

ANALYZING THE TAX REFORM FROM AN ECONOMIC PERSPECTIVE

A. Vasilieva, E. Gurvich, V. Subbotin

Economic Expert Group

PREREQUISITES OF REFORM

A sweeping tax reform was a key objective of the Government's long-term program drafted in 2000. Indeed, the existing taxation system had several fundamental weaknesses. Its general structure was typical for the transitional economies: the bulk of revenues came from VAT, profit tax and payroll taxes (almost 60% of all pre-reform revenues came from these three taxes). What is striking about this structure is that it scarcely reflects the specificities of the Russian economy dominated by the resource sectors. In the current global practices (with their sound economic rationale), taxation of royalty is much above the overall taxation burden. The sizes of special resource taxes in the mining sector are clearly inconsistent with the size of its royalty. This, inter alia, is the basis for preserving the commodity-oriented nature of the Russian economy.

One major deficiency of the tax system was to assess tax liabilities as a factor of a company's earnings ("turnover"); these taxes had a strongly distorting impact, in particular, by discouraging the higher level of added value. Many tax bases, e.g., for the profits tax, were measured in a strongly distorted way, and some taxes duplicated each other.

The taxation system was highly unfair and disruptive for normal competition. This unfairness was rooted in the numerous discretionary tax exemptions and privileges (thus, profit tax exemptions alone, granted by the local governments, resulted in the shortfall of collections by 0.5% of GDP). Another source was the easy and unpunished tax evasion. Some elements of the tax system clearly encouraged tax evasion, e.g., the use of "cash basis" in accounting when tax liabilities arose only after the buyer's payment for the goods. This was an additional incentive for a broadly used scheme of illegal export of capital in the form of non-repatriation of foreign exchange export proceeds. Besides, taxation levels were different across sectors.

The addressing of all these problems was justifiably named as a tax reform objective. The main goals of the reform were to reduce the tax burden (concurrently with reducing

government expenditures), restrict the distortionary impact of the tax system and provide for a more equitable distribution of the tax burden (primarily by eliminating the unreasonable exemptions and privileges). The government intended to increase the role of resource and property taxes. The reduction of the tax burden on the economy (particularly on law-abiding taxpayers), liberalization and simplification of the tax system and stronger protection of taxpayers were contribute strongly to improving the investment climate and unshadowing of capital evaded from taxation.

Fiscal losses from the lowering of tax rates were expected to be partially offset by the expanded tax base after the reduction of exemptions and unshadowing of business (as the companies' response to the lower tax rates and as a result of closing the tax evasion loopholes).

We think the goals of the tax reform were broadly correct. We will now have a closer look at some of the problems.

Taxation of royalties in Russia is much below the levels in most oil-producing countries. This is proven, for example, by a survey of the leading oil companies' financial reporting by the Economic Expert Team. The survey showed that the after-tax profit-to-earnings ratio in the Russian companies is about five times higher than in the leading foreign companies, even by official reporting. There is no doubt that the actual ratio (which also captures the tax-evaded profits) is much larger.

By our estimates,¹ the specific taxes in the oil and gas sector withheld only about one third of the royalty. Meanwhile, the maximum withholding which would put the resource sectors in a relatively equal position with the processing ones, is critical for preventing the "Dutch disease" which exists in its acute form in Russia. Unless there is a radical re-distribution of the tax burden, Russia will remain a commodity-exporting country dependent on the world markets fluctuations. Withholding the royalty in the mining sectors, and thus reducing the tax burden on the processing industries, is the tool for using Russia's competitive advantages on the world market to the highest possible extent and for creating the conditions for diversification of its economy.

Another major problem is the magnitude of tax evasion. Our analysis shows that it was extremely large. According to Goskomstat's SNA-consistent data, the share of gray wages ranged between 28% and 35% in 1997-2000, i.e., almost one third. This means that undercollections of the social tax amounted to a half of actual collections, or 4% of GDP in 2000. Personal income tax evasion was much larger. First, the "envelope wages" in general were much above the average level. Accordingly, the progressive tax rate charged on the "envelope" part of the wage was much higher than on the "official" wage. We estimate that the wage tax evasion reached 46% in 2000. Besides, wage takes up only two thirds of the household income. Income from business operations and property is also taxable; its total share takes about 20%. In total, fiscal losses from the personal income tax evasion could be assessed at least at 3% of GDP.

Evasion of high income from taxation undermined the very idea of the progressive personal income tax because wealthy citizens offset the high tax rate with underinvoicing its base and, in fact, paid scarcely more than poor citizens (even in nominal terms). This is confirmed in the paper by Sinelnikov et al.² which empirically showed a negative correlation between the personal income tax base and the highest tax rate. The correlation is so strong that tax collections, too, have a negative correlation with the highest rate. Besides, the paper shows that the replacement of the progressive scale with a flat one in 2001 increased the progressivity of the wage tax although the progressivity of the tax on income in general remained low.

Another tax with a high level of evasion is the profits tax. Thus, SNA-consistent net profit in the economy amounted to 23% of GDP in 2000, while the reported net profit of large and medium companies reached only 14% of GDP. The profits tax evasion could be assessed at 2% of GDP. Accordingly, evasion comes up to 9% of GDP for the three taxes alone.

Underinvoicing of resource payments and import duties (including by transfer pricing) was large, too. The total evasion from all taxes might be roughly estimated at about a quarter of tax liabilities (i.e., one third of actual collections). This is less than in many developing

¹ E. T. Gurvich, Rossiiskaya nalogovaya reforma – pervye itogi. "Modernizatsia ekonomiki Rossii: Itogi i perspektivy", M: GU VSHE, 2003.

² S. S. Sinelnikov-Murylev, S. Batkibekov, P. Kadochnikov, D. Nekipelov. Otsenka rezultatov reformy podokhodnogo naloga v Rossiiskoi federatsii. M., Nauchnye trudy IEPP, No. 52. 2003.

economies (where evasion often exceeds one half of liabilities) but much above the economies with the strong government institutions (e.g., personal income tax evasion in the USA is estimated at 17%).

