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Blažić, Helena

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**TAX COMPLIANCE COSTS OF SMALL
BUSINESS IN CROATIA**

Helena Blažić

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TAX COMPLIANCE COSTS OF SMALL BUSINESS IN CROATIA *

Helena Blažić

Faculty of Economics, University of Rijeka, Rijeka

helena@oliver.efri.hr

Abstract

The paper measures the tax compliance costs of business units that pay personal income tax in Croatia for the period 2001/2002. They comprise all taxes, except custom duties.

The regressive effect is proven, measured by different size measures. In the cost structure the cost of time, predominantly the owner's time, is predominant. Concerning the type of tax, personal income tax and VAT are, in aggregate, of almost the same importance.

As a percentage of GDP the tax compliance costs come to around 0.8%. The share of personal income tax compliance costs in the relevant tax revenues is extremely high (almost 100%), which calls for the substitution of self-assessment by lump sum (estimated) tax. Psychological cost of that tax does not seem to be significant. The share of VAT is also considerable (25% or at least 16%), calling for a higher exemption threshold.

JEL classification: H25, H32, G38

Key words: compliance costs of taxation, personal income tax, small business, VAT, Croatia, social security contributions, wage tax

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1. Introduction

Taxation compliance costs have, in the last twenty-five years, been the subject of growing interest, especially in developed countries – on the part of both academics and governments. Still research of this kind is very rare among transition countries², mostly because it requires complicated investigation involving the collection of large amounts of data not available from published sources, but also because there has been a tendency to neglect the problem.³

This paper focuses on the tax compliance costs (of all taxes except customs and excise duties) of business units that pay personal income tax. Since the number of the employees does not exceed 50, they can be regarded as small businesses⁴. Furthermore, the average number of employees is one (1) and only 2.78% of them have more than five employees, so the research is effectively focused on micro entrepreneurs.

We decided to undertake research to encompass (almost) all the taxes at the relevant (business) level in one questionnaire (as was presented for instance in Allers, 1994; Evans, Ritchie, Tran-Nam, Walpole 1997⁵; OECD, 2001 and in some way also in Sandford and Hasseldine, 1992⁶, acc. to Hasseldine, 1995). Furthermore, it is recognized (International Tax Compliance Costs Symposium) that it is difficult to state the compliance costs of each type of tax precisely. Even if it were possible, such a technique (the addition of the incremental compliance costs of different taxes) could underestimate the total compliance costs of business taxes (Sandford, 1995, p. 395-396). Businesses in our survey are asked about the compliance costs of all the taxes together⁷ and after that about the structure of all the costs concerning the different types of taxes (small business personal income tax, VAT, personal income taxes on wages and social security contributions).⁸

As usually, compliance costs are defined as the costs incurred by taxpayers in meeting the requirements imposed on them by the law and the revenue authorities, over and above the actual payment of tax and over and above any distortion costs inherent in the nature of the tax (Sandford, 1995, p.1). They entail labour costs (owner, unpaid help, internal bookkeeper/accountant or other employee who handles taxes), external costs (bookkeeping/accounting office) as well as some other internal non-labour costs (software and hardware (additional), forms and stationary, postage and telephone, instructional literature and seminars, travelling costs, court costs). Tax planning is included as an inherent part of tax compliance costs. This research has not attempted to measure psychological costs directly (quantitatively), but only indirectly and concerning only personal income tax. No attempt has been made to distinguish “regular”

² In Slovenia (Klun, 2002, 2004a, 2004b) this problem has been recognized and partially measured (but not concerning businesses that pay individual income tax – small business) as well as in Czech Republic (Vitek, Pavel, Pubal, 2003).

³ The reasons for the lack of such research in Croatia are explained in Ott and Bajo, 2001, p. 230-235.

⁴ Among the studies that are concentrated solely on small business /SMEs the Australian study (Small Business Deregulation Task Force, 1996; acc. to Turner, Smith and Gurd, 1998, p. 96) and the OECD study (OECD, 2001) should be mentioned. But both studies are broader and not concentrated exclusively on tax compliance costs and the latter one defines SMEs as having an upper limit of 500 employees. Another Australian study (Evans, Ritchie, Tran-Nam, Walpole 1997), although encompassing all business units, includes a special chapter dedicated to small business. The Collard, Godwin research (1999) for instance, also calculated compliance costs per employee for very small employers - with 1, 2 and 3 employees). Some VAT studies (synthesis in Bannock, 2001) are concentrated exclusively on small business.

⁵ And also in: Evans, Ritchie, Tran-Nam, Walpole, 1998 and Tran-Nam, Evans, Ritchie, Walpole, 2000.

⁶ This research in effect grouped taxes in two questionnaires.

