxation of dividends, financial capital gains and interests and introduction or abolishment of protective interest. From their perspective, robust econometric models are constructed with relevant socio-economic and demographic independent variables. The results imply that there are no consistent and significant expert attitudes toward different concepts of taxation. Accordingly, the results are in line with the existence of the current hybrid system i.e. system with elements of income- and consumption-based system of direct taxation. Regression results indicate that consumption-based elements of direct taxation are influenced by attitudes towards equity, neutrality, and efficiency as well as, to a lesser extent, by some demographic variables (employment sector and education).*

*Key words: consumption-based (interest adjusted) concept, income-based concept, allowance for corporate equity, direct taxation, Croatia*

## **1. Introduction**

The main objective of this paper is to explore tax experts' attitudes toward the theoretical ideal of modern tax literature - integral model of consumption-based direct taxation that was in force in Croatia between 1994-2000. In that period, Croatia was the only country consistently implementing consumption-based taxation – interest-adjusted personal and corporate income tax (PIT and CIT). The allowance for corporate equity (ACE) or “protective interest” was one of the key elements that provided existence of interest-adjusted CIT and PIT (for business entities that pay PIT like craftsmen and farmers). The ACE was abolished in 2001, but other main elements of that concept remained to a certain extent in the Croatian tax system until present time (exemption from taxation of dividends, interests on savings, and financial capital gains). Introduction of such concept of taxation in the nineties inspired numerous debates about pros and cons among Croatian and international experts. Majority of the debate dealt with ACE or “protective interest” as the most intriguing element of such system (Jurković, 1991; Šimović, 1994; Jelčić & Jelčić, 1997; Blažić, 1995 & 1999; Rose & Wiswesser, 1995 & 1998; Ott, 1996; Schmidt et al., 1996; Spajčić, 2000; Keen & King, 2002).

Since 2001, Croatia entered a period in which different concepts of taxation have alternated, mostly depending on the current ruling party. Interestingly, with

abandonment of ACE and consumption-based tax system, the majority of discussions about pros and cons also faded among tax experts in Croatia. Other research topics regarding PIT and CIT, like income distribution, tax progressivity, and tax incentives, came more into focus of general and expert public. The main thesis in this paper is that there is no consistent opinion among tax experts regarding different elements of consumption-based tax system, and that the main determinants of experts' policy opinions are mostly based on equity issues. In contrast, ACE and generally consumption-based tax system was more focused on efficiency issues.

The paper is based on a broad opinion survey that was conducted among Croatian tax experts in 2013. Opinion surveys have been applied in taxation research around the world. The Croatian survey was mostly based on the National Tax Association's expert opinion survey which has been performed every 20 years in the US (Lim et al., 2013; Slemrod, 1994). Such surveys have become a standard in the US literature (Lim et al., 2013; Slemrod, 1994; IRS, 1993), but are also performed in European countries (e.g. Kirchler (1999) for Austria, and Hammar et al. (2008) for Sweden). Other than Lim et al. (2013), and Slemrod (1994), for tax experts, general surveys are often performed among general public and taxpayers (IRS, 1993; Campbell, 2009). Furthermore, opinion surveys are very useful for investigating attitudes towards specific taxes and/or issues that determine tax policy. For example, surveys can serve to explore incidence issues (Fischer, 1985), reactance of taxpayers (as a consequence of perceived limitation of freedom is likely to manifest itself through change of attitudes, tax morale, and tax behaviour; Kirchler, 1999), tax compliance and morale (Torgler & Schneider, 2005 and 2007; Alm et al., 2006; Eicher & Stuhldreher, 2007; Randlane, 2012).<sup>1</sup> Current Croatian literature offers expert opinion survey analysis regarding general tax issues and perspectives of tax reforms in Croatia (Šimović et al., 2014), and attitudes of tax experts concerning social aspects of tax policy, mainly vertical equity of taxation (Blažić et al., 2014).

After the Introduction, the second part of the paper provides a short overview of PIT and CIT developments in the context of an integral model of consumption-based direct taxation and its elements. The third part deals with methodology. Firstly, we explain how the survey was conducted and which data were taken into consideration, and then we explain binomial probit regression model to determine the factors that influenced such development of PIT and CIT in the past 20 years. In the fourth part, the results are presented and discussed. The final part of the paper is conclusion.

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<sup>1</sup> For a more detailed literature review about different approaches to the opinion survey in taxation issues, see Šimović et al. (2014: 409).