Tax evasion reduces the tax burden on unfair companies, on the one hand, while on the other hand it shifts the burden on fair taxpayers. A key idea of the tax reform was the following: a reduction of tax rates will bridge the gap between the nominal and actual burden by reducing the former and increasing the latter through creating disincentives for evasion. But the need to lower the tax rates in a heavy evasion environment is not obvious. First, the correlation between tax rates and evasion is not as straightforward as might seem at a first glance. Theoretical models forecast that either larger or smaller evasion might come as a response to the lowering of tax rates, depending on the features of the taxation system and taxpayers.³ Furthermore, some empirical papers, too,⁴ make conclusions about a reverse correlation (the easier the tax burden, the larger evasion). Papers also show⁵ that there might be an environment where the lowering of tax rates will increase the public welfare as well as reduce evasion, but the optimal policy in this case might still be to increase the rates while improving tax administration. In other words, the lowering of rates might seem reasonable if tax administration is weak but not as effective as an increase of rates would be if tax administration were improved concurrently.

We will now look at the overall level of the tax burden. First, we would like to note that the concept of “tax burden” is relatively multivalent. Figures of assessed and actually paid liabilities differ. If current liabilities exceed payments (and lead to piling up of the tax arrears), this means either that the tax rates are too heavy to bear or that the budget constraints are too loose (the authorities turn a blind eye to the delinquents). Both concepts of the burden, i.e., the size of payments to the budget and the size of arrears, are important for a company. The gap between the nominal liabilities and actually assessed ones is even larger (this gap is caused by underinvoicing the tax base, i.e., evasion). The size of the nominal burden is important because it is this burden which falls on fair taxpayers, while a large gap between the nominal and effective rates (gross of evasion) distorts competition significantly and put the delinquents in an advantageous position.

³ Slemrod J., Yitzhaki S. Tax Avoidance, Evasion and Administration. NBER WP 7473, 2000.

⁴ Feinstein J. An Econometric Analysis of Income Tax Evasion and its Detection. RAND Journal of Economics, 1991, v.22, No. 1.

⁵ Slemrod J. Fixing the Leak in Okun’s Bucket: Optimal Tax Progressivity When Avoidance Can Be Controlled. Journal of Public Economics, 1994, v.55, No. 1.

Finally, the assessed and paid liabilities in Russia strongly depend on the external situation, and this factor cannot be overlooked. Such payments as export duties and the extraction tax in the oil sector are directly linked to the world prices. Besides, world price fluctuations affect the exporters' profit and, therefore, the assessed profit tax liabilities. These factors affect GDP, too, albeit to a smaller extent, so that the tax-to-GDP ratio greatly depends on the oil prices. We estimate that an increase of prices by US\$1/barrel in the band of US\$20-25 per barrel (and a related increase of the gas price) boosts up tax payments by 0.45% of GDP. Therefore, the tax burden on the economy should not be discussed separately from externalities because it is not an isolated figure but a function, a relation of the assessed tax liabilities to the external situation (expressed through the oil prices as its condensed form). The outward increase or decline of assessed and paid tax liabilities do not necessarily have a change of the tax burden behind them; the cause is often in the world price fluctuations.

While measuring the actually paid taxes, we used the most comprehensive estimates that take into account all payments collected by the Ministry of Taxation and SCC, including those paid to the budgetary and extrabudgetary funds. The results are about 2.5% of GDP below the total revenues of the enlarged government (which also include non-tax sources, such as proceeds from the state-owned property, the government trade, etc.). Data from different sources do not fully overlap but the deviations are minor (within 0.5% of GDP). As could be seen from figures in Table 1 below, the tax-to-GDP ratio was 34% at the start-up of the reform, but the standardized burden for the "normal" oil price was 32% of GDP.

Table 1. Total paid and assessed tax liabilities (% of GDP)

	2000	2001	2002
Actually paid	3.9	34.3	34.0
Standardized tax load (payment) at \$18.5/barrel for Urals	31.9	32.6	31.8
Actually assessed liabilities	34.9	34.6	33.4
<i>Memorandum item: Urals oil price (\$/barrel)</i>	26.7	23.0	23.7

Let us see how reasonable is a view which is common in Russia⁶ (and is much behind the government's macroeconomic policies and reform program) that the total tax burden is almost

⁶ A. Illarionov. *Bremya gosudarstva, Voprosy ekonomiki*, 1996, No. 4.

entirely determines growth. In the neo-classical growth models (such as the Solow model), long-term growth rates do not depend on fiscal policy indicators. Much of what the lowering of taxes can do is to make a short-term positive effect. This conclusion remains in full force regardless of whether the lowering of taxes is coupled with the spending cuts or whether it is financed from the borrowing.

In endogenous growth models, taxes affect the long-term growth rates by reducing return on capital and labor, but this effect could be either negative or positive. The overall nature of correlation between the tax burden and growth in these models depends on the assessment of productivity of government expenditures. Some empirical studies⁷ show that many services or expenditures of the government make a meaningful positive effect on economic development. The most efficient government spending areas are security and law enforcement, general education, and investments in infrastructure. At the same time, these services and investments are not sufficiently provided by the private sector. A review of endogenous growth models that take into account the positive effect of government spending on the private sector effectiveness and/or on saving the human capital⁸ suggests the existence of the optimal “size of the state” (i.e., the enlarged government budget relative to GDP). Depending on the nature of the assumed effect, it is characterized by the size of either revenues or expenditures. This optimal size provides for a compromise between the tax burden and benefits from providing public goods, while deviations from the optimal size of the budget in either direction are equally unwelcome because they will decelerate growth in both cases.

None of the theoretical studies derived any reliable specific estimates of the optimal tax level or government expenditures. To bridge this gap, we will turn to empirical studies. Dozens of cross-country studies of growth factors have been taken over these past 15 years, and they used the most sophisticated methods of econometric analysis. A key conclusion based on the wealth of these papers is the following: there are zillions of variables that affect the end result and are closely interrelated. This makes the results relatively unsustainable: a given set of factors taken for the analysis, the time span and a country sampling might greatly affect the judgment on the role of any particular variable. This prompted the development of “meta-

⁷ See, e.g., Easterly W., S.Rebelo, Fiscal Policy and Economic Growth: and Empirical Investigation. CEPR Discussion Paper, 1994, №85.