⁷ Similarly as in OECD, 2001, but that study did not try to get the data about the tax structure of compliance costs.

⁸ As opposite to the technique where taxpayers are asked concerning the different sorts of compliance costs (labor costs, external costs...) about the amount dedicated to each type of tax (with the ultimate addition of all the components).

and “initial” (“temporary” or “commencement”) costs⁹, not only because this would be extremely hard for the taxpayers, but also because tax changes are almost “regular” in Croatia.

Due to the lack of relevant data, the cash-flow benefits and tax deductibility benefits are assessed only roughly or are even impossible to assess.

The research has tried to test several hypotheses:

- Small business tax compliance costs are regressive – the same pattern of regressivity that is internationally proven to be true for the entire range of businesses holds also for the subgroup of the business units that are personal income tax payers;
- Taxpayers are not aware of what is meant by compliance costs; there is considerable accounting-taxation overlap and this is negatively correlated with firm size;
- Smaller business relies heavily on external professional accountants; as the size of business increases, they appear to spend proportionately more money expanding internal resources for tax compliance;
- Labour costs are the most important part of the tax compliance costs;
- VAT is responsible for the bulk of compliance costs;
- The proportion of tax compliance costs in the relevant tax revenues is high.

2. Methodology

2.1. Survey and Sample

The research was carried out by an interview survey. A postal survey was rejected after consultation with the other researchers and experts in Croatia, because of the very small response rate in Croatia. The commercial polling agency (PULS) that administered the interviews also strongly advocated interview survey, because of the very high postal costs in Croatia. Furthermore, interviews guarantee a better understanding of the stated questions and more reliable results. Unfortunately, they are, of course, more expensive.

A couple of accounting offices, representative of “craft and trades” chamber and an accounting union were engaged as a consulting team (advisory committee) to correct the questionnaire and help us to test it on some relevant business units (“the pilot”)¹⁰. The questionnaire was accompanied by a covering letter explaining the necessity of the research and its benefit to taxpayers. Instructions for interviewers were added to the questionnaire and a seminar for them was held.

The planned timing of the research (March-June 2002) was the best possible for the tax-filers to still remember their tax return data (the personal income tax returns for the previous year must be filed by the end of February together with the yearly VAT form). Unfortunately, the Tax Administration of Croatia was

Something similar is employed in Collard and Godwin, 1999 (questionnaire in Appendix), where a checking question concerning “reported” compliance costs of only PAYE and National Insurance (entailing all the sorts of compliance costs) was put and after that its division concerning PAYE, NICs and SSP/SMP.

⁹ Mostly due to the tax changes.

¹⁰ The «pilot» confirmed our belief that taxpayers are not aware of what is meant by tax compliance costs and that itemizing them was the proper solution. It changed our first draft of the questionnaire in the way that some questions that had been originally for the owner were redirected (sometimes optionally) to the person who handles tax work (in some cases, of course, it could be owner too).

overwhelmed with other duties and unable to supply us with the relevant population data¹¹ (business units that pay personal income tax grouped according to their size measured in terms of number of employees¹²) and relevant addresses. Thus the interviews started at the end of April. Furthermore, the interview process was attended with a number of difficulties. The responding taxpayers complained that it had been very hard for them to assess the number of hours spent on tax matters, they were suspicious concerning the promised anonymity, complained that it took too long...¹³ The biggest problem for the interviewers in the cases where the entrepreneur had an accounting/bookkeeping office was to convince both sides to cooperate.¹⁴ Furthermore, often even inside the business more than one person had to be interviewed (owner and some other person who handles taxes). So, the interview process was prolonged and we ran into summer, which is well known to be the worst period for a survey. We paused in August, and prolonged in September and October. We exhausted all the addresses obtained as well as the time available and with great difficulty succeeded in obtaining 257 responses (0.25% of the total population).

The structure of the sample according to the size (number of employees) and the structure of the total population of 103,451 businesses are presented in Table 1.

Table 1 Structure of sample and total population in terms of number of employees

Number of employees	Sample (N)	Sample (%)	Total population in %
0	84	33	59
1-2	73	28	30
3-5	40	16	8
6 and more	60	23	3
Total	257	100	100 (=103,451)

The sample was weighted to reflect the population structure. Although not performed in the previous similar “synthetic” studies (for instance Allers, 1994; OECD, 2001) the sample was provisionally weighted also by the number of entrepreneurs that are exempt from VAT¹⁵, because their share in businesses that pay personal income tax is significant (36% in the total population) and not only concentrated in the first stratum only. In the sample they were underrepresented (only 15.5%) and it is obvious that being registered for or exempt from VAT substantially influences total tax compliance costs.