## **2. Croatian PIT and CIT in the nineties and its development: an integral model of consumption-based taxation**

### ***2.1. Theoretical Background***

Tax systems of PIT and CIT in developed as well as (post)transition countries are generally income-based. PIT is based on the comprehensive/synthetic Schanz-Haig-Simons income concept, where all capital incomes, together with labor incomes (and transfers) are included in the tax base, and CIT is additional tax on capital income (accounting profit) derived from incorporated business.

Advocates of consumption as the appropriate tax base claim that such income-based tax system discriminates against saving, which is taxed twice - first time as being part of the existing income that is taxed by PIT, and second time as capital income (result of saving from the previous period) that is part of the comprehensive income of the next period. Additionally, capital income from corporate sector (dividends and partly capital gains) is taxed second time because it was taxed first time by CIT.

Saving (and investment) escapes this double taxation in the consumption-based PIT and CIT. This could be achieved by taxing yearly consumption, which is calculated by deducting savings from income ("savings adjusted" PIT or simply "consumption tax"), and imposing cash-flow tax at the corporate level (e.g. Kaldor, 1956, 1957; IFS, 1978; Lodin, 1978; Bradford, 1982; Bradford and U.S. Treasury Tax Policy Staff, 1984; Aaron & Galper, 1985; King, 1987; Christian, 1995; Freebairn & Valenzuela, 1998), or by not taxing capital incomes at all ("interest adjusted" PIT or simply "wage tax") accompanied by an ACE tax ("interest adjusted" CIT) (e.g. Boadway & Bruce, 1994; Hall & Rabushka, 1985 and 1995; McLure 1991; IFS, 1991; Rose, 1990; Rose, Wenger, 1992; Rose, 1998; Rose, 1999; Keen and King, 2002; Nguyen-Thanh & Rose, 2006; de Mooij & Devereux, 2011; Mooij, 2012).

### ***2.2. The Croatian Model***

Croatian tax system was the first one that avoided "double taxation of saving" by having implemented PIT without capital income taxation ("interest adjusted" PIT or simply "wage tax"), and an ACE tax ("interest adjusted" CIT).

The Croatian model<sup>2</sup> was under the dominant influence of the German Heidelberg KNS ("Konsumorientierte Neuordnung des Steuersystems") group proposal (Rose, 1990; Rose, Wenger, 1992), which was during that time also proposed to other transition economies (Rose, 1990; Rose, 1998; Rose, 1999), and later applied in the Brčko District of Bosnia and Herzegovina in a simplified cash accounting version (Nguyen-Thanh, Rose, 2006<sup>3</sup>) and in Latvia, but with "notional (protective) interest" applied to retained earnings only<sup>4</sup>.

Theoretical requirements for non-taxation of only "average/normal" capital incomes ("interest" in the broader sense) were accepted for the business level only by deducting "allowance for corporate equity" called "protective interest" in Croatia from the taxable income. At the personal, non-business level, they were mitigated and usually proposed by assuming that those incomes do not significantly depart from normal ones, so the full amount of capital income escaped taxation.<sup>5</sup> Needless to say, some capital incomes, for instance financial capital gains, could have been extremely high in the transition economies, especially due to the privatization process, but the simplicity and efficiency requirements dominated over those of equity. Such a model, of not taxing capital incomes at all, except those originating from real estate, was in complete accordance with the existing practice of Croatian (and other transition) economy(ies), where there had been only wage tax. The existence of some elements of "savings adjusted" PIT – the deduction of compulsory social security contributions, including those for pensions, was also a part of the existing practice.

On the other hand, introduction of the allowance for corporate (as well as other business) equity was accompanied by alternative calculation of profit at corporate level - those by comparing equity at the beginning and the end of the year,

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<sup>2</sup> Additional information and analysis of the model can be found in Blažić, Nikolić & Pečarić (2003), and Blažić (2008).

<sup>3</sup> However, from 2012 it was replaced by the option for immediate write-off of manufacturing equipment, plants and real estate (IBFD, 2015).

<sup>4</sup> It is also abandoned (in 2014) (IBFD, 2015).

