

Personal Income Tax Reform and Revenue Potential in Transitional Economies: Bulgaria

SUMMARY

This paper utilizes the 1992 household budget survey of Bulgaria to show the poor revenue effects of the income tax structure prevailing in 1992 which did not take into account the underlying distribution of income. We also show that Bulgaria can benefit from a much simpler and lower income tax structure than the one which prevailed in 1992, providing counterfactual calculations of potential revenues of alternative tax structures. Two types of alternative tax structures are explored, each in two different variants: a flat income tax rate, and a progressive, but simpler three-bracket rate system, both with higher exemption, and

therefore protection for the poor. Our calculations show that each of these alternative systems would have been more efficient in terms of potential revenues, while increasing the protection to the poor through increasing exemption for poor households, i.e., a revenue-enhancing and redistributive tax reform.

In the event, the actual tax changes since 1992 have, however, moved Bulgaria away from the 1992 system and even further from the proposed simple income tax systems: the number of brackets and rates was increased significantly, while the exemption level for the poor remained unchanged.

This is almost certain to complicate administration and enforcement, and provide powerful additional incentives for personal income tax evasion in Bulgaria. Therefore, there is an urgent need to rethink the system of personal income tax in terms of its objectives and effects. Our analysis demonstrates that consideration of alternative tax structure must take into account the underlying distribution of income. The analysis is also potentially relevant to other transitional economies with income distribution and the structure of income tax rates similar to that of Bulgaria.

"Steeplly progressive rates have no place in a well-designed income tax in developing countries." Bird, 1992, p. 95

1. Introduction

All transitional economies embarked on fundamental reforms of their tax systems. These reforms are determined by country-specific combination of factors including the advice of external experts and international agencies (World Bank, 1988 and Harberger 1993), acute pressures from expenditure (Bogetic and Hillman, 1995) and revenue sides of the budget (Bogetic and Hillman, 1994), the increasing complexity of the administrative task (Bird, 1989a and Tanzi, 1992), and the internal political economy of public finance reforms (Bogetic and Hillman, 1995).

Political economy factors, however often clash with the advice of experts who often emphasize simplicity and transparency in the tax systems. As a result, although tax reforms start with good intentions and well-defined objectives of the reformers, the outcome is often different from what it was envisaged at the outset. For example, Shome and Escolano (1993), in their survey of tax policy in the Former Soviet Union (FSU) countries show that despite substantial effort on tax policy reform, the tax systems are often becoming more, not less complicated and transparent. In Bulgaria, the authorities initiated far-reaching tax reforms with the objective of creating a tax system consistent with a market economy (Chand and Lorie 1993); these include the replacement of the old turnover tax system by a modern, single-rate value added tax, and the reduction of the corporate tax rates. But in other areas, notably personal income taxation, the

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An earlier version of this Paper was presented at the Annual Conference of the European Public Choice Society, Israel, March 10-13, 1996.

tax reform has not resulted in a simpler tax structure which is more compatible with the more demanding administrative task and powerful incentives for evasion. The amendment to the 1992 Personal Income Tax Law enacted in March 1993 resulted in a substantial increase in tax rates and the number of tax brackets. Taking these added complexities in the personal income tax as given, in this paper we seek to analyze the following two questions, which should be of broader interest to fiscal authorities in Bulgaria, and other transitional economies. First, we want to explore the effects of the 1992 personal income tax rate structure on income tax revenue and post-tax income distribution. In effect, we are asking the question: how successful has the present tax structure been in terms of the revenue and distributional objectives of this tax? Second, we are interested in examining if an alternative, simpler tax structure with lower tax rates could achieve at least equal revenue and distributional objectives as the present system.

To answer the second, counterfactual question, which is of particular interest for tax policy we examined the effects of simplifying the existing personal income tax system in the three interrelated areas: (i) reducing the number of tax brackets, (ii) lowering tax rates, and (iii) raising the income threshold at which a positive tax payment must be made. In each case the objective is to obtain better or at least revenues equal to those that would be obtained under the existing system. Furthermore, the distributional consequences of the proposed tax reform are examined, taking into account the existing distribution of income as reflected in the 1992 household budget survey. The counterfactual analysis rests on the assertions that lower tax rates in a more simple system will increase compliance and revenue, and a simple tax system is less of a constraint on economic growth so the tax base is widened, both through fewer evasion and economic growth, leading to a greater revenue.

Even though our tax reform recommendations are based on the peculiarities of Bulgaria's tax system, the type of analysis and principles enunciated are potentially of wider interest to other transitional economies for two reasons. First, recent analyses of income inequality and poverty trends in transitional economies show striking similarities in the pattern of income distribution in these economies [e.g., Milanovic (1992, 1995) and Hassan and Peters (1996)]. Second, a comparison of the income tax systems in other transitional economies - as shown in section 5 - reveals that these systems suffer from similar deficiencies as Bulgaria's system, notably, low exemption level, large number of tax brackets, and high rates. Thus, the analysis is potentially capable of providing useful direction for improving the design of personal income tax not only for

Bulgaria, but also for other Eastern European countries for which tax reform may become advisable or inevitable in the years to come.