Unlike for the size (number of employees) or VAT status, where there is logical positive relationship concerning tax compliance costs¹⁶, the sample was not weighted by sector of activity, because there was no positive relationship established.¹⁷

¹¹ Although cooperation was initially agreed at the highest level, the data processing department of the Tax Administration, because of its load of duties, was unable to supply us with the all relevant information. We were also blamed for the official tax statistics being delayed because of our survey and finally the data processing department was forbidden to supply us with any additional data. As a result, only a rough estimation of cash-flow benefits and tax deductibility benefits was made. Furthermore, in order to get all the individual data, a complicated procedure was followed. Everything had to be written in details and processed from top to bottom. Since we were not able to communicate directly with the person handling the relevant data a lot of misunderstandings occurred. This took us a lot of time and made the research extremely difficult.

¹² Based on the 2001 data; the average number of employees per month was calculated (taking into account seasonal workers too)

¹³ So the last questionnaire question concerning different taxes paid was dropped.

¹⁴ Following the suggestions of the previous researchers (for instance Sandford, 1995, Gurd and Turner, 2001, p.80), we have decided that it would be impossible for the entrepreneur (or some of his employees) to assess the part of the external fees accounted for tax work (including its tax structure) as well as to answer some other qualitative tax compliance questions (the same was confirmed by our consulting team). So, we decided, in a case where an accounting/bookkeeping office is engaged, to put that question as well as other tax related questions to that office.

¹⁵ In Croatia this is optional for entrepreneurs below the turnover threshold of 85,000 HRK in the previous year.

¹⁶ The correlation results are presented in the third chapter (Results).

2.2. Measurement of tax compliance costs

As noted in the introductory section, questions were put concerning different sorts of costs (time costs, other internal costs, external costs) for all taxes together (excluding customs) and after that the relevant persons were asked to state the structure of these costs (in percentages) concerning different types of taxes.

In order to make it easier for the respondents they were asked about the relevant tax compliance costs for the last 12 months. The size data (number of employees) was also for the last 12 months.¹⁸

In order to avoid any misunderstanding concerning tax compliance activities such as possible accounting-taxation overlaps typical for small business¹⁹ tax compliance activities were itemized.

In valuing the time of the owner the respondent's own valuation was chosen, as usually. As expected, since the value of working hour has a part of the "profit" as well as "gross" element in it (but also maybe because of the exaggeration), its average was double so high as the average wage per hour (including social security contributions). Hence an alternative valuation was performed too.

There is no right way to place a value on an hour of unpaid help. We decided that it should in some way be connected to the owner (it is mostly spouse or some other family member), so the method applied by Allers (Allers, 1994, p.122) of valuing an hour of unpaid help at the half of the owner's value of time was applied.

The value of hour of an employee was measured according to Sandford's suggestion (1995, p. 398), relating to not only "hourly wage rate", but "the wage rate plus the proportion of whatever other costs (like payroll taxes or social security contributions) are attributable to the employee." So, we asked about monthly gross wage (net wage plus taxes and plus employees' social security contributions) of the employee who deals with taxes, and added the employer's social security contributions.

External fees for tax compliance work were calculated by asking the owner about the fee paid in the past 12 months for the services of the accounting/bookkeeping office (which comprises other accounting work too) and then asking this external accountant/bookkeeper to estimate how much of the stated amount relates to the tax compliance work. It turned out that the average share of tax work in the fee was around 32.42%.

The biggest problem was other internal (non-labour) costs, often called "overheads". There are several approaches to this problem: they range from excluding them altogether²⁰, via adding "any other costs" that seem to capture mostly some non-regular or extraordinary costs²¹ to the inclusion of some²² or

¹⁷ This is maybe due to the sample being too small, but the result was also expected, because it is normal in Croatia to register for all the economic activities and later even not to concentrate only on one, but to perform other activities besides the «main one», even on a large scale.

¹⁸ There is some imperfection here concerning the stratification and weighting (as well grossing up) which were done according to 2001 data, but it was impossible to do it in a different way.

¹⁹ This was measured implicitly by asking taxpayers what books and evidence they would keep if there were no taxes.

²⁰ For instance in Evans, et al., 1997; Sandford's and Hasseldine's questionnaire about GST and Business Income Tax in the 1992 research.

²¹ For instance Sandford's et al. questionnaires in Administrative and Compliance Costs of Taxation, 1989; Pope's questionnaire about company income tax from 1992.

²² In general software and hardware – for instance OECD questionnaire, 2001 (but it seems that this survey failed to capture these costs properly).