⁸ Corsetti G., N.Roubini, Optimal Government Spending and Taxation in Endogenous Growth Models. NBER Working Paper 5851, 1996.

studies”⁹ that attempt to identify the most sustainable relations by using formal or informal methods. The results of empirical studies worldwide during the past 15 years were recently summarized by Sala-i-Martin.¹⁰ He put one of his main conclusions as follows: “The size of the state does not seem to be of major importance for growth.” This is confirmed by the mixed assessment of a relation between “the size of the state” and growth rate reported in different papers: the effect was either weakly negative (but did not exceed 0.15% a year as a response to the lowering of the tax burden by 1% of GDP) or slightly positive, or else it was totally absent. Sala-i-Martin included the following factors among those that had a sustainable effect on growth (in decreasing order):

- the initial per capita GDP (all other things being equal, poor countries report higher growth),
- the quality of institutions (protection of ownership, compliance, etc.),
- the quality of the government’s economic policy and bureaucracy,
- the level of transparency,
- the quality of some human capital indicators (e.g., life span).

Absence (or weakness) of an empirical relation between growth and “the size of the state,” provided there is a theoretically substantiated optimal size, proves that growth is either insensitive to the level of taxation or the actual tax burden, on average, comes close to the optimal level. The former case means that growth cannot be accelerated by reducing the taxes. In the latter case this is possible only in the countries with an excessive tax burden (much above countries with a comparable per capita income). It is only in these countries that a lower tax burden makes sense, and the further lowering of a relatively low tax level might be even harmful.

Therefore, we should see whether the tax burden in Russia is heavy vis-a-vis the comparable countries.

Figures in tables 2-3 show that the transition economies do not report an inverse relation of the tax burden level and the progress of its reform. Low tax rates are more common in the

⁹ Levine R., D.Renelt// A Sensitivity Analysis of Cross-Country Growth Regressions. American Economic Review, v. 82, 4, 1992; Sala-i-Martin X. I Just Ran Two Million Regressions. American Economic Association Papers and Proceedings, 87(2), 1997.

countries that have a weak government and a declining economy (Georgia, Tajikistan), while relatively high taxes are levied in the most successful of the former social countries (Hungary, Estonia).

The “size of the state” is usually larger in the richer countries. Therefore, cross-country comparisons should take into account the size of per capita GDP. A World Bank study¹¹ showed that the tax burden in Russia, on average, is somewhat weaker than the countries with the same capita income.

Table 2. OECD Tax Systems (1999)

	Tax revenues, total (% of GDP)	Taxes in total revenues (%)					Highest tax rates	
		Personal income tax	Profit tax	Contributions	Taxes on goods and services	Other	Personal income tax	Profit tax
Russia (2002)	34.0	9.7	12.4	22.2	41.4	14.4	13.0	24.0
Hungary	39.2	17.3	5.9	33.0	40.4	3.4	41.5	18.0
Poland	35.2	23.1	7.4	28.1	37.6	3.8	40.0	30.0
Slovakia	35.3	12.6	8.0	32.6	34.1	12.7	42.0	15.0
Czech Republic	40.4	12.9	9.5	37.7	32.5	7.4	40.5	31.0
Mexico	16.0	30.0		17.8	51.0	1.2	40.0	35.0
Portugal	34.3	16.9	11.7	23.9	41.3	6.2	46.6	35.2
Turkey	31.3	23.8	7.6	15.7	35.9	17.0	48.4	44.1
Average for EC	41.6	25.6	8.7	23.8	30.4	11.5	53.5	35.4
Average for OECD	37.3	26.3	8.8	22.2	31.7	11.0	49.4	31.9

Source: OECD

Table 3. Tax revenues in FSU in 1998 (% of GDP)

Azerbaijan	17.1	Lithuania	33.8
Armenia	20.6	Moldova	34.6
Belarus	27.8	Uzbekistan	31.1
Georgia	13.4	Ukraine	31.8
Kazakhstan	16.2	Tajikistan	11.7
Kyrgyzia	18.1	Turkmenia	23.1
Latvia	34.3	Estonia	37.1

Source: V. Tanzi, G. Tsibouris, *Fiscal Reform Over Ten Years of Transition*. IMF WP 00/113, 2000.

¹⁰ Sala-i-Martin X. 15 Years of New Growth Economics: What Have We Learnt? Columbia University, Discussion Paper #0102-47, 2002.

¹¹ World Development Indicators, 2000, Washington, World Bank.

Contrary to the common perception, nominal tax rates in Russia are not high either. In 1997, non-weighted VAT rates in East European economies amounted to 20.6%,¹² social tax rates to 43.5%, and the profit tax rates to 31.4%, i.e., they were much above the current rates in Russia. These data and figures in Table 5 suggest that the idea of a too heavy tax burden in Russia is groundless, as is the general belief that the payroll tax burden is excessive. This is also proven by cross-country comparisons of shares taken by different taxes (Table 2). They show that the share of the social tax in the Russian economy is much smaller than in other transition economies. Taken together, personal income tax and social tax reach only 32% in Russia, while their share ranges between 40% and 51% in OECD countries (including the transition economies; however, personal income tax in the developed economies combines taxation of wages and capital gain).

To make a more detailed analysis, we compared the effective rates for the main SNA-consistent tax bases (these include the “shadow” operations and, therefore, fully capture “gray” wages, profits, etc.). Following Mendoza, Razin, Tesar (1994); Carey, Chilingirian (2000),¹³ we identify three main categories: taxes on consumption, labor and capital. Categorizing the taxes does not pose problems in most cases, and only in a few cases it is relatively approximate, e.g., “turnover” and local taxes are divided between taxes on consumption and capital. We would like to note that the resource taxes and export duties do not fall into any of the three groups. Our analysis leaves aside the problem of carryover of taxes but, on the other hand, it avoids mixed judgments related to this problem.

Equations for computing the effective tax rates from the cited papers are somewhat simplified when applied to Russia:

$$R_l = (T_i + T_s) / (W + M)$$

$$R_k = T_k / (OS - M)$$

$$R_c = T_c / FC$$

where R_l , R_k , R_c are the computed effective rates of taxes on labor, capital and consumption, accordingly; T_i , T_s are collections from personal income tax and social tax; T_k , T_c are the

¹² Schaffer M., Turley G. Effective versus Statutory Taxation: Measuring Effective Tax Administration in Transition Economies. William Davidson WP 347, 2000.