The remainder of the paper comprises five sections. Section 2 reviews the 1992 personal income tax structure and actual and potential revenue performance, utilizing the 1992 income distribution data. In section 3 we calculate the effective rate of income tax and we derive the associated tax gap as the ratio between potential and actual revenues for each income decile. In section 4, we present and discuss our counterfactual analysis of alternative tax structures with equal or better revenue raising potential and re-distributional impact. Section 5 compares Bulgaria's income tax system with other economies, notably transitional economies. Finally, section 6 contains concluding remarks and some thoughts on broader implications of this analysis for the personal income tax reform in other Eastern European countries.

2. Income tax structure and potential tax revenue

Over the past four years, the level and structure of tax revenues in Bulgaria has changed significantly. Table 1 illustrates the changing pattern of tax revenue in which two trends stand out: the decline in the overall revenue to GDP ratio, despite the offsetting decline in GDP. Another important fact is the increasing relative importance of the personal income tax, particularly when compared with the collapse of the corporate income tax revenues associated with the decline of the profits tax base. During 1991-94 period, total tax revenue as a percentage of GDP fell from 38 in 1991 to 34 percent in 1994. Profits tax, once an important source of revenue, have become insignificant, with the share in GDP falling from 17.3 percent in 1991 to 7.2 percent in 1994. By 1992, personal income tax revenues became a more important revenue instrument, yielding 5 percent of GDP. Notably however, its yield declined in 1994 despite the growth of the economy; this implies deteriorating collection/compliance of this tax.

Though the personal income tax has increased in relative importance as a source of revenue, its contribution to GDP is still lagging behind market economies and several Eastern European countries. For instance, in most OECD countries, income taxes, excluding social security contributions, amount to between 10 percent and 15 percent of GDP (McLure 1990). Also, in Romania, a country in a similar stage in the transition process, the share of personal income tax revenue in GDP was 8 percent in 1992 (Shome, Haindl and Schenone, 1993). This is a *prima facie* indication that the revenue potential of the personal income tax in Bulgaria is yet to be fully exploited.

Table 1: The changing pattern of tax revenue, 1991-1994 (tax revenue as % of GDP).

Tax	1991	1992	1993	1994
Income tax	3.8	5.4	4.9	4.3
Profits tax	17.3	8.3	5.3	7.2
Social security contributions	7.8	9.1	9.9	8.7
Excises and customs	4.8	4.6	4.3	3.8
Turnover/ VAT	3.8	3.5	7.1	10.4
Total	37.5	30.9	31.5	34.4

Source: Hassan and Bogetic (1996); World Bank estimates, for 1994.

However, before discussing the revenue potential, it is necessary to outline the actual tax structure and the associated actual revenue performance. The 1992 personal income tax exemplifies a steeply graduated tax-rate schedule (see Table 2). There are seven tax brackets including the lowest tax-free bracket. The exemption level is low comprising individuals earning up to 9,000 Leva, or about 50 percent of average household per capita income as

reported in the 1992 household budget survey¹. There is a progressive scale, with marginal tax rates ranging from 20 percent to a maximum of 40 percent at annual income over 240,000 Leva. What is the potential revenue that this income tax structure could generate? To calculate the potential revenue, it is important to know not only the aggregate tax base - individual incomes - but also its distribution.

Table 2: The 1992 personal income tax schedule

Annual income (Leva)	Annual tax schedule	Ratio of tax bracket to average income ^a
0 - 9,000	tax free	-
9,000.01 - 12,000	20 % on excess over 9,000	0.5
12000.01 - 36,000	600 + 24 % on excess over 12,000	0.7
36,000.01 - 72,000	6,360 + 28 % on excess over 36,000	2.1
72,000.01 - 120,000	16,440 + 32 % on excess over 72,000	4.3
120,000.01 - 240,000	31,800 + 36 % on excess over 120,000	7.1
over 240,000	75,000 + 40 % on excess over 240,000	14.3

Source: Tax Notes International, Vol. 6, No. 19, 1993, p. 1140.

^a Authors' estimates.

Specifically, we must know which share of the population is included in each one of the personal income tax brackets. This is also important for our analysis to establish a "benchmark case" with which we can compare the alternative tax structures generating equal or similar revenue and distributional outcomes.

Bulgaria's income distribution for 1992 is given in Table 3.2. The data come from the 1992 Individual Budgets of Households Survey compiled by the National Statistical Institute (NSI) of Bulgaria. The

sample covers about 2202 households. It was constructed as a two-tier random sample based on a sample frame developed from the 1985 Population Census. The data allow a preliminary examination of the question we are interested in: how well the tax brackets and rates capture the revenue potential of their respective income groups, and how well they serve any distributional objectives implicit in the existing tax structure? To this end, we briefly discuss the relationship between the distribution of income and the statutory tax brackets in the 1992 income tax structure.

¹ In terms of 1992 annual minimum wage of 10,200 Leva, the exemption level amounts to 88 percent of the annual wage.

² A more detailed study of the country's income distribution, including details of the survey and a discussion of its representativeness, is given by Hassan and Peters (1996).

In 1992, the poorest 20 percent of the population received only 10.4 percent of the household per capita income. The average income in this category is 8,151 Leva, or less than half the average household per capita income (16,809 Leva). These levels of income are so low (the minimum annual wage was 10,200 Leva in 1992, or approximately US\$ 443 at the 1992 average exchange rate of 23 leva per U.S. dollar) that it is hard to argue, on either revenue or equity grounds, that a broadly based income taxation should include this income group in the tax base. Even if it were practically possible to include this group one would have to impose very high average rates to get any worthwhile revenues in view of its very small share of the total income.