(almost) all “overhead costs”²³. It is obvious that the development of technology changes the structure of tax compliance costs²⁴, so it would seem unreasonable to exclude hardware and especially software costs. Also, some other “direct” costs that could be attributable to taxes could be included such as seminars, literature, forms... On the other hand, forcing taxpayers in general, especially small business, to estimate the “tax compliance costs” share of heating, lighting or office space seems too demanding. On the other hand, these costs are really “overheads” and they would be incurred even without taxes (this is especially true for the office space of small business). So, we decided to take some “intermediate approach”. We have rejected “pure” overhead costs such as office space, heating, lighting, which would mostly exist even without taxes. The same holds true even for hardware (computers) already bought and used for all other tasks inside the business. But if computer and especially software is bought mostly because / especially for tax work then the yearly depreciation (linear²⁵) could be included. Other costs include software maintenance, stationery, forms, postage, telephone, seminar, travel costs, court (litigation) costs... We did not bother taxpayers with the detailed specification of all these costs one by one. Instead of that, we opted for one "catch-all" question concerning other internal non-labour costs giving a few examples of such costs.

Since the distributions of the stratum were highly skewed, the median was chosen as the best measure of the average tax compliance costs.

3. Results

3.1. Total tax compliance costs per business and their regressivity

The term “total” denotes the sum of the all tax compliance costs of a small business. They can be further divided according to type of taxes as well as type of costs.

The median of total tax compliance cost by number of employees, taking into account also whether the business is registered for VAT or is exempt, is presented in the Table 2:

Table 2 Average tax compliance costs (TCC) (median) by number of employees and VAT registration (in Croatian kunas (HRK))

Number of employees	TCC (all businesses)	TCC (registered for VAT)	TCC (exempt from VAT)
0	8,200.00	12,750.00	2,600.00
1-2	17,642.55	20,015.96	10,450.00
3-5	22,239.26	25,944.26	3,642.00*
6 and more	48,000.00	48,000.00	-
Total	10,800.00	17,919.00	4,100.00

* Unreliable result, because of only 3 businesses in the stratum.

It is obvious that, as expected, tax compliance costs rise with the rise in the size of business as measured by number of employees. There is a statistically significant relationship between the number of employees and total tax compliance costs at the significance level of 0.01. The relationship is medium

²³ For instance Blumenthal's and Slemrod's questionnaire about compliance costs of U.S corporate income tax, 1992; Allers's questionnaire from 1990; Collard and Godwin, 1999; UK compliance costs of VAT research from 2001, HM Customs and Excise, BMRB.

²⁴ It was normal in the seventies to conclude that internal costs besides the time spent are negligible (Sandford, 1981).

strong and positive ($r = 0.203$ (Pearson's)) confirming that, as expected, as the number of employees rises, tax compliance costs rise also.

There is also a statistically significant relationship between being registered for VAT and total tax compliance costs. The relationship is strong and positive ($r = 0.442$) at the significance level of 0.01. This confirms that businesses exempt from VAT have lower total tax compliance costs, as logically expected.

The strong rise of compliance costs of all businesses in the second stratum (class) in comparison with the first stratum²⁶ can be (partially) explained by a lot of businesses being exempt from VAT in the first stratum. We have deliberately analysed the median compliance costs by excluding these entrepreneurs and it can be seen that even inside the subgroup of businesses that are registered for VAT these amounts also rise.

As expected from all previous research, total compliance costs proved to be regressive measured as costs per employee or as costs per head.²⁷ The regressivity is measured as median of compliance costs per employee/head of each business in the stratum and for all businesses together. The results are presented in Table 3.

Table 3 Tax compliance costs per employee and per head (median)

Number of employees*	TCC per employee (HRK)	Number of employed persons ("heads")	TCC per head (HRK)
1-2	12,894.47	1-2	10,000.00
3-5	6,026.63	3-5	4,772.59
6 and more	4,600.00	6 and more	2,693.81
Total	10,254.52	Total	7,704.17

* Stratum of zero (0) employees is, of course, excluded.

As known from the literature the regressive effect of compliance costs is especially emphasized at the lower end of the size scale (it is slightly milder at the upper end of the scale). This is proven even here, where only three strata are used and the last one wide open with the average number of employees even doubled. As already known, this regressive effect is the result of the fixed element inherent in compliance costs. It causes them to fall proportionally heavier on small firms, in our case the smallest of the small firms. The costs of firms with one and two employees are three times higher than those of firms with six and more employees.

The regressivity was also tested using tax compliance costs as percentage of turnover. Since stratification and weighting as well as the whole analysis were done by number of employees, this analysis was also performed inside the stated strata.²⁸

²⁵ In Croatia, there is a possibility for the immediate write-off for equipment. This amount would be inappropriate.

²⁶ As well as in the third one in comparison with the second one, but with a much lower intensity (number of firms exempt from VAT in the first stratum is 70 and in the second one only 19 (weighted)).