¹³ Mendoza E., A.Razin, L.Tesar, Effective tax rates in macroeconomics: cross-country estimates of tax rates on factor incomes and consumption. NBER Working Paper 4864, 1994; Carey D., Tchilingirian, Average effective tax rates on capital, labour and consumption. OECD Economics Department Working Paper 258, ECO/WKP (2000)31, 2000.

total collections of taxes on capital (including the profit tax and the property tax) and on consumption (including VAT, import duties, and excises on consumer goods); W is the total wage (including the “gray” component); M is mixed income; OS is gross profit by SNA; and FC is final consumption. Results derived for Russia and their comparison with other countries are given in Table 5.

Table 4. Tax revenues and bases for main categories (% of GDP)

	Tax revenues			Tax base		
	2000	2001	2002	2000	2001	2002
On consumption	10.5	11.2	10.8	61.3	65.2	68.1
On labor	9.8	9.6	10.8	49.7	51.7	55.3
On capital	8.4	8.0	6.3	33.2	32.8	31.0
<i>Memorandum: Resource taxes and export duties</i>	5.2	5.6	6.0			

Table 5. Comparative effective rates for the main tax bases (%)

	Russia			1991- 1997 ¹⁴				
	2000	2001	2002	Hungary	Poland	Czech	OECD	EC
On consumption	17.1	17.1	15.9	25.7	19.8	25.7	17.1	18.7
On labor	19.7	18.5	19.6	39.6	42.9	39.6	33.4	36.8
On capital	25.2	24.3	20.4	N/A	N/A	23.1	26.6	25.1

Estimates show that in the pre-reform period Russia’s level of taxation of capital was approximately comparable with other countries; the effective load on consumption was somewhat lower; and taxation of labor was incomparably lower. After the reform the effective rates for all main tax bases are below the levels in other countries (we would like to re-emphasize that the largest gap remains in taxation of labor).

Thus, there are no grounds to believe that the tax burden in Russia is too high. Therefore, there is no reason to expect accelerated growth by reducing the taxes (excessive lowering of taxes and government spending might have a negative effect). This means that the total tax burden does not have a macroeconomic meaning but mostly a distributive one, i.e., it defines how added value produced in the society will be distributed but does not meaningfully affect its total size.

¹⁴ Carey D., Tchilinguirian, Average effective tax rates on capital, labour and consumption. OECD Economics Department Working Paper 258, ECO/WKP (2000)31, 2000.

Another argument in favor of easing the tax burden was given in the government's new draft medium-term program. There is a proposal to view the reduction of taxes as a measure which would compensate the unattractive investment climate. Using this measure in the global competition for capital instead improving more fundamental parameters of the business environment is explained by the possibility to amend the tax laws fairly quickly. The worldwide experience shows that the taxation system might well be a major factor which affects cross-border capital flows. Let us discuss this argument for Russia.

The objective is to have a rapid increase of FDI flows (because it is FDI that the Russian economy lacks, and they might be sensitive to the tax burden) and/or a rapid decline of Russian capital outflows. Clearly, it would be unrealistic to expect large FDI flows very soon because any major project is preceded with many years of analyzing, re-drafting and discussing it with the authorities and prospective partners. The complexity of this process is proven by a small FDI flow which reached only US\$2.1 billion in 2002 (0.6% of GDP), down against the previous year. Thus, Russia might expect only to keep the domestic capital at home. While discussing the choice between investing in the Russian economy or in foreign assets, we should look separately at two different cases: (1) capital outflows are combined with tax evasion: and (2) taxes are paid first, then the investment area is selected. To make things simpler, we will focus on only one tax, i.e., the profits tax. The condition of investing in the Russian economy will look as:

$$\text{Case 1:} \quad 1+r_3 < (1-t^*) [1 + r_p(1-t)],$$

$$\text{Case 2:} \quad (1-t) (1+r_3) < (1-t^*) [1 + r_p(1-t)],$$

where r_3 , r_p stand for ROI of foreign and domestic investments, respectively; t is the general profit tax rate; t^* is the discounted rate for invested profits.

Conditions for domestic investment will then be expressed as:

$$\text{Case 1:} \quad r_p > (r_3 + t^*) / [(1-t^*) (1-t)],$$

$$\text{Case 2:} \quad r_p > (1+r_3) / (1-t^*) - 1 / (1-t).$$

Let us assume that r_3 is 5% (its precise value has a minor impact on conclusions). If investments are taxed at the general rate of 24% in Case 1, capital will be invested in Russia only in projects with annual ROI of 50%. The lowering of the tax rate cannot push the threshold of investment effectiveness down to an acceptable level: if lowered from 24% to

15%, it would have pushed the effectiveness of domestic investment to 28% per annum, i.e., it would have been too high anyway. The situation is changed dramatically when invested profit ($t^*=0$) is exempt from taxation: the effectiveness level would have been brought down to 7%. In Case 2, the profitability threshold is initially low for investments in domestic projects: a level above 6.6% per annum is sufficient. Its dependence on the tax rates in this case is negligible: e.g., the lowering of the rate to 15% will push the profitability threshold to 5.9% per annum for investments.

This analysis shows that it is the possibility of tax evasion for foreign investment and the discounted taxation of invested profits, rather than the overall level of taxation, that are the crucial factors in terms of attracting the Russian capital. To make capital outflows unprofitable, either tax evasion should be made more difficult, or a large investment privilege should be offered.

Thus, Russia needed not so much the lowering of the overall tax burden as major changes in the structure of its taxation system. Both theoretical and empirical studies show that its internal structure has a major impact on economic developments. Taxes on consumption (VAT, excises) and withholding of royalty (through resource taxes) are more preferable for the economy than taxation of profit and wages. Some schemes for encouraging investment and innovation (e.g., a tax credit) might have a positive effect.

DIRECT EFFECT OF REFORMING THE MAIN TAXES

Let us now look at the actual results of the tax system reforms in 2001-2002. The tax-to-GDP ratio fluctuated slightly in this period (see Table 6). Does this mean that the reform has not changed the tax burden?