The first positive income tax bracket income is applied to annual incomes between 9,000 and 12,000 leva at the rate of 20 percent on incomes in excess of 9,000 leva. This bracket covers three quarters of the second income decile, all of the third decile, and 22 percent of the fourth decile. That is, this bracket

covers approximately 20 percent of the total number of potential tax payers. But the average income in these three income decile as a share of the average household per capita income is only 56, 65, and 74 percent, respectively. These levels of income are relatively low and potential revenues from personal income tax as a share of total personal income are therefore small, amounting to 1.2 percent for second income decile, 3.5 percent for the third decile (see Table 3). This means that the first positive tax bracket is rather narrow in relation to the income group it covers.

The second positive income tax bracket of 24 percent tax bracket applies to incomes between 12,001 leva (US\$ 525) and 36,000 leva (US\$ 1,545). It applies to 78 percent of the fourth income decile, all of the fifth through ninth deciles, and 65 percent of the highest income group. In terms of number of households, this tax bracket has the broadest base, covering nearly two-thirds of the total number of households.

Table 3: Distribution of income and potential income tax revenue by income class, 1992

Income decile	Income interval (Leva)	Average income (Leva)	Income share (%)	Average potential revenue (as % of income)
1	3324 - 8466	6941	4.5	0.0
2	8498 - 10133	9361	5.9	1.16
3	10147 - 11606	10900	6.7	3.46
4	11609 - 13126	12387	7.6	5.59
5	13137 - 14729	13928	8.4	7.61
6	14739 - 16669	15643	9.4	9.41
7	16677 - 19050	17778	10.5	11.16
8	19060 - 21992	20380	12.1	12.79
9	22001 - 26854	24121	14.4	14.52
10	26885 - 156006	36653	20.7	17.68
Average		16809		8.30

Source: Authors' estimates using 1992 Individual Budgets of Households Survey National Statistical Institute, Sofia.

Potential revenue as a share of total personal income is in the range of 4.7 to 16.5 percent, depending on the number of households subject to tax in each of the income decile in question.

The next three tax brackets cover a small part of the population. The 28 percent rate applies to only 73 households in the survey or one third of the top income decile (nearly 4 percent of the population, extrapolating the result to the whole population). Also, tax rates of 32 and 36 percent cover only three households in the survey (or about 0.14 percent of the population). In terms of incomes, these brackets cover annual incomes between 72,000 leva (US\$ 3,090) and 240,000 leva (US\$ 10,300).

Furthermore, much of the highest income decile in Bulgaria falls within the intermediate 24, 28, 32 and

36 tax brackets. But because there are few individuals at this income level, these brackets are extremely narrow relative to the tax base which they are designed to tap.

Table 3 shows that the highest income decile of the population - between 26,885 (US\$1,153) and 156,006 leva (US\$ 6,695) has the capacity to generate a potential revenue of approximately 17.7 percent of their total income. The higher tax rates (32 percent, 36 percent and 40 percent) covering this income group, however, lack a broad base as the number of people with this level of income as reported in the survey is extremely small: the three wealthiest households. Perhaps even more striking is the fact that the maximum 40 percent. tax rate applied to incomes of over 240,000 leva exceeds the maximum

income reported in the 1992 household budget survey indicating that this tax bracket is applied to a nonexistent base!³ According to the survey, the maximum annual income earned of 156,006 Leva is recorded by one income earner (or .05 percent of the population), falling in the 36 percent rate with the potential tax revenue of 44,762 Leva. Moreover it seems likely that tax evasion at this income level is significant, due to high benefits of evasion in terms of marginal rates and low cost of compliance due to low probability of detection and low penalties. Thus the top rate of the 1992 tax schedule is irrelevant since it does not provide an effective tax base, given the extent of tax evasion. It could therefore be reduced to zero without having any revenue effect. Also, as noted earlier there is a negligible fraction of income earners in the other higher income brackets (with 32 percent and 36 percent marginal rates).

The application of the 1992 personal income tax schedule to income recorded in the 1992 survey yields potential revenue amounting to Leva 4,072,648 with an average income tax payment of Leva 1850 per capita, amounting to potential average income tax rate of 8.3 percent (last column of Table 3). This amount is substantially higher than the actual income tax payment of Leva 1.5 million, giving an average payment of only Leva 681, or an effective average income tax rate of 4.06 percent.⁴ Apparently the structure of brackets and tax rates show a gross mismatch with the underlying income distribution which they are designed to "capture". As a result, actual revenue is considerably lower than potential, given the tax structure.

In the next section, we combine the analysis of potential tax revenue with actual revenue to derive tax gaps at each income level.

3. Effective income tax rates and tax gap

The effective rate of income tax, the ratio of actual income tax paid is calculated for each income class (see Table 4). Depending on whether this ratio rises, falls or remains constant with increasing income, the effective tax rates determine whether the tax system is progressive, regressive or proportionate to income. As expected, Table 4 and Figure 1 show that low-income households have markedly lower effective tax rates than higher-income households. For the bottom income class - the lowest income decile - this ratio is as small as 1.4 percent. Then effective tax rates show a steady rise with income over a range of intermediate income levels (deciles two through six). For the higher income groups (7th to 10th decile) the percentage of per capita income paid in income tax rises sharply with income. For instance, the rich (top income decile) pay more than four times higher effective income tax rate than the poor (lowest income decile). These results suggest that the 1992 income tax system with marginal rates ranging from 20 percent to 40 percent is very progressive.