²⁷ We have followed the Allers' methodology of combining the calculation of tax compliance costs per employee with the tax compliance costs per head (Allers, 1994, p. 126-128). The term «heads», according to Allers, denotes the number of employees plus owner/manager or all employed persons (including owner (self employed)). In our calculations the employee strata do not completely match with the «heads» strata (+1) because business can have even two or more owners (in our case 14 businesses had two co-entrepreneurs (partners) and one had three).

²⁸ See also OECD (2001, p. 52) for the same methodology. Nevertheless, proof about of regressivity could be also obtained by turnover size strata.

Turnover	up to 85,000	85,001-500,000	500,000-1,000,000	>1,000,000
TCC as % of turnover	0.1496	0.0922	0.0905	0.0216

Table 4 Total compliance costs as a percentage of turnover by firm size

Number of employees	TCC (median) (HRK)	Median turnover (HRK)	TCC as percentage of turnover (median)*
0	8,200.00	56,000.00	0.13
1-2	17,642.55	171,620.53	0.10
3-5	22,239.26	369,982.84	0.08
6 and more	48,000.00	1,560,000.00	0.04
Total	10,800.00	85,000.00	0.11

*Calculated again as median of TCC per turnover of each business in the stratum.

As it can be seen, regressivity is proved again, but it is not as profound at the beginning of the scale as before.

3.2. The structure of total tax compliance costs by type of costs

Internal labour costs are the most important part of tax compliance costs, especially concerning small business. They are usually presented in hours. In calculating the average we wanted to get really representative values for businesses handling taxes and not just pure statistics, so we have taken into account only businesses where relevant persons exist / handle taxes.²⁹

Table 5 Time spent on tax compliance by different persons (hours)

Number of employees	% of businesses* where owner deals with taxes	Average time spent by the owner (h)	% of businesses having unpaid help with taxes	Average time spend by unpaid helper(s) (h)	% of businesses having internal accountant	Average time spent by internal accountant (h)	% or businesses having internal person dealing with taxes	Average total time spent (h)
0	97	139	40	93	7	290	99	240
1-2	92	329	37	224	10	1280	96	565
3-5	78	376	31	307	22	1552	85	875
≥6	88	427	32	331	25	994	97	795
Total	94	218	37	145	10	865	97	395

* All businesses in relevant size stratum (class) = 100.

First, it is clear that the hours of persons involved rise as the size of the business rises, which proves the validity of our research. The only exception from the trend is the internal accountant's time for the last size class. The result can be partly explained by the fact that the smallest businesses have an employee, who handles accounting and tax work and is not especially trained for or even specialized in accounting and taxes. Businesses with more than six employees have more specialized persons as well as the "economies of scale" effect.

It can be seen that the owner is almost always involved in tax matters³⁰ and this is especially true of a sole proprietor. This "involvement" may range from doing all/part the tax work by himself or simply cooperating with others. It is obvious that concerning taxes the owner strongly cooperates with the other internal (as well as external persons). This cooperation is, as expected, especially pronounced when his or her spouse (or some other family member) runs the books (an unpaid helper). There is statistically

²⁹ So, for instance when talking about the average time spent by an unpaid helper, only businesses that have unpaid helpers are taken into account. Otherwise we would end with a lot of zeroes with no meaningful results. Nevertheless, the full information about the meaning of the time costs of different subjects in the total compliance costs of the stratum as a whole can be obtained from the Table 5.

significant relationship between the time spent by the owner and the time spent by an unpaid helper (at the significance level of 0.01). The relationship is strong and positive ($r = 0.308$).

We knew that a lot of small businesses use unpaid help, but did not expect the percentage to be so high. As expected, this percentage falls as the size rises, but not as steeply as we predicted (it even stagnates in the end).

On the other hand, the percentage of businesses engaging an employee to handle tax work rises as the size rises, as expected.

It will be suitable here for comparison reasons also to include an analysis of the percentage of businesses using external help in tax matters. The percentages in increasing size order are: 42%, 56%, 77% and 53% with the average being 46%. It was expected that smaller businesses would rely more heavily on external help and that this pattern would be the opposite to that of the own employee (accountant) who handles taxes. There are two reasons why this is lower than expected in the first two size classes (stratums). The first one is the unpaid help, which is especially high for businesses without employees or with only one or two employees. The second one is the fact that VAT exempt businesses are predominantly in these size classes and these businesses tend to use external accounting offices less. There is a statistically significant relationship between being registered for VAT and using an external accounting office (at the significance level of 0.01). The relationship is medium strong and positive ($r = 0.228$), meaning that firms that are registered for VAT more often use an external accounting office than these that are exempt from VAT (not registered for VAT).

A full picture of tax compliance costs structure can be seen from Table 6.