First, we will note that the size of assessed tax liabilities declined notably, by 1.5% of GDP over the two years. Assessed liabilities were below the actually paid taxes for the first time in 2002. Clearly, this might be a temporary development, i.e., we are to see an additional decline of tax revenues in the period ahead.

Even if our analysis uses only actually paid taxes, not the assessed liabilities, the unchanged level of tax collections will not be evidence that they have not been affected by the tax

reform. Indeed, in order to measure the effect of the reform, we should compare the situations “with” and “without” the reform, not “before vs after” the reform. This will help prevent overlooking the fact that tax collections fluctuate substantially as they are affected by macro changes, even if the tax laws are not amended. Let us look at the effect of reforming the main taxes.

Table 6. Collection of main taxes (% of GDP)

	2000	2001	2002
Personal income tax	2.4	2.8	3.3
Social tax	7.4	6.8	7.5
Profits tax	5.4	5.6	4.2
Export duties	2.3	2.5	1.8
Import duties	0.9	1.2	1.2
VAT on imports	1.4	1.8	2.0
Domestic VAT	4.9	5.3	4.9
Excises	2.1	2.5	2.4
Resource payments	1.7	1.6	3.1
Other taxes	5.5	4.2	3.6
<i>Total</i>	<i>33.9</i>	<i>34.3</i>	<i>34.0</i>

Source: authors' estimates.

A large positive effect came from the lowering of “turnover” taxes in 2001 (tax on maintenance of housing and on road users). It reduced the tax burden by 8.% of added value (AV) in the industrial sector, 7.3% in construction and 5.8% in transportation. The definitive elimination of these taxes in 2003 will bring about an additional relief of the tax burden in these sectors by 3%, 2.5% and 2% of added value, respectively. Equally important is the fact that lowering of the “turnover” taxes (levied on the total value of output, regardless of the size of costs), followed by their complete elimination, had a positive effect primarily on the processing sectors and a much weaker impact on the mining industries. By our estimates, the lowering of the “turnover” tax rates by 3% in 2001 was equivalent to a reduction of the VAT rate by 5-7% for such sectors as fuel and non-ferrous metallurgy, and by 10-13% for the processing sectors (chemical, petrochemical, machine engineering, food, etc.). Thus, the lowering of the “turnover” taxes in 2001 and their complete elimination as of January 1, 2003, is certainly an incentive for diversification in the economy.

A move to the flat rate for personal income tax scarcely affected its effective rate: the collections-to-payroll ratio amounted to 12.8% in 2000, 12.2% in 2001 and 12.7% in 2002 (for comparability purposes, the two latter figures were computed net of the tax on the

military, judges and prosecutor staff, which was introduced in 2001). The effect was minor because most taxpayers (90%) paid the personal income tax at the lowest rate even before the reform. Conversely, the reform of the social tax brought about a substantial reduction of the effective tax from 39.4% of the payroll fund in 2000 to 31.0% in 2001 and 2002. At the same time, the expanded base of these taxes resulted in the higher total collections of these taxes over the two years.

The reform of the unified social tax (UST) included two channels of differentiating the impact by sectors: a change of the base rate and regressivity of the scale. Clearly, the lowering of the UST base rate offers larger benefits to the sectors with a larger share of the payroll fund in the added value. These include sectors that produce final goods, such as machine engineering, consumer and food industries, whereas the resource sectors (oil, gas, metallurgy) take the opposite pole. At the same time, regressivity of UST brings gains mostly to the sectors that pay higher wages. Actual data about the results of reforming UST in 2001 showed that the processing sectors' larger gains from the lowering of the average social tax rates vis-a-vis the mining sectors, and fewer benefits from the regressive scale, have been actually cross-offsetting. It seems that radical changes of the regressive UST scale, suggested by some economists, will further enhance the unreasonable advantages of the resource sector in terms of profitability and strengthen the "Dutch disease" in Russia.

The most heated debates focused on the results of the profit tax reform whereby some changes (lowering of the rate, the new depreciation procedure, an expanded list of deductible costs) reduced the assessed liabilities, while other changes (elimination of exemptions for the eligible companies) increased them. The largest exemption was for investment (it was granted across the board, not on a case-by-case basis): its deductible amounted to 15% of the declared profit in 2001.

The full effect of the profits tax reform was a sum of two elements: (i) a changed effective rate in the comparable economic environment (both nominal rates and exemptions were taken into account), and (ii) changed conditions (either external or domestic that came as a result of Russian companies' operations). To assess the effect in the first case, we compared the actual effective rates of the profits tax in 2001 with their estimates and assumed that laws valid in 2002 were effective in 2001 (see Table 7).

As could be seen from Table 7, the reform of the profits tax should have reduced it by 12% on average (all other things being equal). Although the existing exemptions did push the rate effective in 2001 down to 24%, it should have further declined to 21% (of the profit measured by the old rules) in the new conditions. Thus, an average statistical producer would have gained from the reform of the profits tax. The result could have been different for companies that used the investment exemption more proactively. Companies whose exemption-eligible investments exceeded $\frac{1}{3}$ of the profit were to pay more in taxes under the new legislation. Yet, the actual level of investments from the savings fund was much below this level for most sectors: it reached 20% for the industrial sector and 15% across the economy in 2001. In the food industry alone its losses from elimination of exemptions, on average, should have offset gains from the lowering of the rate.

Table 7. Estimated effect of the new profit tax rate in the 2001 environment (*Rub bn*)

	Actual	New profits tax (estimates)
Profit declared for taxation	2,030	1,915
Investment deductibles	300	-
Effective tax base (gross of all exemptions)	1,461	1,787
Nominal rate	35%	24%
Assessed liabilities	488	429
Effective rate (on the 2001 taxable profit)	24.0%	21.1%

Source: authors' estimates.

Actual profits tax payments declined by 1.4% of GDP in 2002 (i.e., by $\frac{1}{4}$ in real terms). The assessed profit tax liabilities declined even more (by 1.7% of GDP, or almost $\frac{1}{3}$). The largest decline was reported in transport and communications (7.3% of the added value), and in the industrial sector (3.2%). It should be noted, though, that the reduction of the tax burden was larger in the resource sectors (with a higher profit ratio than in the processing industries): the largest gains came to the fuel sector (6.8% of the added value), electric power generation (4.3%) and metallurgy (4.1%), while the smallest gains, as expected, came to the food industry (0.3%).