<sup>5</sup> The only exception was real estate (except owner-occupied housing that escaped taxation altogether), where rental income as well as short-term capital gains were taxed. This was departure from the proposed KNS model, since this model included allowance for real estate equity. This departure could be explained by relatively high stock of personal real estate capital in Croatia in relation to the lack of financial capital. This is the result of previous socialist tradition, with low, effectively negative interest rates for bank saving and no possibility for other forms of financial investments, where real estate was the only "profitable" investment. However, this could be questioned since this form of income has some element of the individual business income too, so it could be treated as some additional form of labour income.

which is part of the German accounting tradition. Nevertheless, it was acceptable for Croatian companies, which had relatively well-developed accounting with a long-standing tradition of inflation adjustments. As mentioned before, protective interest was broadened to business units that pay PIT (calculated here on the value of real long-term assets only), which was/is in accordance with the requirements of non-distortion between corporate and non-corporate sector.

Furthermore, it is well-known from the taxation literature that such a model abolishes the distortion between debt and equity by allowing deduction for both costs at the corporate level as well as distortion between retained and distributed profits, since dividends are not taxed at the level of shareholders. However, former distortion still remained in Croatia due to the interest rates having been high in comparison with the basis “protective interest” (ACE)<sup>6</sup> before increase/correction for inflation.

There was no developed government bond market to establish the level of protective/notional interest (as it is the case now, for instance, in Belgium that applies a similar model), so the interest rate was firstly linked to the central bank prime rate, and later prescribed by law. Firstly, it was set to 3%, and later raised to 5%<sup>7</sup>, but it was still around half of the amount of the market interest rate. This real rate was also corrected for inflation. When inflation started to rise at the end of the nineties, the nominal rate of protective interest grew above 10% having resulted in a relatively huge tax expenditure, which sparked criticism.

Croatian economists and policy makers made no appropriate efforts to be internationally recognized by such an investment incentive. Some prominent international comparative overviews of taxation and investment of that time (e.g. IBFD, 1998) have not captured this unique feature of the Croatian tax system in an appropriate way (as it is now the case with the Belgian notional interest, for instance), so foreign investors were still bothered by the relatively high CIT rate of 35% which was applied in 1997-2000 period. Croatian tax authorities as well as the private sector were somewhat afraid of having the unique tax system that was still not implemented in Europe<sup>8</sup>, so the predominant belief was that this could

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<sup>6</sup> A similar distortion problem arose for businesses that pay PIT, where some sort of R-base of cash flow tax (with depreciation and protective interest for long-term assets) was implemented with interest (and other capital) income not taxable and interest expenses not tax deductible.

<sup>7</sup> At the beginning of the reform, this 3% equity allowance was accompanied by 25% CIT rate. In order to avoid distortions, because of the highest personal income tax bracket rate being 35%, the CIT rate was raised to the same level, followed by the increase of equity allowance to 5%.

<sup>8</sup> Some similar movements in Italy and Austria at the end of the nineties were not so radical (protective interest was allowed for the qualified increase of the capital invested only and this part of the profit was not exempt from taxation but taxed at a lower rate), and Belgian case of ACE was not present at that time.

jeopardize joining the EU. The (true) fact that such an allowance discriminates labor against capital, and provides windfall gain for the already invested capital (even before the privatization process), not concentrating to newly invested capital (such as investment tax credits/allowances, accelerated depreciation<sup>9</sup> as well as immediate expensing/write off), resulted in the increasing demand for these up-front type of allowances. All this criticism resulted in the abolishment of the ACE tax in 2001 with the parallel decrease of CIT rate from 35% to 20%. Although it resulted in relatively the same CIT burden on average, capital intensive industries suffered a great short-term as well as long-term losses compared to the previous system.

The demand for more up-front incentives resulted in the replacement of protective interest by opting for immediate write-off (only for equipment). Thus, the Croatian tax system again applied consumption-based taxation, but using the other model – this time of the cash-flow tax. However, this was not done systematically as was previously the case with the ACE tax, but optionally, and only concerning one element (still one of the most important cash-flow elements)<sup>10</sup>. However, no separation of balance sheet for business and tax purposes resulted in enormous accounting problems due to long-term asset valuation. Furthermore, this option is suitable for corporations with profits big enough to use the resulting deduction, and not for corporations with losses. Additionally, loss carry forward could not have been augmented by the protective interest rate as before, not even by the inflation rate. Therefore, this model lasted only four years. In 2012, tax exemption for reinvested profits (the option proposed already in 2001) was introduced as an alternative. Some experts (Santini, 2009; Brkanić 2011; Parać, 2014) still think the ACE is the best solution, as it is evident from the survey results. However, this idea is now closer to the later Austrian, Italian and Latvian solutions. On the other hand, as time goes by, there are more and more young tax practitioners who do not even know what the concept actually means.