Combining the information from table 3 and table 4, the income tax gap - the ratio of potential income tax revenue to actual revenue - is calculated for each income decile (see last column of Table 4). On the average, potential income tax revenue is at least as twice as the amount actually collected. Furthermore, the tax gap rises with the level of income.⁵ For instance, the effective tax rate for the top income class is only 5.8 percent, while the potential rate is 17.7 percent, giving a tax gap of 304 percent (see Table 4 and Figure 1).⁶ It is worth noting that this group falls within four tax brackets (24, 28, 32, and 36 percent). This implies that only few income earners actually pay these high rates, partly because of the mismatch between the brackets and the distribution of income and partly because of tax evasion.⁷ As discussed below, the income level at which these rates

3 Table 2 also presents the tax bracket income level relative to mean per capita income as obtained from the 1992 household budget survey. This ratio shows several interesting characteristics of the 1992 tax brackets. The zero bracket (exemption level) is very narrow, extending from zero to less than half the mean per capita income. Positive income payments start at higher income level. However, it is only at incomes above 7 times mean per capita income that the marginal tax rate becomes substantial - at 36 percent rate. The narrowness of higher tax brackets is evident. The top tax rate of 40 percent requires an income of 14.3 times average income. The second highest rate of 36 percent is reached by taxpayers earning as much as 7.1 times the average and the income level at which the rate of 32 percent applies is 4.3 times average income. The 1992 household budget survey shows that of the 2202 households surveyed, only one household has a per capita income that is greater than seven times average income, and no one reported income greater than 14 times the average. These ratios are high compared to other Eastern European Countries. For instance, the income level where the maximum marginal rate is applied in Romania started with 3.44 times per capita GDP in 1992 (Shome, Haindl and Schenone, 1993). This explains the relatively low potential revenue rates of Table 3, in addition to low actual, effective tax rates reported in Table 4.

4 The following section analyzes in more detail effective income tax rates.

5 Effective tax rates are generally lower than statutory rate because with an additional income new opportunities for deductions, credits, and tax evasion arise.

6 Some may argue that since the effective rate of taxation is actually very low, we need not be concerned with the adverse effect of high statutory rate on growth, capital formation, and efficiency. Other may argue otherwise. We will not try to settle the debate. Instead, we will focus on evaluating the tax system on the basis of its revenue potential, equity, and simplicity.

7 The benefits of evasion rise in proportion to increases in marginal tax rates. For instance, at a marginal rate of 50 percent, a Leva saved in taxes is equivalent to two Leva of additional income. It is more lucrative to cheat on taxes - when the rates are high - than to earn more money.

applies is very high, providing powerful incentives for evasion.

Table 4: Effective income tax rates and tax gap by income class

Income decile	Average actual tax (as % of Income)	Tax gap = potential/actual (%)
First	1.35	0.00
Second	1.36	85.29
Third	1.74	198.85
Fourth	2.03	275.37
Fifth	2.53	300.79
Sixth	3.56	264.33
Seventh	4.32	258.33
Eighth	4.86	263.17
Ninth	5.62	258.36
Highest	5.82	303.78
Average	4.06	204.43

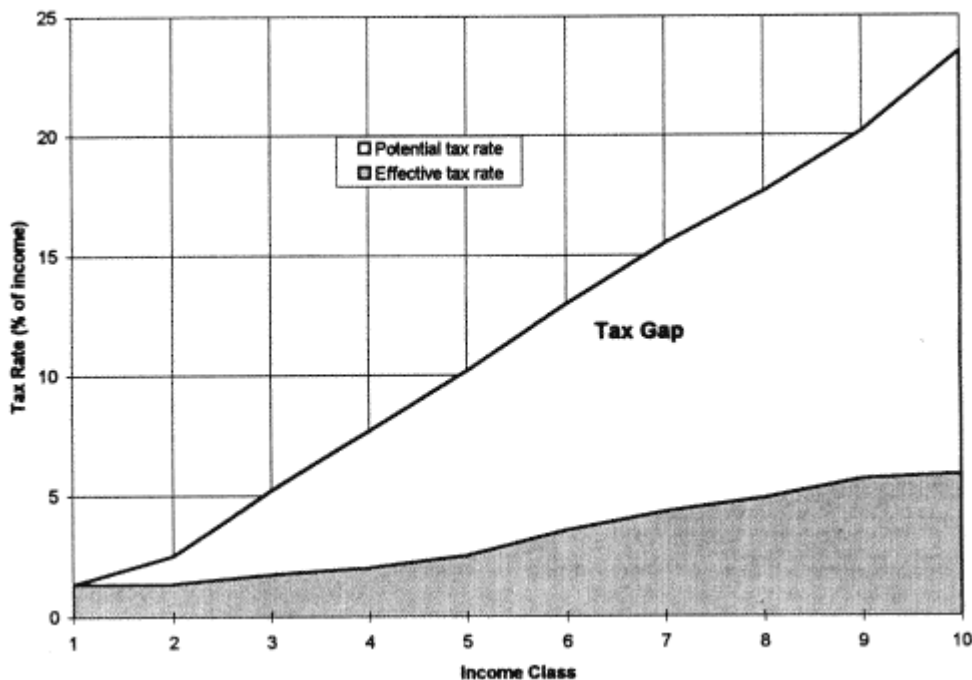
Source: Authors' estimates using 1992 Individual Budget of Households Survey.