Formally, the decline of revenues was caused by a rapid drop of profits: the reported net profits (“financial performance”) of large and medium companies shrank by $\frac{1}{3}$ in real terms. However, producers’ real financial situation is more accurately measured by SNA “economic” profit which captures all profits (including the share evaded from taxes) across all

companies and does not depend on the administrative decisions on revaluation of fixed assets because this measurement is cleared of the estimated “capital consumption,” not of depreciation. The net “economic” profit in GDP reduced slightly (by 5%) in 2002 against the 2001 level, i.e., the profits tax base did not contract significantly in economic terms. Accordingly, the gap between “economic” net profit and “financial performance” widened from 184% in 2001 to 265% in 2002. It should be noted that the decline of SNA-measured gross profit by 1.8% of GDP in 2002 was almost fully offset by the declined profit tax payments. This means that companies’ after-tax financial resources remained almost intact and, therefore, this could not have been the cause of the sharp and unexpected deceleration of investment growth.

Our analysis showed that the main cause behind the decline of profits tax revenues in 2002 was the lowering of its rate (which explained the decline of collections by 0.6% of GDP). Another share of losses (0.4% of GDP) was related to the indirect effect of the fixed asset revaluation and the reform of extraction tax (its increase relative to the taxes which it replaced entailed a decline of profits in the oil sector). A decline of “economic” profit because of the structural changes in the economy explains the reduced collections only by 0.2% of GDP. Finally, the remaining undercollections of the profits tax (0.2% of GDP) was a result of the broader tax evasion. This is confirmed both by a broader gap between reported and “economic” profits in 2002 and a rebound of capital outflows (according to our estimates, seasonality-free quarterly data show that the downward trend in Russian capital outflows since end-2000 reversed into their increase in 2002¹⁵). The reduction of the tax burden is unlikely to bring about an automatic decline of the gray economy.

Another major tax reform measure is an attempt to improve taxation of the oil and gas sector. Extraction tax, introduced in 2002, brought about an increase of resource payments by 1.5 of GDP as compared to 2001. Our analysis showed that the tax reform strengthened the relation between the tax burden on the oil sector and the world oil prices. Estimated amounts of extraction tax, export duties and profits tax (as compared to the taxes which they substituted) increased at Urals oil prices above US\$21/barrel and declined if prices went below this level.

On the whole, the reform reached some of its initial objectives in terms of production. The tax burden was somewhat re-distributed (at least for the high oil prices) from the processing

¹⁵ Obzor ekonomicheskikh pokazatelei. Ekonomicheskaya ekspertnaya gruppa, april 2003.

sectors to the mining ones; the tax system became more equitable; the wedge on fair taxpayers was weakened; and many discretionary exemptions were eliminated. The most distorting “turnover” taxes were eliminated, and the profit tax base is now measured better. The complete estimates of the lower post-reform tax burden are given below.

However, the reform had major adverse effects, too: it greatly weakened the encouraging impact of taxes on investment inflows. As was shown above, given the possibilities for easy and safe tax evasion in combination with illegal capital outflows, nothing but an exemption for investments can make domestic investments a competitive alternative to outflows. Its elimination made investments in the Russian economy much less attractive, although the reform essentially did not drain the companies’ investment resources. We think the dramatic deceleration of investment in fixed assets in 2002 was primarily caused by elimination of the exemption for investments.

DIRECT EFFECTS OF THE TAX REFORM

In addition to direct effects (changed rates and tax bases), the reform had several major indirect implications. Reforms of any given tax affected primarily the distribution of added value and, therefore, the sizes of tax bases, either of the reformed tax itself or other taxes as well. Besides, the magnitude of tax evasion varied during the reform. Let us have a closer look at such cross-effects for the personal income tax and social tax.

Table 8. GDP by primary revenues (%)

	2000	2001	2002
Labor remuneration	40.2	42.7	46.1
Wages	31.5	34.7	37.5
o/w: official	20.4	23.6	26.0
gray	11.1	11.1	11.5
Contributions	8.7	8.0	8.6
Net taxes on production and import	17.1	15.4	13.6
Gross profit of the economy and gross mixed income	42.7	41.8	40.2
<i>Memorandum: share of gray wages</i>	<i>35.2</i>	<i>32.0</i>	<i>30.6</i>

Source: authors' estimates.

The reform of these taxes was accompanied by a rapid increase of wages. The average wage went up by 20% in real terms in 2001 (and by another 16% in 2002). Wage increases were much ahead of labor productivity growth in the same period, as is shown by a larger share of the total wage in GDP. The official (“white”) wages went up from 20% of GDP in 2000 to 24% in 2001 and 26% in 2002 (see Table 8).

The increase of official average wage could be caused by:

- growth of average¹⁶ labor productivity;
- reduction of the share of “gray” wages;
- use of some gains from the reduced tax burden for wage increases;
- larger demand for labor, i.e., the changed situation on the labor market.

The first factor cannot fully explain the wage increase because its share in GDP became much larger. The last line in Table 8 helps estimate the extent of “unshadowing” wages. One can easily see that this factor, too, accounts for only some increase of wages. In order to measure the impact of each factor accurately, we built and studied a model based on the economic theory, which describes corporate demand for labor.

Let us look at a company whose produced added value Y is a factor of labor L and capital K as given in the Cobb-Douglas function:

$$Y = \theta L^\alpha K^\beta,$$

where θ , α , β are some fixed parameters of the company’s production.

We will now see how the hiring of an additional worker affects the company’s profit. With a fixed capital, this worker will produce added value

$$dY = \alpha \frac{Y}{L},$$

and this will increase net profit in the current period by dP :

$$dP = (1-\pi) \left\{ (1-\eta) \alpha \frac{Y}{L} - w \right\},$$

¹⁶ We mean in this case labor productivity growth in an economy with a fixed structure of sectors. The last factor in the list actually reflects the change in the GDP structure, i.e., a change of different sectors’ shares in GDP because of price changes, such as the increase of world prices on Russian exports, ruble appreciation, etc.

where π is the (effective) profit tax rate, η is the effective rate of taxes proportionate to the added value and of the turnover taxes (relative to the added value), w is one worker's wage (gross of benefits).