The abolishment of the consumption-based CIT in 2001 was accompanied by the introduction of dividend taxation (by way of separate-linear tax rate), which was abolished again in 2005 and reintroduced in 2012. Most of the interest remained tax free, but in 2015 the tax on interests on bank savings was introduced. The taxation of financial capital gains is announced for 2016. A deduction for social security contributions was extended to voluntary pension and life insurance premiums (further elements of “savings-adjusted” PIT) in 2001, but it was also abolished in 2010. Thus, today’s system is now farthest away than ever from the consumption-based taxation. The first country in the world with the consumption-based system of direct taxation now applies the income-based system – better to

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<sup>9</sup> Introduced in 1997 as a possibility to double the rates, and present even today.

<sup>10</sup> This option did not entail immediate write-off only, but also complete freedom of accelerated depreciation.



say, dual income tax. However, even this tax could be regarded as a systematic hybrid model between consumption-based and income-based taxation.<sup>11</sup>

As mentioned before, the current Croatian tax system is a hybrid system which includes both elements of income-based and consumption-based taxation concept. In the past 20 years, the domination of this particular concept has mostly depended on the current ruling party. Table 1 presents a brief overview of exemption of the basic PIT and CIT elements that determine the final concept of taxation.

*Table 1.*

**DEVELOPMENT OF BASIC PIT AND CIT ELEMENTS  
AND CONCEPT OF TAXATION**

<b>Exemptions and allowances</b>	<b>1994-2000</b>	<b>2001-2004</b>	<b>2005-2011</b>	<b>2012-2015</b>
Exemption of dividends	Yes	No (15%)	Yes	No (2012-13 12% over 12.000 HRK; from 2014 12%)
Exemption of financial capital gains	Yes	Yes	Yes	Yes (No from 2016 12%)
Exemption of interests on savings and securities	Yes	Yes	Yes	Mostly (No from 2014 12% for savings)
Allowance for corporate equity (protective interest)	Yes	No (20% CIT rate)	No (20% CIT rate)	No (20% CIT rate)
Concept of taxation	Consumption-based (interest adjusted PIT and CIT)	Hybrid, but mostly income-based (with some consumption-based elements: savings and interest-adjusted PIT and CIT)	Hybrid system – elements of income-based and consumption-based taxation (interest-adjusted and saving-adjusted)	Hybrid, but mostly income-based

Source: Authors.

<sup>11</sup> For development and effectiveness of the changes in Croatian PIT in the period 1994-2010, see Šimović (2012).

### 3. Methodology

We partially follow the methodology developed by Lim et al. (2013) which has a long history regarding US NTA expert opinion surveys. It can be considered as benchmark methodology for such surveys. According to Lim et al. (2013), we developed a serial binomial probit regression model to explore personal values regarding income inequality and redistribution issues, and professional economic views and beliefs how the tax policy affects economy. The above-mentioned methodology is adjusted to Croatian circumstances and research problem regarding development of an integral model of consumption-based taxation in Croatia.

#### 3.1. Survey Data

Data used in this research are based on the expert opinion survey conducted in Croatia in the summer of 2013 by authors of this paper. Croatian tax experts from the public (local government units, heads of finance departments, and the tax administration), private (tax advisers and accounting houses), and the academic sector were asked by e-mail to assess relevant on-line questions/statements using five-level Likert items. Out of 1,000 targeted population experts, 304 responded. For the purpose of this paper, we observe a narrower sample of tax experts regarding the academic sector (203 responses) i.e. only university professors whose fields of interest are public finance, tax policy and accounting (departments of economics, business schools, and law school). In this way, we expect more precise information regarding specific tax issues like consumption-based tax system.<sup>12</sup> The survey covered taxes of all types and levied by all levels of government (92 statements/questions).<sup>13</sup> The answers were given as 5-level Likert items. For the purpose of the regression model in this paper, sets of statements/questions regarding PIT and CIT were selected as dichotomous<sup>14</sup> dependent variables i.e. determinants of

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<sup>12</sup> Broader academics sample includes professors of monetary economics, financial markets and institutions etc. It would be risky to observe broader sample because we couldn't differentiate answers from those experts who have less knowledge regarding specific tax issues like ACE. Those experts who have less knowledge regarding specific tax issues have more indifferent preferences regarding specific tax issues and have propensity to offer neutral answer instead leaving question unanswered. That situation can blur clear preferences from experts who have more specific knowledge. Further, broader sample was used to test some other preferences regarding general tax issues that are not included in this paper.