Finally, Bulgaria's tax brackets and rates are rather high by international standards (see Sicut and Virmani, 1988). They present extensive statistical information on the tax rates and brackets of fifty developing countries. Table 6 of section 5 provides more recent data that show that the reduction of

income tax rates is probably the most dramatic manifestation of the tax reform wave that swept both developed and developing countries over the past two decades. This raises an interesting question about the intent of Bulgaria's personal income tax system with higher marginal rates on a very small base. In an attempt to answer that question, Sicut and Virmani (1988, p.13) ruled out economic explanations and argued that "the answer may be a mix of sociopolitical pressures and a wide hope that somebody will pay these high rates".

The importance of effective administration in the use of an income tax is indispensable. Bird (1989a, p. 315) urges that administrative considerations "be placed at the center rather than the periphery of tax reform efforts". However when consideration is given to strengthen tax administration, the conventional approach is the direct one of enquiring into how certain basic principles of public administration may be utilized to spruce up its performance (e.g., training of staff, introduction of new equipment, and so on). In contrast, little attention is given to the indirect approach of restructuring the personal income tax so that it is more amenable to compliance and enforcement. In other words, structural tax reform and improvements in tax administration should not be viewed in terms of alternative (in the sense emphasis should be given to one or the other)

Figure 1: The income tax gap by income class



but as complements: adjusting or modifying the income tax law so as to facilitate compliance and enforcement may well be the most expeditious way of improving tax administration.⁸ The following section explores the possible ways in which alternative income tax system with better revenue and re-distributional effects may be designed.

4. Towards simpler, lower rate structure

The previous analysis has shown that the income tax structure is associated with the high tax gap: the potential revenue is at least as twice as the amount actually collected. This reflects poor design of tax rates and tax brackets, and the incentives for tax evasion inherent to the present income tax system. Tax brackets are narrow and do not adequately tap the revenue potential of income groups they cover. Highest marginal tax rates have no positive revenue effects thus raising the question of their justification. The highest income tax rates of 36 and 40 percent raise virtually no revenue while providing significant incentives for and benefits from tax evasion. Incentives for tax evasion are also amplified by the rapidly growing number of individual taxpayers. Given the slowly improving tax administration, considerably larger number of taxpayers means that the probability of detection of non-compliance is reduced, making tax evasion less costly.

The main conclusion from the analysis of the income tax structure is that there is much scope for improvement. In particular, it should be possible to simplify the tax structure and reduce the incentives for tax evasion by lowering highest marginal rates, while generating equal or more revenues from a broad base.⁹ This would reduce the tax gap and improve the effectiveness of the income tax as a revenue raising tool, and an instrument of redistribution. It would also ease enforcement of a simpler tax structure. In this context, we constructed several counterfactuals to examine the scope for improving the income tax structure. In constructing the counterfactual, we started with three possible changes in the design of the income tax which are implied by the previous analysis: (i)

reduction in the number of tax brackets broadening their coverage; (ii) reduction in the highest marginal tax rates; and (iii) consideration

of alternative income threshold at which a positive tax payment must be made. These changes aim to tap the information on the underlying 1992 level and distribution of income to ensure equal or better revenue as well as protection of poor than under the existing system. In a nutshell, our counterfactual results show that the 1992 income tax system could be closely 'mimicked' in its revenue raising and re-distributional effects by a much simpler tax system.

4.1. A low, flat rate tax system with high exemption can raise more revenue and increase protection of the poor

Consider a flat rate system with higher exemption level which incorporates better potential revenue and equity effects. Given the 1992 income distribution, a very simple tax structure that exempts the poor (lowest 20 percent of the population) and levies a flat rate of 11 percent on the rest of the population would raise approximately the same revenue (see panel a of Table 5). The mean marginal rate calculated as the weighted average of the marginal rates across the entire income spectrum (including those with zero rates) is as little as 8.8 percent. Applied to the average income levels, this yields a potential average tax revenue per individual of 1,881 leva, compared to 1,850 leva under the present system, i.e., revenue-neutral reform.¹⁰ This means that a linear tax (or a flat rate tax) with a rate that is approximately half the lowest current statutory rate could generate approximately the same revenue as the current system. If those with zero rates are included (i.e., mean marginal rate) this rises to less than half the lowest bracket rate. The reason why the surprisingly low flat tax rate is found to be feasible from the revenue perspective lies in the fact that the underlying income distribution is not adequately taken into account in designing the 1992 tax rates and tax brackets. Furthermore, the proposed tax system raises the exemption level significantly from the current 13 percent of the population to 20 percent, thus favoring a much broader spectrum of the poor households. An alternative to this low flat rate would be a somewhat higher uniform rate of 20 percent along with the same, higher exemption for the poor. This flat rate

⁸ Morrissey (1995) concluded that rationalizing the tax structure (which reduces the incentives to evade) and improving collection efficiency - by enhancing administrative capacity and increasing the punishment if caught-do increase actual tax yield. On the other hand, Hall and Rabushka (1985) stressed the importance of simplifying the tax system and argued that, "It is a lot cheaper to increase compliance with the tax code by simplifying the tax system than by hiring thousands of additional agents to enforce a very complicated system", p. 6.

⁹ Lower tax rates in a more simple system increases compliance and revenue, and a simple tax system is less of a constraint to economic growth so that the tax base is widened, both through less evasion and growth, leading to greater revenue.