If the additional net profit from the hiring of one worker is positive, the economy will report higher demand for labor. Given the assumption that labor supply in the economy is fixed, this will push wages up until the balance is set:

$$(1-\eta) \alpha \frac{Y}{L} - w = 0$$

or

$$\omega = (1 - \eta) \alpha,$$

where $\omega = \frac{wL}{Y}$ is the share of wage in the added value.

This condition will help analyze the effect of taxes on wages. If the size of “turnover” taxes increases by $\Delta\eta = \eta_2 - \eta_1$, the share of wage in the added value will increase by

$$\Delta\omega = - \frac{\omega}{1-\eta} \Delta\eta \quad (1)$$

In this case, the change of the profits tax and taxes proportionate to the payroll in this simplified model will not affect the share of wage in the added value. In particular, wages paid directly to employees should go up as the rate of the payroll tax goes down.

Looking back at the effect of the personal income tax and social tax reform, we might conclude that the increase of wages as a share of GDP might have been caused by the lowering of the “turnover” taxes and/or the changed situation on the labor market. A larger share of wages in the structure of labor remuneration should be explained by the lowering of the social tax, while the changed relation of the official and “gray” wages was a result of “unshadowing.”

By putting values in equation (1) we will see that the labor remuneration-to-GDP ratio increased by 0.8 percentage points as a result of lowering of taxes on foods and import. The effect of lowering the social tax and “unshadowing” is computed as the difference between a proportional increase of all elements of labor remuneration and the actual values. Estimates are given in Table 9.

Table 9. Growth factors for wage costs (% of GDP)

	Wage costs	Official wage	Gray wage	Contributions
Total	2.5	3.2	0.0	-0.7
Pre-reform payroll taxes and personal income tax rate		1.3	0.7	0.5
From reduction of the tax burden on payroll fund and “unshadowing”		1.9	-0.7	-1.3
<i>From the increased wage costs due to the lowering of taxes on production and import</i>				
Total	0.8	1.0	0.0	-0.2
Pre-reform payroll taxes and personal income tax rate		0.4	0.2	0.2
From reduction of the tax burden on payroll fund and change of the personal income tax rate		0.6	-0.2	-0.4

By adding up these estimates, we will come to the conclusion that the reported increase of the official wage by 3.2% of GDP in 2001 might be itemized as:

- lowering of “turnover taxes” (effect: 0.4% of GDP);
- lowering of the social tax (effect: 1.3% of GDP);
- “unshadowing” of wages (effect: 0.7% of GDP);
- increase of wages unrelated to the tax reform but caused by structural changes in the economy, including the changed situation on the labor market (effect: 0.9% of GDP).

These estimates prove that the results of the tax reform should not be discussed only from the perspective of changing and re-distributing the tax burden but also in terms of its effect on economic agents’ income. In particular, changes in taxation in 2001 brought about a higher wage-to-GDP ratio by 1.5 percentage points (from its total increase by 3.2 percentage points). This means that the tax reform accounts for about one half of the gap between the wage increase and labor productivity growth.

There is a common view that the lowering of tax rates does not endanger fiscal revenues because it is fully offset by the “unshadowing” of business. Indeed, the expansion of the tax base in the course of the tax reform was an important idea. To what extent did these hopes materialize?

The optimistic assessment of the reform implications for fiscal revenues is based mostly on the personal income and social taxes. The roles of different factors in changing the bases of these taxes, which we derived, also make it possible to assess their contribution in the changed tax collections (see Table 10) .

Table 10. Changes of tax collections in 2001, itemized by factor (% of GDP)

Taxes	Total	From:					
		Changed rate	“Unshadowing”	Indirect effect of reform:		Situation on the labor market	Elimination of exemptions for the army
				social tax	turnover taxes		
Social	-0.6	-1.7	0.2	0.4	0.1	0.3	0.0
Personal income tax	0.4	-0.1	0.1	0.1	0.1	0.1	0.2
<i>Total</i>	<i>-0.2</i>	<i>-1.8</i>	<i>0.3</i>	<i>0.5</i>	<i>0.2</i>	<i>0.4</i>	<i>0.2</i>

Source: authors’ estimates.

According to the estimates in Table 10, the direct effect of reforming the social and personal income taxes (by lowering their average rates) is in the fiscal losses of 1.8 of GDP in 2001 as compared to 2000. Even if we assume that the full “unshadowing” of wages is related to the lowering of tax rates, the effect of this reform offset less than one half of these losses (0.8% of GDP). The main role was played not so much by “unshadowing” (which provided additional collections of only 0.3% of GDP) but the re-channeling of funds, that were received from the lowering of the social tax, to wage increase. Growth of collections by another 0.8% of GDP is accounted for by the lowering of “turnover” taxes, elimination of exemptions from the personal income tax for the army (it did not increase the burden on the private sector) and the changed situation on the labor market.

A broader analysis is based on the assessment of the total change in the base of the main taxes in 2001-2002 (these taxes are broadly interpreted as SNA-consistent, i.e., include the “gray” operations) and their effective rates (see Tables 11-13). The latter depend on the tax legislation, on the one hand, and on the extent of tax evasion, on the other hand. All taxes were categorized into six groups by their bases (as before, with a share of approximation): (1) taxes on capital (except the profits tax); (2) profits tax; (3) taxes on export; (4) taxes on wage; (5) taxes on private domestic demand; and (6) taxes on natural resources. Net profit of the economy by SNA was taken as the base for group 2, export of goods for Group 3, wage (including the “gray” component) for Group 4, household consumption and accumulation of

fixed capital for Group 5. Changes of the tax base for groups 1 and 6 were assessed on the basis of changes in the fixed assets and extraction of resources.