<sup>13</sup> For more details about the expert survey and adjustments of the survey for Croatian circumstances, see Šimović et al. (2014: 409-410).

<sup>14</sup> With neutral answers being omitted (in line with Lim et al., 2013).

the given concept of taxation.<sup>15</sup> Also, several questions were used as predictors (independent variables) concerning different observed models. Furthermore, only positive or negative answers (excluding neutral responses) are observed, which is in line with benchmark research developed by Lim et al. (2013).<sup>16</sup>

### *3.2. The Model*

As mentioned before, we developed four binomial probit regression models to explore determinants of experts' policy opinions regarding consumption-based tax system. For that purpose, we selected four questions/statements that best present determinants of consumption-based direct taxation i.e dichotomous dependent variables, first three of them being inverted (set in the positive direction):

- 1) Inside PIT, dividends should be taxed;
- 2) Inside PIT, financial capital gains should be taxed;
- 3) Inside PIT, interest on savings and securities should be taxed;
- 4) Protective interest (allowance for corporate equity - ACE) should be reintroduced.

The above-mentioned statements present the four pillars of consumption-based concept of direct taxation that was in force from 1994 to 2000. As presented before (Table 1), some of the given elements remained, to some extent, until present time.

In order to establish the prevalence of different socio-economic issues that determine experts' attitudes toward an integral model of consumption-based direct taxation, we selected four questions/statements (independent variables) that best

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<sup>15</sup> Questions/statements are Likert-type items and are ordinal in nature. In order to select the type of regression, we have tested the proportional odds assumption for ordered regression, using test of parallel lines. The results indicate that some variables satisfy the criterion and some variables do not satisfy. Our intention is to perform the same method for all chosen questions/statements and therefore we have casted away ordered regression method. We have thought over multinomial regression and binomial regression. The limitation of both methods is loss of information because ordinal variables are treated as categorical for multinomial regression or dichotomous for binomial regression. Although in binomial regression we lose neutral answer which leads to the flawed results, we opted for binomial regression because multinomial regression estimates several parameters for every independent variable included in model while binomial regression estimates one parameter for every dependent variable.

<sup>16</sup> When collapsing ordinal Likert-type items to dichotomous variables we lose neutral answer and in that way results are flawed.

describe personal values regarding income inequality and redistribution issues, as well as questions that describe expert views and beliefs how tax policy affects economy. Also, in order to develop an adequate model, we included demographic variables describing sectors of employment and education levels. Independent socio-economic variables (predictors) are:

A. All sources of income inside PIT should be taxed in the same way (at statutory rates, without allowing the lower withholding tax to be the final tax due).

B. Capital incomes should be taxed at lower rates than labour incomes.

C. Non-taxation of interest encourages saving.

D. The equity principle should have priority over the efficiency principle in creating tax policy.

The first two statements (A and B) present two different approaches toward redistribution issues as well as efficiency/neutrality in taxation. Experts who have positive opinion of statement A, compared to those who have answered negatively, are expected to be more in favour of income-based system of direct taxation. On the other hand, experts who have positive opinion of statement B, compared to those who have answered negatively, are expected to be more in favour of consumption-based system of direct taxation. In that sense, we assume statements A and B to be relevant predictors for personal attitudes toward redistribution issues.

Also, statements C and D present two different approaches regarding certain experts' beliefs and views on how tax policy affects the economy. Experts who have positive opinion of statement C, compared to those who have answered negatively, are expected to be more in favour of consumption-based system of direct taxation. They put more emphasis on efficiency issues i.e. they believe that lower taxation of capital income<sup>17</sup> (dividends, interests, capital gains) contributes to economic growth, investments and savings. Experts, who have positive opinion of statement D, compared to those who have answered negatively, present opposite beliefs favouring classical equity principle of taxation, which is in favour of income-based taxation.

For demographic variables, we placed special emphasis on experts from academia and the public sector, as well as for education level. As mentioned before, for academia, we observed only university professors whose fields of interest are public finance, tax policy, and accounting. Secondly, the majority of experts in the public sector are employees of the Tax Administration and local self-government units (heads of the finance departments of those units). In both cases, private sector is a reference category. For the education variable, we compared the highest

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<sup>17</sup> „Interest“ in the broader sense (as in the consumption-based models).

education level (M.Sc. and Ph.D.) to all other, because we anticipate that experts with higher education level will have a clearer attitude toward special tax elements that define consumption-based system of direct taxation.