¹⁰ Tanzi (1994) believed that truly revenue-neutral tax reforms exist only in theory. He argued that "Even when a tax reform does not affect revenue in the short run, it will do so over the longer run since tax reforms almost always change the elasticity of the tax system" (Tanzi 1994, p. 457).

system, which could be justified on revenue grounds, has a significantly higher revenue potential of Leva 3036 per taxpayer, compared to

Leva 1,850 under the 1992 personal income tax schedule (see panel b of Table 5).

Table 5: Alternative income tax systems and their revenue potentials

(a) A flat 11 percent income tax with exemption for the poor

Average income (Leva)	Income share (%)	Tax rate (%)	Average tax revenue (Leva)
8151	20	0	0
13215	40	11	1454
20760	30	11	2284
36653	10	11	40321
Weighted average		8.8	1881

(b) A flat 20 percent income tax with exemption for the poor

Average income (Leva)	Income share (%)	Tax rate (%)	Average tax revenue (Leva)
8151	20	0	0
13215	40	20	2643
20760	30	20	4152
36653	10	20	7331
Weighted average		16	3036

(c) A more progressive, three bracket income tax system - variant one

Average income (Leva)	Income share (%)	Tax rate (%)	Average tax revenue (Leva)
8151	20	0	0
13215	40	20	2643
20760	30	30	6228
36653	10	40	14661
Weighted average		21	4391

(d) A more progressive, three bracket income tax system - variant two

Average income (Leva)	Income share (%)	Tax rate (%)	Average tax revenue (Leva)
8151	20	0	0
13215	40	15	1982
20760	30	30	6228
36653	10	40	14661
Weighted average		19	4127

Source: Authors' estimates using 1992 Individual Budgets of Households Survey, NSI.

4.2. A more progressive, three-bracket system can raise even more revenue

The main arguments made in favor of a simple system with fewer tax brackets and flat rate(s) is simplicity revenue potential and other potential supply side incentives related to saving and investment.¹¹ Its biggest disadvantage is the lack of progressiveness. Besides the acknowledged need to generate revenue, personal income tax is also often expected to perform a redistributive function. The significant excess of the income of the rich above mean income suggests that - on the basis of the principle of ability to pay - it is desirable to collect substantial tax revenues from the rich.¹² To explore the revenue implications of alternative, but more progressive income tax than the previously discussed flat-rate tax, we have constructed two alternative tax structures with broad, yet realistic, tax brackets derived from the 1992 income distribution (see panel c and d of Table 5). For example, panel c of Table 5 shows an alternative income tax system with four brackets (including the lowest tax-free bracket, as in the flat-rate system) and four marginal rates of zero, 20 percent, 30 percent, and 40 percent. This system has the potential to raise an average revenue of Leva 4,391 per taxpayer or more than twice the potential revenue of the 1992 system, i.e., revenue-enhancing reform. It also has potentially higher revenues than either the 11 percent or 20 percent flat rate systems. Furthermore, our counterfactual analysis shows that the system has an overall mean marginal rate of 21 percent, compared to 8.8 and 18 percent for the 11 percent and 20 percent flat rate systems, respectively.

A variation of this three-bracket system featuring lower income tax rates and broadening of tax brackets is considered in panel d of Table 5. Though average revenue per taxpayer drops as a result of lower rates, the broadening of the tax brackets ensures that its revenue potential is far better than the 1992 schedule.¹³

It should be noted that in all of our counterfactual experiments the income threshold at which positive tax payment must be made is increased from 9,000 leva (a level at which only 13 percent of the population are exempted) to Leva 13,215 (a level at which 20 percent of the population are exempted). That is, the proposed personal income tax reform, either in the form of flat rate tax or a more progressive tax system as discussed above would be pro-poor, directly favoring the poorest 20 percent of the population. Also, the significant reduction in the number of tax brackets may well facilitate administration. Finally the low alternative tax rates are more amenable to compliance and enforcement.

4.3. Actual system drifts away from lower, simpler rates

The analysis shows that lower simpler rate structure can be more effective than the present system in terms of both potential revenue generation and protection of the poor. Unfortunately, the 1993 amendment to the 1992 income tax law indicates a return to high tax rates and more complex schedule.¹⁴ Under the 1993 Personal Income Tax Law there are ten income tax brackets, an increase of three brackets with higher rates: 44 percent, 48 percent, and 52 percent. Such amendment would complicate -rather than simplify- and strain existing scarce administrative tax capabilities.¹⁵ Under such circumstances, the revenue, redistributive, and developmental objectives of tax amendment may prove difficult to attain. It is beyond the scope of this paper to analyze the reasons for the increasing complexity and higher rates. Suffice it to say that explanation must take account of political economy factors.

5. Income tax comparisons

It may be useful to point out that the drift away from lower and simpler income tax rate structure in Bulgaria is in sharp contrast to the broad trends in the world

11 Our analysis does not attempt to assess longer-term effects of tax policy through changes in the level of capital formation and growth. Lower flat rates have the obvious advantage of reducing disincentives to a wide range of economic activities, including work effort and saving and investment. Nevertheless, it is difficult to quantify these effects although there is often no question about their direction. For instance, Hall and Rabushka (1985) estimate the potential gains from their proposed simple flat wage and business tax as a 6 percent increase in output from increased total work in the US economy and an additional increment to total output of 3 percent from added capital formation, p. 75.