Table 6 The structure of tax compliance costs by type

Number of employees	Owner (%)	Unpaid helper (%)	Internal accountant (%)	Other (non-labour) internal costs (%)	Accounting office (%)	Total (%)
0	61.54	8.12	1.62	19.59	9.13	100.00
1-2	66.20	6.08	9.74	10.51	7.48	100.00
3-5	47.51	4.83	27.50	9.84	10.31	100.00
≥6	48.55	6.37	17.70	15.55	11.88	100.00
Total	60.52	6.94	8.34	15.28	8.89	100.00

As expected, labour costs comprise the biggest part of the costs. Their costs structure reveals more or less the same picture as stated in the previous table, although it is not so clear. The percentage of other internal costs (non-labour internal costs) shows a U-shaped pattern being the highest for first and last size class³¹.

The greatest puzzle is the share of accounting office costs, which is not completely in accordance with the share of businesses that engage an external accounting office. The reasons can be found in the relatively high external costs in comparison with the other costs in the first stratum, as well as the fees being often relatively the same or rising very slowly with the rise of enterprise size, which makes them profoundly regressive, especially at the beginning of the size scale. Furthermore, the share rises for the

³⁰ When taking into account the compliance costs structure (by type of costs) of different types of taxes the share of owner's time costs is the greatest for personal income tax (around 10% higher than for VAT or wage taxes and social security contributions).

³¹ These sorts of costs is known as hardest to measure, as already explained, so these results can be partly caused by the stated problems.

last stratum. Nevertheless, such a peculiar structure might be partly due to the imprecise assessment of the part of fees that relates to taxes.

The predominant role of owner's time deserves further attention. It is generally in accordance with the results of previous research, in which labour costs (also for smaller entrepreneurs) were presented in such detail (for instance Allers 1994; p.131; Sandford, Godwin, Hardwick, 1989, p. 116; Godwin, 1995, p. 89; Evans et. al, 1997, p. 36-37). This is also influenced by the valuation method. As already mentioned, own valuations of time (per hour) were used and that influenced not only the owner's share but also that one of the unpaid helper. The average hourly value of 81.5 HRK³² is more than double than the hourly cost of labour (gross wage + employer's social security contributions) calculated on the basis of the average wage (36 HRK).³³ Taking into account that the average wage is maybe too low to be the basis of an alternative calculation, the alternative calculation is done by halving the value of the owner's time (and the unpaid helper's time). The aggregate results at the level of the state are presented at the end of the paper. Concerning the structure, the influence is profound. The structure of total tax compliance costs changes to: 30.26% for owner, 3.47% for unpaid help, 16.98% for internal accountant, 31.12% for other internal costs (non-labour) and 18.11% for accounting office.

3.3. Aggregate tax compliance costs in Croatia, composition by type of tax and share in tax revenues

The aggregate tax compliance costs of business units that pay personal income tax (also called "social"³⁴ or "gross" tax compliance costs) in Croatia can be calculated using the classical gross-up method. Costs are calculated per size class and added together. The results are shown in Table 7.

Table 7 Aggregate yearly compliance costs of small business in Croatia 2001/2002 and their structure by type of tax (in millions of HRK and in %)

Number of employees	TCC in Croatia for all taxes (mil. HRK)	TCC of personal income tax* in Croatia (%)	TCC of VAT in Croatia (%)	TCC of wage tax and SSC**in Croatia (%)	TCC of other taxes in Croatia (%)
0	503.68	40.44	29.94	8.87	20.75
1-2	550.84	27.00	26.88	31.81	14.31
3-5	176.25	21.77	43.64	27.24	7.35
≥6	138.24	23.35	38.49	26.94	11.22
Total	1,369.00	31.39 (429.73)***	31.02 (424.66)***	21.86 (299.26)***	15.73 (215.34)***

* Personal income tax of relevant small businesses.

** Personal income tax, local surtax on wages and social security contributions.

***Absolute numbers in millions.

More than three quarters of tax compliance costs of businesses that pay personal income tax is borne by businesses with 0-2 employees.

³² It is interesting that this amount is almost constant over the size classes, opposite to the expectation that the smallest entrepreneurs (sole proprietors) could have lower values.

³³ In Croatia, there is no detailed wage statistics for different occupations like for instance NES in Great Britain, which would enable an alternative calculation of the value of an hour of work. There are data about the wages of different education levels, but they are published with two years time lag and relate only to net wages. The average wage statistics is the only current and reliable measure.

³⁴ As pointed out in Evans et al., 1997 and Tran-Nam et al., 2000; but without including managerial benefits to taxpayers, which were impossible to measure.