## 4. RESULTS

Consumption-based system of direct taxation implies non-taxation of dividends, financial capital gains and interest, and reintroduction of ACE. On the other hand, income-based system of direct taxation implies taxation of dividends, financial capital gains, and interest in the same way as labour income, as well as abolishment of ACE. Development of Croatian tax system displays frequent changes in the tax system resulting in a hybrid tax system with elements of both income- and consumption-based system of direct taxation (Table 1). Results presented in this chapter try to explain the main drives of such stance and experts' position between these two models.

### *4.1. Descriptive Statistics and Correlation Matrix*

Table 2 presents distribution of answers (in %), median and IQR for statements i.e. questions that present dependent variables. In the original survey, five-level Likert items were used, but for the purpose of subsequent modelling, only positive or negative answers (excluding neutral responses) are observed<sup>18</sup>.

Data from Table 2 suggest that there is no consistent opinion or high consensus among tax experts regarding different elements of the consumption-based tax system. The majority of experts are in favour of taxing dividends and financial capital gains which is more in line with income-based system of direct taxation. On the other hand, the majority of experts are in favour of reintroducing ACE which is more in line with the consumption-based system of direct taxation. There is no broad consensus regarding interest taxation.

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<sup>18</sup> The answers "totally/strongly agree" and "mostly agree" are merged into "yes" answers, while the answers "mostly disagree" and "totally/strongly disagree" are merged into "no" answers.

Table 2.

DISTRIBUTION OF ANSWERS (IN %), MEDIAN AND INTERQUARTILE RANGE (IQR) FOR DEPENDENT VARIABLES

Question/statement	Answers* (%)					Median (IQR)	N
	1	2	3	4	5		
1) Inside PIT, dividends should be taxed.	12.3	10.8	11.8	26.1	38.9	4 (3-5)	203
2) Inside PIT, financial capital gains should be taxed.	10.3	11.3	11.3	27.6	39.4	4 (3-5)	203
3) Inside PIT, interest on savings and securities should be taxed.	25.6	18.2	15.8	18.2	22.2	3 (1-4)	203
4) Protective interest (allowance for corporate equity - ACE) should be reintroduced.	13.3	6.9	26.1	26.6	27.7	4 (3-5)	203

Note: \* 1 - totally/strongly disagree, 2 - mostly disagree, 3 – neutral, 4 - mostly agree and 5 - totally/strongly agree.

Source: Authors.

Similar results are presented in the correlation matrix in Table 3. There is a strong and significant correlation between statements 1 and 2, and also a significant, but weaker correlation between statement 3 and the first two. Interestingly, there are weak and non-significant correlations between statement 4 and other statements.

Table 3.

CORRELATION MATRIX (KENDALL'S TAU-B CORRELATION COEFFICIENTS)

Question/statement	1	2	3	4
1	1	0.832**	0.463**	-0.005
2	0.832**	1	0.468**	0.037
3	0.463**	0.468**	1	-0.016
4	-0.005	0.037	-0.016	1

Note: \*\* p < 0.01; \* p < 0.05

Source: Authors, based on survey responses.

#### ***4.2. Binomial Probit Regression Results and Discussion***

The above-mentioned results suggest a non-consistent opinion among tax experts and can explain current hybrid, but mostly income-based system of direct taxation in Croatia. Such confusing and diverse results raise the question what are the main drivers of such non-consistency. Table 4 presents the results of binomial probit regression model where such socio-economic and demographic drivers (predictors) are explored for the given models i.e. key elements of consumption or income-based system of direct taxation.

Results from Table 4 suggest that all four independent variables (predictors) play an important role in almost every observed model. The exception is model 4, regarding reintroduction of ACE where no significant result was found. Statements A and B present the two crucial, but opposite predictors regarding redistribution issues. For the taxation of dividends, (model 1), they are both found to be significant. Experts who think that all types of income (capital vs. labour) should be taxed in the same way, compared to those who have answered negatively, are expected to be more in favour of dividend taxation i.e. income-based system of direct taxation. The opposite applies for statement B (Capital incomes should be taxed at lower rates than labour incomes).