12 Stern (1987) shows that greater inequality in income-earning ability did indeed result in higher optimal tax rates. On the other hand, Brennan and Buchanan (1980) and Harberger (1993) argue that the design of tax policy should be guided primarily by practical considerations such as simplicity, uniformity and transparency as opposed to the rates implied by the optimal tax theory. Tanzi (1992) and Bird (1989a) have also stressed the need for tax policy to pay more attention to the practical and administrative constraints.

13 Base-broadening is particularly important as a goal of tax policy since it is the primary means of ultimately securing reductions in rates. 14 Bulgaria's 1993 personal income tax schedule is given in Tax Notes International, Volume 6, No. 19, 1993, page 1139.

15 The inherent administrative weaknesses necessitates simple tax system with few brackets and rates. Tanzi (1991) pointed to the adverse effect of the transition to a market economy on the efficiency of tax administration - from centralized tax collection or, in some cases, confiscation under the planned regime to the new decentralized market environment-which requires the introduction and development of an entirely new tax administration machinery, a process which inevitably takes time. This was perhaps especially the case for taxing Bulgarian self-employed and non-wage income in a rapidly growing small-scale service sector which is difficult to bring to the tax net.

tax reform during the 1980s, featuring reduction in income tax rates in a number of countries. Table 6 shows the top marginal personal income tax rates before and after the tax reform in a number of countries that had undertaken reforms

of their income taxes. Almost without exception, these countries have cut rates significantly. The average top marginal income tax rate has been reduced from 60 percent to 40 percent, a relative reduction of one third.¹⁶

Table 6: Top marginal personal income tax rates before and after reform in selected countries

Country	Top marginal rate, before reform (%)	Top marginal rate, after reform (%)	Direction of change	Latest year of reform
Australia ^a	60	49	-	1985
Canada ^a	34	29	-	1988
Colombia ^a	49	30	-	1986
Indonesia ^a	50	35	-	1986
Israel ^a	60	48	-	1988
Japan ^a	70	50	-	1988
Jamaica ^b	58	33	-	1986
Mexico ^a	55	40	-	1987
Sweden ^a	75	50	-	1982
United Kingdom ^a	80	40	-	1988
United States ^a	70	28	-	1986
Average	60	40	-	- -
Bulgaria ^c	40	52	+	1993

Source: a/ McLure (1990) Table 15.1, page 282; b/ Bahl (1989), Table 5.4, page 142; and c/ Tax Notes International (1993), Volume 6, No. 19, page 1139

^d The US top rate does not include the surcharge faced by upper-middle-income taxpayers, amounting to five percent

In contrast, Bulgaria has increased its rates with the top rate rising from 40 percent in 1992 to 52 percent in 1993. Bulgaria's top rate is the highest from among the countries presented in the table, exceeding those of the two notable outliers Sweden and Japan. Furthermore, in the late 1980s and early 1990s several of the countries have further reduced the income tax rates (notably Colombia and Indonesia), which makes the contrast even more striking.

Advice of international organizations and foreign experts on personal income tax has emphasized base broadening and reduction of rates. For instance, the 1988 World Development Report noted that in the majority of a sample of developing countries the top rate of personal income tax exceeded 50 percent but, much like Bulgaria, applied to only tiny fractions of income and income recipients. It suggested that most special allowances be eliminated and the maximum rate be set at perhaps 30-40 percent (World Bank

1988, p. 98). IMF tax missions rarely recommended a top rate above 40 percent and typically proposed very few rates - almost never more than five and often less than that (Tanzi 1994, p. 463). Tax advice from foreign experts also recommended simplified personal income tax system with lower rates. For example, Roy Bahl, leader of a mission to Jamaica, recommended that a steeply graduated tax-rate schedule reaching a maximum of 57.5 percent be replaced by a flat rate of 33 1/3 percent on the grounds that "Vertical equity cannot be the driving force behind a comprehensive tax reform program in a developing country" (Bahl 1989, p. 166). The new flat rate, together with curtailment of special credits and exemption, was estimated to yield somewhat less revenue but to be effectively more progressive (Bahl 1989, pp. 144-146). Gillis, the director of a large-scale study of Indonesian taxation, settled on a threebracket personal income tax structure with rates of 14 percent, 25 percent and 35 percent to be applied to a broadened base (Gillis 1989, p. 103)¹⁷

16 For instance, prior to the 1986 US Tax Reform Act, there were more than a dozen rates, from 11 percent to 50 percent. The new act has only a 4-bracket tax structure with rates: 15, 18, 33 and 28 percent (McLure 1989b, p. 359).

17 In addition to Bahl and Gillis, others who were prominently involved in advising on taxation in developing countries included: Shere (1951) - Philippines; Adler (1956) - Nigeria; Bird (1970) and McLure (1989a) - Columbia; Kaldor (1980) - India and Sri Lanka; Musgrave (1981) - Bolivia; Chelliah (1986) - Zimbabwe; Shoup (1989) - Liberia, Venezuela and Brazil; Bird (1989b) - Papua New Guinea; McLure (1991) - Venezuela; and so on.

Table 7: Income tax schedule in Eastern European economies and successor states of the Soviet Union

Country	Minimum marginal rate (%)	Maximum marginal rate (%)	Year
Bulgaria	20	52	1993
Romania ^a	6	60	1992
Azerbaijan ^b	12	60	1992
Tajikistan ^b	12	60	1992
Uzbekistan ^b	12	60	1992
Turkmenistan ^b	12	50	1992
Armenia ^b	12	30	1992
Czechoslovak Rep. ^c	15	47	1993
Poland ^d	21	45	1994
Hungary ^c	20	44	1994
Average	14	51	

Sources: a/ Shome P, E. Haindl, and O. Schenone (1993); b/ Shome P and J. Escolano (1993); c/ Coulter, et. al. (1993); d/ IMF (1994) Republic of Poland: Background Paper March 1994; and d/World Bank (1994), Hungary: Country Economic Memorandum.