VAT is not in the first place in the cost structure by tax type; better to say it shares the “first place” with the personal income tax of entrepreneurs. The reason for this is the 36% of the population that is exempt from VAT. The costs structure of only VAT registered businesses has a different picture. As expected, VAT is now in first place (36.91%), followed by personal income tax (28.59%) and wage tax and social security contributions (22.03%). In the third class, where there are almost no VAT exempt traders, the share of VAT rises significantly.

The high percentage of small business personal income tax is understandable, especially for the smallest entrepreneurs (with a lot of VAT exempt entrepreneurs and with almost no employees).³⁵

“Only” 22% for the compliance costs of wage tax and social security contributions connected with wages is not only caused by the fact that more than half of businesses have zero employees,³⁶ and with the small number of employees in general. The relative low and stable percentage for higher size classes as well as almost the same percentage for business units that pay corporate income tax estimated in other research³⁷ confirms the stable share range (20-30 percent) of these costs.

Total aggregate tax compliance costs of business units that pay personal income tax are around 0.81% of GDP³⁸, which is relatively high taking into consideration that there are also 71,780 business units that pay corporate income tax and that individual level taxes as well as customs and excise duties are not included.

The average yearly revenue³⁹ of personal income tax of the relevant population is 437.02 millions HRK – just a little bit above the tax compliance costs figure (share of tax compliance cost of 98%!). Even the inclusion of tax deductibility benefits⁴⁰ and cash-flow benefits (better to say costs)⁴¹ into “social” or “gross” compliance costs does not significantly alter this terrifying result. “Net” or “taxpayer” compliance costs are 413.50, which amounts to around 96.22%. As all the stated benefits/costs to the taxpayers offset costs/benefits to the tax authorities, the figure of the social costs of compliance is more relevant to be compared with the GDP and tax revenues.

The fact that the “social” tax compliance costs of personal income tax of business units are as high as the revenues from that tax is not completely surprising. One of the reasons may be that the taxpayers exaggerated estimating the number of hours, but, on the other hand, it must be borne in mind that tax planning was included as the inherent part of tax compliance costs and it is especially important for

³⁵ The share of personal income tax of a small business that is exempt from VAT is 46.14%, but as much as 55.32% for the sole proprietors.

³⁶ The existence of some compliance costs for this type of tax in this size class is caused by the fact that 0 employees is the result of the rounding down of 0.1-0.4 employees.

³⁷ The average for all companies is 25.34% and for the companies with more than 250 employees also «only» 22% (VAT is here responsible for the bulk of compliance costs).

³⁸ An alternative calculation, where the value of the owner's hour is halved (from the reasons already explained) with the resulting decrease of the value of unpaid help yields total aggregate tax compliance costs of 891 mil. HRK - 0.53% of GDP, which is still quite high and can be regarded as the lower boundary of tax compliance costs. Additional alternative calculations used mean on the original data (2,279.79 mil HRK) and data with halved hourly values for owner (1,544.90 mil. HRK) and can be regarded as upper boundaries, but these data are overrepresented, because of the already mentioned skewness of distribution.

³⁹ 2001 revenues plus 2002 revenues divided by 2, since the research encompasses the last 12 months (last half of the 2001 and first half of the 2002).

⁴⁰ Most of the costs (owner's time and unpaid help) cannot be deducted, which is a well known disadvantage of small business concerning compliance costs offsetting. Since the «average» business income (according to the Tax Administration data) is in the lowest tax bracket (15%), the tax deductions for all taxes can be roughly assessed at about 66.75 mil of HRK (unfortunately, the detailed breakdown of taxpayers according to their size and relevant marginal rates (or loss) was impossible to obtain). The amount that goes to the personal income tax is around 19.48 mil. HRK (calculated according to cost structure of personal income tax compliance costs; besides general structure, there are also structures for different types of taxes).

⁴¹ Since most businesses have underpaid their personal income tax during the year (in monthly installments) the net cash flow cost is 3.25 mil HRK (calculated at 6.08% of short term bank interest rate for deposits).

personal income tax. Small business in Croatia is known to be very astute with respect to this aspect of taxation. Secondly, maybe an accounting/taxation overlap was present in some of the taxpayers, because all the income statement rules, including the relevant books that should be run, are an inherent part of personal income tax act only. In order to avoid this, tax compliance activities were itemized. Furthermore, the possibility of this overlap was tested also, asking taxpayers how they would behave, if there were no taxes. 55% of them answered that they would keep all the same books of accounts as they do at present (of course except tax evidence and statements), 31% said they would continue to keep some record, but simplified and only 9% said that they would not keep books of accounts at all. So, there is no profound taxation/accounting overlap and there is no relationship between these results and the size of the business. Thirdly, there is a possibility, as already stated, that taxpayers exaggerated the value of their hour.⁴² Finally, it is well known from the tax compliance literature that this ratio can be misleading and that the other side of the picture should be taken into account – the amount of revenues. Here, this amount is underrepresented, better to say underreported. This is well known fact in Croatia. Unofficially, taxpayers as well their accounting offices admit that the income statement should be fine tuned in a way to show some positive (in order to avoid an audit) but small income, and than “nobody is going to touch you”.⁴³ The biggest part of the shadow economy in Croatia is in the sphere of small business, not only concerning personal income tax, but also wage taxes and social security contributions (Madžarević, 2002, p. 124-131). This is the strong argument in favour of a lump-sum tax (estimated tax) for businesses that pay personal income tax. This possibility exists in the Croatian Income Tax Act, but has never been put into practice.⁴⁴