In regard to model 2 (financial capital gains taxation), statement B is found to be the significant predictor, while for model 3 (interest taxation), statement A is found to be the significant predictor. In both cases, number sign of regression coefficient (positive or negative) is adequate i.e. implies that both statements, if significant, play crucial predictors for personal attitudes toward redistribution issues. This is also the case for model 4 (ACE), where no significant results were found.

Table 4.

RESULTS OF BINOMIAL PROBIT REGRESSION

Model		1 (dividends)	2 (capital gains)	3 (interests)	4 (ACE)
A.All sources of income inside PIT should be taxed in the same way.		0.628* (0.329)	0.459 (0.318)	1.242*** (0.405)	-0.448 (0.341)
B.Capital incomes should be taxed at lower rates than labour incomes.		-0.777** (0.351)	-1.054*** (0.355)	-0.570 (0.411)	0.015 (0.398)
C.Non-taxation of interest encourages saving.		-0.809 (0.749)	-1.093 (0.784)	-1.636*** (0.511)	0.002 (0.421)
D.The equity principle should have priority over the efficiency principle in creating tax policy.		1.511*** (0.415)	1.160*** (0.394)	1.444*** (0.404)	-0.229 (0.459)
Sector	Public <sup>a</sup>	0.297 (0.498)	-0.200 (0.482)	-0.448 (0.432)	-0.44 (0.595)
	Academia <sup>a</sup>	-0.027 (0.504)	-0.709 (0.567)	-1.400** (0.586)	-0.013 (0.573)
Education - M.Sc./Ph.D. <sup>b</sup>		-0.635 (0.415)	-0.165 (0.372)	0.979* (0.506)	-0.456 (0.41)
hi <sup>2</sup> -stat <sup>c</sup>		31.818 [0]	25.557 [0.001]	29.406 [0]	3.173 [0.869]
log-likelihood		-34.539	-33.306	-36.293	-40.549
Pseudo R <sup>2</sup>		0.293	0.277	0.321	0.032

Notes: Robust standard errors are in parenthesis. The p-values of the  $\chi^2$  are in brackets.

\* p < 0,1; \*\* p < 0,05; \*\*\* p < 0,01

a) Reference category is private sector

b) Reference category is Level 4.2-6 according to Croatian Qualification Framework (high school - bachelor).

c) Wald  $\chi^2$  tests the hypothesis that at least one of the regression coefficients is not equal to zero.

Source: Authors' calculation.

Equity principle is found to be a stronger determinant than the efficiency principle in the context how tax policy affects economy. Such conclusion suggests significance of statement D as predictor in all observed models. Statement D is



the best predictor regarding the majority of models (again, exception is model 4). Experts who are more in favour of the equity principle (statement D), compared to those who answered negatively, are expected to be more in favour of taxation of dividends, financial capital gains, and interest. Statement C, which implies the opposite expert opinion (negative regression coefficients), is a significant predictor only regarding taxation of interests.

Regarding demographic variables, academics (compared to the private sector) are more inclined against taxation of dividends, financial capital gains and interest (in favour of consumption-based taxation), but on the other hand, they are more against introduction of ACE (in favour of income-based taxation). Although we narrowed academia to those who should have a more clear and consistent opinion towards the model dilemma, their results (compared to the private sector) are more in line with the hybrid system that was in force in the longest period from 2001-2012 (Table 1). Such results should be taken with caution, because regression coefficients were significant only for model 3 (interest).

Similar explanation can be delivered for experts from the public sector (compared to the private sector). The only exemption is found in the case of dividend taxation, but there are no significant results in any of the observed models.

Likewise, a similar conclusion can be derived regarding level of education. Attitudes of experts with higher level of education (M.Sc. and Ph.D.) compared to lower level of education are also in line with the current hybrid system: The only significant coefficient was found for model 3, where experts with higher level of education are more in favour of taxing interests on savings and securities.

## 5. Conclusion

(Non)-taxation of all four elements i.e. models (dividends, financial capital gains, interests, and ACE) analysed in the paper presents basic pillars of the consumption-based or income-based system of direct taxation (PIT and CIT). A strong conclusion can be derived that there is no consistent opinion or high consensus among tax experts regarding how those elements should be taxed. Accordingly, there is no consensus regarding consumption-based vs. income-based system of the direct taxation dilemma. Such results are in line with the current stance in the Croatian tax system i.e. the hybrid system prevails with elements of both referent models.