In contrast to reduction of tax rates in many developed and developing countries, a comparison of income tax rates in transitional economies, reveals that part of the high income tax rate 'syndrome' may be a regional peculiarity of these economies. The countries in Table 7 representing a spectrum of transitional economies all have extremely high top marginal tax rates, often higher than the 52% rate found in Bulgaria. Interestingly the minimum marginal tax rate is also rather low, between 6 percent in Romania and 15 percent in the Czech Republic.¹⁸ This suggests prima facie that, much like Bulgaria, other transitional economies may also face design problem in their income tax systems. This particularly so if the underlying income distribution in those countries is not adequately taken into account in designing appropriate tax rates and tax brackets. Recent analyses of income inequality and poverty trends in transitional economies by Milanovic (1992, 1995) and Hassan and Peters (1995), show some striking similarities in the patterns of poverty and inequality in transitional economies. In particular, the pattern of inequality of income (e.g., Gini coefficient) in Bulgaria is found similar to that in Poland and Romania. Therefore, to the extent that the income tax system in Poland and Romania may suffer from similar deficiencies as Bulgaria's system, particularly low exemption level, large number of brackets, high rates, and mismatch between income distribution and bracket/rate tax structure, a similar analysis for these countries may provide useful direction for improving the design of their personal income taxes.

6. Conclusions

Using the data in the 1992 household budget survey, we have shown that Bulgaria can benefit from a much simpler and lower income tax structure than the one which prevailed in 1992. We have explored two possible types of alternative income tax systems, a flat rate and a progressive, but simpler three-bracket rate system, and their implications for potential revenue. Our calculations show that each of these alternative systems would have been more efficient in terms of potential revenues, while increasing the protection to the poor through increasing the exemption for poor households, i.e., *revenue-enhancing* and *redistributive* tax reform.

The actual developments in Bulgaria since 1992 have, however moved the country even further away from the proposed simple income tax systems. In particular the 1993 amendments to the 1992 personal income tax have complicated the system in two major ways. First, while the 1992 marginal income tax rates had not been low by international standards, the rates implemented in the 1993 amendment were even higher with top rate rising from 40 percent to 52 percent. Second, the number of tax brackets has been increased from 7 to 10, with three additional brackets having higher rates of 44 percent, 48 percent, and 52 percent. These more complex and higher rates are almost certain to complicate administration and enforcement, and provide powerful additional incentives for tax evasion.

¹⁸ There is an acute lack of country studies on the effects of taxes in the course of economic transition. Some exceptions include studies of Czechoslovak Republic (Coulter et al. 1993), Romania (Shome, Haindl and Schenone 1993) and Former Soviet Republics (Shome and Escolano 1993).

Our counterfactual analysis suggests a much simpler personal income tax system with better revenue raising potential and re-distributional effects is possible to design. One such system could have the following characteristics. First, a higher exemption level covering larger number of the poor the lowest 20 percent of the population as opposed to 13 percent of the population. In terms of average per capita income, the proposed exemption level would suggest an increase from 50 percent to 78 percent.¹⁹ Second, a low income tax bracket covering the next 40 percent of the income spectrum (second and third income quintile), with a rate structure in the range of 15-20 percent. Third, an intermediate income tax bracket corresponding to the higher income groups (seventh, eighth, and ninth income decile) with 30 percent marginal tax rate. Finally, a high income tax bracket with a top marginal rate 40 percent levied on the wealthiest (top income decile) with a share of total income of 21 percent and an average income which is 218 percent of the national average. The proposed marginal rates reflect common international experience. The precise limits of the proposed tax bracket are derived from the 1992 income distribution with the objective of showing that the revenue raising and distributional effects of the 1992 income tax schedule could be approximated (and even surpassed) by a simple tax structure with fewer broad brackets. Another system would simply replace the complex rate structure with a flat income tax rate with higher exemption to provide wider protection to the poor. This system would also be much simpler and easier to implement than the current one; and it is shown that it could provide more revenues and more protection to the poor than the present one.

Whichever alternative income tax structure is chosen in Bulgaria, it should be clear from the above analysis that the 1992 system and, even more so, the recently amended income tax system has inferior characteristics to simpler and more efficient alternatives. Therefore, further efforts in reforming the income tax system in Bulgaria aim to raise the exemption level, set the rates as low as possible, and reduce the number of brackets and define them as broadly, yet realistically, as possible. Reform in this direction would not only improve the revenue performance of this important tax, but also improve its protection of the poor.

Since Bulgaria's distribution of income is similar to that of other transitional economies, and to the extent that personal income tax system in these economies suffer from similar deficiencies as Bulgaria's system, the reform suggestions made in this paper are potentially relevant to other transitional economies contemplating tax reforms.

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¹⁹ This may seem to be rather low by Eastern European and Latin American standards, but is not necessarily so by Western standards, see Tanzi (1975) and Shome, Haindl and Schenone (1993).

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Key words:

tax reform, revenue-enhancing, redistribution, tax evasion

JEL classification: H1, D6