Everything said above would imply the existence of a high psychological cost of personal income tax compliance. But, this is not the case. In answering the question “How did you feel after you had submitted your tax return?” as many as 43% of respondents claimed that they had been indifferent and only 16% of them admitted that had felt disturbed, because of a lot of pressure. 26% of them answered “Relieved, because I had completed this demanding and complex task” and 15% answered “Content, because I was able to do it without any difficulties”.

The share of VAT social or gross compliance costs in the VAT revenues from businesses that pay personal income tax is around 24.33%.⁴⁵ This is strong evidence supporting the well known fact about VAT burdening small business in particular and advocating the raising of the exemption threshold. The qualitative analysis also suggested this (Dimitrić, 2003). Although around half of the respondents considered the current threshold too low, there was, of course a statistically significant relationship between the size of the trader (measured by turnover) and the answer to the question. Smaller entrepreneurs tend to consider the registration threshold too low (Gamma = 0.267, $p < 0.05$).

The inclusion of tax deductibility and cash-flow benefit does not alter the situation very much. Tax deductibility amounts to 22.93 million HRK and the cash-flow is impossible to measure. Although tax payments exceed tax refund entitlements, it is possible that cash flow costs exceeds cash flow benefits.

⁴² Alternative calculation based on the halved hourly value of owner still yields high percentage of 65% in relevant tax revenues.

⁴³ Of course, it should not be forgotten, that small entrepreneurs who are really in loss additionally contribute to the small amount of revenues from that tax.

⁴⁴ It is interesting to point out, that the results of the quantitative research of taxpayer compliance costs (what they claim to be more complicated and time spending, what would they suggest in order to simplify tax system and ease tax compliance...) have brought out the same conclusion (Dimitrić, 2003).

⁴⁵ Even with the alternative calculation (halved hourly value for owner) the share is still significant – 16%.

Most of the entrepreneurs, instead of claiming VAT refund, prolong this tax-free loan as the advance payment of future tax VAT liabilities. The reason for this is their fear of being audited when claiming a tax refund. Obviously the benefit of not being audited outweighs the cash-flow cost. That again, confirms our statements concerning the personal income tax of small business.

Since there is no evidence about wage tax and social security contributions payable on and from wages separately for businesses that pay personal income tax, a rough assessment was made according to the number of employees in the analysed sector⁴⁶. This share is around 5.8% (and 5.5% after inclusion of tax deductibility benefits)⁴⁷. Again it is not the result of compliance costs being small⁴⁸, but of the receipts of wage taxes and especially social security contributions being extremely high.

4. Conclusion

The regressive effect of tax compliance costs is proven in the case of Croatian small business (businesses that pay personal income tax), even with respect to micro businesses. In the cost structure the time cost, predominantly the owner's time, is predominant. Concerning the type of tax, personal income tax and VAT are, in aggregate, of the almost same importance.

The percentage of TCC of small business in GDP is around 0.8%, which is relatively high but not extremely so. The percentage of personal income tax compliance costs in the relevant tax revenues is extremely high (almost 100% or 65% under the alternative time valuation) which calls for substitution of self-assessment by lump sum tax (estimated tax). The percentage of VAT compliance costs is also considerable (25% or 16%) calling for a higher exemption threshold or higher three-month reporting threshold at least. The psychological costs seem to be low.

The research turned out to be very arduous, long-lasting and complicated by institutional obstacles. The relevant business population had no experience with studies of that type and was reluctant to give some details, which contributed to the complexity of the research.

⁴⁶ Since it is very common for all the employees in small business to be reported as receiving only the minimum wage, their share in income taxes on wages and social security contributions is probably even smaller, so the ultimate percentage is probably underestimated.

⁴⁷ There is no cash-flow benefit here, since as soon as wages are paid (monthly), personal income tax on wages and social security contributions are paid too. Tax deductibility benefit is only 15.30 mil.

⁴⁸ The results of qualitative analysis suggested that the taxpayers complained mostly concerning this field of tax compliance.

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