Table 11. Tax revenues grouped by tax bases (% of GDP)

Tax base	2000	2001	2002	Changes (2002 vis-a-vis 2000)
1. Capital	3.0	2.4	2.1	-0.8
2. Profit	5.4	5.6	4.2	-1.2
3. Export of goods	2.3	2.5	1.8	-0.5
4. Wages	9.8	9.6	10.8	1.1
5. Private domestic demand	10.5	11.2	10.8	0.3
6. Use of natural resources	3.0	3.1	4.3	1.3
<i>Total</i>	<i>33.9</i>	<i>34.3</i>	<i>34.0</i>	<i>0.1</i>

Table 12. Tax bases by type

	2000	2001	2002	Relative change
<i>% of GDP</i>				
Net profit by national accounts	22.7	23.3	22.1	-3
Export of goods	40.5	34.3	30.9	-24
Wages (including gray)	31.5	34.7	37.5	19
Private domestic demand	62.0	66.5	67.8	9
<i>Growth by 2000 vis-a-vis GDP growth, %</i>				
Capital	100	96	93	-7
Natural resources	100	98.8	100.3	0,3
<i>Aggregate total tax base</i>	<i>100</i>	<i>104</i>	<i>106</i>	<i>6</i>

Table 13. Effective rates of main taxes (e %)

	2000	2001	2002	Relative changes of effective rate
Capital	100.0	83.0	77.5	-22.5
Profit	23.9	24.2	19.1	-20.0
Export of goods	5.6	7.3	5.8	4.5
Wages	31.0	27.6	28.9	-6.8
Private domestic demand	16.9	16.8	15.9	-5.9
Natural resources	100.0	104.2	141.7	41.7
<i>Total</i>	<i>100.0</i>	<i>97.3</i>	<i>94.9</i>	<i>-5.1</i>

Source: authors' estimates.

The derived values show a dramatic decline of effective tax rates on capital and profit and an even more dramatic increase of rates on resources. It should be borne in mind, though, that

the upward trend for the resource tax rates would have been more modest at the “normal” oil prices. Despite the larger withholding of the royalty, it remains at a very low level.

We then itemized the reported change of tax collections in 2001-2002 by factors (see Table 14). Given the prudential assessment of some items in the table (because of errors in measuring some SNA items), the aggregate values are sufficiently viable. The direct effect of the reform (change of effective rates) was related to the lowering of “turnover taxes,” UST rates and the profits tax, which was partially offset by the higher extraction tax. The indirect effect was in modifying the measurement of the tax bases, on the one hand, and in the implications which the reform of some taxes had for the economic base of other taxes (e.g., the lowering of the “turnover” taxes and UST resulted in a broader base of the profit tax and wage). As we add up all effects that could be treated as the results of the tax reform, we will see that the reform has broadly pushed tax collections down by 1.6% of GDP. If we further subtract the increase of the tax burden financed from the budget (introduction of the personal income tax for the army), the integrated effect for the private sector is assessed at 1.8% of GDP in terms of lowering the tax payments (see Table 15). In general, our estimates show that the aggregate effective rate of taxation went down by 5% in 2002 as compared to 2000.

Table 14. Contribution of the main factors in changes of tax revenues in 2002 vis-a-vis 2000 r. (% of GDP)

Tax base	Effect of base			Effect of rate			
	Total	Independent changes	Indirect effect of reforms	Total	Direct effect of reforms	“Unshadowing”	Indirect effect of reforms
1. Capital	-0.2	-0.2		-0.6	-0.6		
2. Profit	-0.1	-0.1	-0.1	-1.1	-0.6	-0.4	-0.1
3. Export	-0.5	-0.5		0.1	0.1		
4. Wages	1.8	1.6	0.2	-0.7	-1.5	0.7	0.2
5. Private domestic demand	1.0	1.0		-0.6	-0.6		
6. Use of natural resources	0.0			1.3	1.3		
<i>Total</i>	<i>1.9</i>	<i>1.8</i>	<i>0.1</i>	<i>-1.8</i>	<i>-2.1</i>	<i>0.3</i>	<i>0.1</i>

Table 15. Effect of reform for the private sector (%)

Direct	-2.1%
Indirect	0.0%
“Unshadowing”	0.3%
<i>Total</i>	<i>-1.8%</i>

The effect of reforms was compensated by the structural changes in the economy, which resulted in expansion of the aggregate tax base. The main underlying reasons were the decline of net exports and an increase of the share of wages in the distribution of primary income (it has a heavier burden than other bases). Thus, the relief of the burden on the private sector as a result of the reform came to be “veiled” by its increase by the same size due to other factors that are unrelated either to the reform or to the private sector.

In our view, the next steps in the tax reform (complete elimination of the “turnover” taxes in 2003; elimination of the sales tax and lowering of VAT in 2004) will reduce the direct tax burden by about 2.5% of GDP, to be partially offset by the increased collections (1% of GDP) due to the tax base expansion. Besides, a decline of tax collections might be expected as they come to be consistent with the assessed tax liabilities.

The lowering of the tax burden on the private sector by a few percentages of GDP might be viewed as a fairly tangible result of the tax reform by some analysts, while others might think it is clearly insufficient. I think this discussion is not meaningful because it is based on a wrong assumption that the tax burden has a strong impact on growth. Our fundamental position is the following: the results of the tax reform should be discussed from completely different perspectives. The main focus should be on the distribution of the tax burden, the encouraging effect of the tax system and the distributionary effects. If viewed from this perspective, the tax reform should be judged as successful in a limited way. Elimination of the “turnover” taxes and a slight increase of taxes on the oil sector should be scored as its achievements. Redistribution of the burden was much weaker than is necessary for curing the “Dutch disease.” However, given the strong oil lobby, it could be viewed as a meaningful success, too. The distorting effect of the tax system and its unfairness were both mollified. At the same time, elimination of an exemption for investments seems to be a grave mistake because it undermined incentives for investing in the Russian economy.

It is our firm belief that the next stage of the tax reform should begin with a step back, i.e., the exemption for investments should be re-introduced. The key objective of the reform is a truly powerful shift of the tax burden from the processing sector to the mining one. The purpose of VAT reduction is not completely clear because this measure relieves the burden on consumers rather than reduces it for producers. It is essential to seek further improvement of tax administration.

The further lowering of the tax rates is unlikely to be offset by structural developments unrelated to the reform, as this happened in 2001-2002. This raises the issue of macroeconomic safety of the policy and puts it to the forefront. We should emphasize that the decisions on the further reduction of the tax burden might very well ruin the main achievement of the post-crisis development, i.e., a balanced budget, unless these decisions are coupled with adequate measures to cut government expenditures.

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