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A single rate of personal income tax: the impact on the distribution of the tax burden

Recent research by the Institute of Public Finance shows that the progressivity of personal income tax (PIT) in Croatia is high by comparison with that in other countries and that during the period under review it actually grew.[1] Various elements of PIT system affect the level of progressivity: rate structure, personal and other allowances and tax credits. From 1997 to 2004, on average 91% of the progressivity is attributable to the personal allowance, and 13% to the rate structure. The impact of other allowances and tax credits amounts to, on average, minus 4%, in which the negative sign means that these reliefs actually reduced the potential progressivity.

Since the progressive effect is achieved primarily with the personal allowance, the inevitable conclusion was that an introduction of a single rate income tax would greatly retain the existing progressivity. This has been confirmed by various simulations of the tax burden. Here we shall show the results of one such simulation and compare the distribution of the tax burden of the current income tax system with that in a system employing only one rate.

One rate in the income tax system

What would have happened with the distribution of the tax burden and with progressivity if in 2004 instead of the actual system a version with just a single tax rate had been in force? The simulated system has the following features, underpinned by the principles of the original Income Tax Law of 1994:

- The income of taxpayer is equal to the sum of all kinds of income.
- Receipts from dividends and profit shares are not taxed, and for the sake of comparability, in the analysis this income is excluded from the basis of the real and of the simulated system.
- The tax base is equivalent to income reduced by the basic personal allowance and the additional allowance for dependents, the amounts of which are the same as the real allowances in 2004.
- The system is revenue-neutral, which means that the same amount of tax revenue is collected with it as

[1] For the results of this investigation see IPF Newsletter no. 23, 2006

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Table 1. Comparison of the real and the simulated annual income tax burden in 2004.

Income bracket (in 000 kuna)	Percentage of the population of taxpayers	Real tax (kuna per taxpayer)	Real tax a.t.r. (%)	Simulated tax (kuna per tax-payer)	Simulated tax a.t.r. (%)	Difference (kuna per taxpayer)	Difference (in p.p.)
1.	2.	3.	4.	5.	6.	7=5-3.	8=6-4.
0-10	15.1	95	1.9	0	0.0	-95	-1.9
10-20	20.6	100	0.7	16	0.1	-84	-0.6
20-30	20.4	371	1.5	445	1.8	74	0.3
30-40	12.9	1,153	3.3	1,549	4.5	396	1.2
40-50	8.5	2,410	5.4	3,291	7.4	881	2.0
50-60	6.8	3,719	6.8	5,053	9.2	1,334	2.4
60-70	5.4	5,412	8.4	6,821	10.5	1,410	2.1
70-80	3.3	7,304	9.8	8,568	11.5	1,264	1.7
80-90	2.1	9,247	10.9	10,247	12.1	1,000	1.2
90-100	1.2	11,637	12.3	12,211	12.9	574	0.6
100-120	1.4	15,659	14.4	15,110	13.9	-550	-0.5
120-150	1.0	23,097	17.4	19,711	14.8	-3,386	-2.6
150-200	0.7	34,960	20.5	26,744	15.7	-8,216	-4.8
200 and up	0.7	91,156	27.4	57,182	17.2	-33,974	-10.2
Total:	100.0	2,930	8.1	2,930	8.1	0	0.0

a.t.r. – average tax rate; p.p. – percentage points.

by the real system in 2004. The necessary single rate comes to 18.8%, and it is calculated as the ratio of the tax really collected and the simulated tax basis.

Table 1 divides taxpayers into brackets according to their annual pre-tax incomes (column 1). Column 4 shows the average tax rate for the real and column 6 for the simulated system. The average tax rate grows with rise in incomes in the simulated system, which means that it is progressive. However, certain changes occur with the distribution of the tax burden. The average tax rate has fallen for income tax payers with incomes lower than 20,000 kuna, and also for those with incomes in excess of 100,000 kuna. The greatest relative reduction of tax liability, of about 10 percentage points, would be gained by those who earn the most, but who in the real system pay the most tax, who are taxpayers with incomes greater than 200,000 kuna. The greatest relative increase in the average tax burden, of 2.4 percentage points, would be experienced by income tax payers with incomes between 50,000 and 60,000 kuna. Looked at in absolute amounts, the greatest average annual increase in annual tax burden, of 1,410 kuna, would be felt by taxpayers from the income bracket from 60,000 to 70,000 kuna.[2]

We should point out that Table 1 provides only average values for given income brackets. Inside each one of these classes there are individuals, who are treated very differently in the current system, and in a system with a single rate the rise (fall) of the burden would for some be greater and for some be smaller than the average for the group.

Conclusion

The main objective of a tax policy is to collect enough revenue concomitant with an acceptable distribution of the tax burden, with a high degree of simplicity and transparency, while keeping down to the maximum the costs and the detrimental effects on economic efficiency. In order to meet these objectives, it is necessary to apply the optimum combination of elements that the tax system provides. Such elements are personal allowances and other reliefs and the rate structure.

Our investigation showed that personal income tax in Croatia is progressive, mostly as a result of the personal allowance effect. In other words, in order to achieve progressivity in the income tax system it would be enough to have just the personal allowance and a single rate of taxation. In the light of the debate concerning the introduction of a single rate, we wanted to verify this theo-

[2] The Kakwani index of progressivity for the real system comes to 0.337, and for the simulated system 0.303, which means that with the introduction of a single rate about 90% of the progressivity has been retained.

retical conclusion and explore how one version of such a system would have affected the progressivity of the system and the distribution of the tax burden across the income brackets in 2004. With the retention of the existing personal allowance, the abolition of all other reliefs and with a single rate of 19%, the same amount of revenue would be yielded and approximately 90% of the progressivity of the actual system would be retained.

Flat tax

In tax reform debates, we often hear of the *flat tax* concept. In economic literature it refers to a proportional tax, i.e., a tax in which the average tax rate (tax as a proportion of income) is the same for all levels of income. A progressive tax is one in which the average tax rate rises with a rise in income.

According to this definition, a single rate income tax that has personal allowances is not a *flat tax* because it is progressive. Let us look at the simple example given in the next table. The income of person A is 2,000 kuna; that of person B is 2,000 kuna. If both persons can claim a personal allowance of 1,000 kuna, and the single rate comes to 20%, person A will pay 200 kuna and person B 600 kuna of tax. Thus the average tax rate of person B is greater than that of person A, which is a proof of progressivity.

	Person A	Person B
Income	2.000	4.000
Allowance	1.000	1.000
Tax base	1.000	3.000
Tax	200	600
a.t.r.	10%	15%

The concept of *flat tax* is also used for the form of taxation proposed by the American economists Hall and Rabushka in 1996, intended to replace the current system of personal and corporate income tax. The tax base of this tax is total corporate revenue reduced by the costs of the acquisition of short-term and long-term assets. This tax obtained the name *flat tax* because the original intention was to tax the whole of taxable income with a single rate, which would make the system proportional.[3]

[3] For more on the Hall and Rabushka flat tax, see Financial Theory and Practice, 29 (2) 2005, 205-207.