It needs to be emphasized that there are no consistent and significant attitudes toward ACE at all (Table 2 and 3). ACE was the main characteristic of Croatian consumption-based tax system in the period 1994-2000. On the other hand, atti-

tudes toward capital incomes (dividends, financial capital gains, and interests) are rather consistent i.e. are more or less in favour of one given model of taxation. The fact that ACE, unlike non-taxation of capital incomes, has not been in effect since 2001 i.e. that it is almost forgotten, could be the main reason behind the lack of consistent (and more positive) reactions to that instrument as well as many neutral answers for this question (more than one quarter).

On the other hand, the results of binominal probit regression are mostly consistent with the consumption-based versus income-based concepts. Personal values regarding redistribution issues (statements A and B), as well as statements (C and D) describing expert views and beliefs how tax policy affects the economy are found to be important determinants of the taxation concept. Experts who have positive opinion of statements A and D, compared to those who answered negatively, are more in favour of income-based system of direct taxation. The opposite applies for statements B and C i.e. those experts are more in favour of consumption-based system of direct taxation. The problem arises in the fact that those attitudes are not harmonized among the observed models, which is one of the reasons for existence of the hybrid system. Again, ACE model is found to be problematic where predictors are found to be somewhat consistent (positive or negative), but insignificant. Furthermore, it can be concluded that, besides the existence of two apparent attitudes (dilemma), equity issues rather than efficiency issues play a slightly more significant role in the expert opinion towards the final concept of taxation. This fact also explains the current hybrid system with some elements of income-based direct taxation.

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DOHODOVNI NASUPROT POTROŠNOM KONCEPTU DIREKTNOG OPOREZIVANJA:  
VJEČNA RASPRAVA U HRVATSKOJ

Summary

Prošlo je više od 20 godina od prve velike porezne reforme iz 1994. godine kada su utvrđeni temelji poreznog sustava prilagođenog tržišnom gospodarstvu. U to vrijeme Hrvatska je bila jedina zemlja koja je dosljedno primjenjivala alternativni model izravnog oporezivanja potrošnje, odnosno porez na dohodak i porez na dobit koji nisu uključivali dohotke od kapitala. Poseban doprinos raspravi među poreznim stručnjacima oko takvog sustava činila je primjena tzv. zaštitne kamate, odnosno umanjenja osnovice za vlastiti kapital. Glavni motiv i glavni cilj ovog rada jest ispitati sadašnje stavove poreznih stručnjaka u Hrvatskoj prema modelu izravnog oporezivanja potrošnje koji je postojao u Hrvatskoj u razdoblju od 1994. do 2000. godine, te odražavaju li se ti stavovi na izgled postojećeg poreznog sustava. U radu predstavljamo rezultate ankete odnosno istraživanja stajališta o poreznom sustavu koja je provedena među poreznim stručnjacima u Hrvatskoj. Poseban naglasak u radu stavljen je na elemente oporezivanja (dohotke od kapitala) čije (ne)oporezivanje

utječe na približavanje određenom konceptu oporezivanja. U radu se proučavaju determinante koje utječu na stavove o poreznom sustavu, a odnose se na osobne stavove o preraspodjeli dohotka i na uvjerenja kako porezni sustav može djelovati na gospodarstvo. Istraživanje je fokusirano na nekoliko elemenata oporezivanja odnosno pitanja (izjava) koja predstavljaju zavisne binarne varijable čije (ne)oporezivanje utječe na postojanje potrošnog ili dohodovnog koncepta direktnog oporezivanja. Radi se o (ne)oporezivanju dividendi, kapitalnih dobitaka i kamate, te o (ne)uvođenju zaštitne kamate. Razvijen je probit ekonometrijski model sa relevantnim socio-ekonomskim i demografskim nezavisnim varijablama. Rezultati upućuju na postojanje nekonzistentnih i nesignifikantnih stavova među poreznim stručnjacima prema izboru jednog od koncepata oporezivanja. Prema tome, rezultati istraživanja su u skladu s postojećim „hibridnim“ konceptom direktnog oporezivanja koji sadrži elemente potrošnog i dohodovnog koncepta. Rezultati regresijske analize ukazuju da na koncept oporezivanja značajno utječu stavovi o jednakosti, neutralnosti i učinkovitosti poreznog sustava, kao i određene demografske varijable vezane uz sektor zaposlenja i razinu obrazovanja.

Ključne riječi: potrošni koncept direktnog oporezivanja, dohodovni koncept direktnog oporezivanja, zaštitna kamata, direktno oporezivanje, Hrvatska