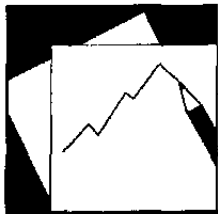


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Reforming Tax Systems: Experience of the Baltics, Russia, and Other Countries of the Former Soviet Union

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IMF Working Paper

European II Department

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Abstract

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Starting in the early 1990s, the Baltics, Russia, and other (BRO) countries of the former Soviet Union initiated tax reforms that varied widely at the later stages. Recently, some of the BRO countries, basing decisions on the proposition that lowering of the top marginal income tax rate would significantly benefit economic development and increase tax compliance, have initiated a new stage of tax reforms. This paper reviews country experiences and suggests that (i) overall, there seems to be little evidence of a substantial improvement in income tax revenues resulting simply from a reduction in the top marginal tax rates, and (ii) in the BRO countries, the elasticity of the behavior of economic agents, in terms of labor supply, saving, and investment, with respect to income tax rates is not large, and a reduction of the existing income tax rates is unlikely to lead to a notable expansion of economic activity.

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I. INTRODUCTION

In early 1990s, after gaining independence, the Baltics, Russia, and Other (BRO) countries of the former Soviet Union started the transition process to a market economy. Large-scale structural reforms were initiated in virtually all sectors of their economies, including the fiscal operations of governments. These structural changes as well as fast-changing external economic conditions required fundamental tax reforms that would allow the governments to maintain fiscal stability and, at the same time, provide a framework for economic efficiency and equity.

Recently, some of the BRO countries either have initiated or intend to initiate income tax reforms that mainly focus on substantial reductions in tax rates. Such initiatives are often based on the proposition that lowering the top marginal income tax rate will significantly affect economic development. Also, there are arguments that reducing the marginal tax rate may reduce the potential benefit from tax evasion and thus enhance compliance and serve to better integrate the shadow economy in the formal economy. For these reasons, proposals for reductions in rates have often assumed that there would be little or no revenue loss from the reforms.

This paper reviews the tax reform experiences in BRO countries during the 1990s. In particular, it aims to explain the motivation for tax reforms, describe the general characteristics of reform design and implementation as well as difficulties encountered during reforms, and provide readers with an understanding of the outcomes of these reforms in selected BRO countries. A key issue is whether reductions in tax rates lead to improved revenue performance (the so-called "Laffer effect"). The paper will focus on tax policy reforms of major revenue sources: the value-added tax (VAT), personal income tax (PIT), and enterprise profit tax.

The period that is of particular interest covers the mid-1990s to 2000, when most BRO countries introduced substantial changes in their tax systems, with many of them introducing new tax codes. While recognizing that tax policies and tax administration are interrelated and that tax administration plays a crucial role in successful tax policy implementation, the paper does not aim to address in detail issues related to tax administration.

The paper consists of three main sections, of which Section II outlines the major characteristics of a good tax system, focusing on the issues of adequate revenue-generating capacity, efficiency and equity, tax burden, and composition of taxes as well as summarizing IMF general recommendations on the design of tax systems. In Section III, the tax policy reform experiences of developing and transition countries is examined with a focus on constraints to reforms and major characteristics of reforms, including objectives and scope of reforms. The final section concludes by assessing the Laffer-curve validity for BRO countries.

II. THEORETICAL CONSIDERATIONS FOR TAX POLICY REFORM

A. Characteristics of a Good Tax System

When speaking about a good tax system, we think of a system that allows a country's authorities to implement tax policy in the most efficient way. The main characteristics of such a system generally include the provision of adequate revenue-generating capacities, achievement of economic efficiency, provision of equity, an optimal tax mix, simplicity, effective tax administration and transparency.

In practice, taxes that are necessary to finance government operations create distortions to decisions of economic agents thus affecting the incentives to produce and consume. When levied, taxes create both income and substitution effects and lead to efficiency losses. The tax systems are considered efficient when they achieve revenue targets with minimum negative effect on economic efficiency.

The characteristic of providing equity relates to the issue of equity in taxation or fairness in sharing the burden of tax. Two types of equity are considered: vertical equity and horizontal equity. **Vertical equity** in taxation is typically taken to mean that people with higher income (or consumption or wealth) should be taxed more heavily, and accordingly, that taxation is "progressive". **Horizontal equity** in taxation is generally taken to require that equals (people in like circumstances) should be treated equally. Thus, according to this criterion, households with similar income and family circumstances should pay roughly equal taxes.

Tax systems are also characterized by the composition of taxes or the so-called tax mix, with taxes generally divided into direct and indirect taxes. Many recent proposals on the change in tax mix have involved the reduction in income taxation and introduction of, or growing reliance on, a broad based consumption tax like the VAT, which is seen as less distortionary. However, it should be noted that the net efficiency effects of a tax mix change are difficult to assess and often ambiguous because of imperfect knowledge of key elasticities in the labor and capital markets².

Simplicity is another important consideration when designing tax systems. Tax systems that are excessively complicated undermine tax administration due to difficulties in enforcing such a system, and can lead to worsening of taxpayer compliance. In cases where tax systems include taxes with a multiple rate structure and numerous deductions and exemptions, a tax administration with limited resources may have significant difficulties in preventing tax evasion.

² Taxation towards 2000. Ed. by J. Head and R. Krever

Box 1. IMF Recommendations on Tax System Design

The IMF has provided input into the design of tax reforms in many transition and developing countries, and generally recommended that tax systems have the following characteristics³:

- Heavy reliance on a broadly-based sales taxes, such as VAT, preferably with a single rate and minimal exemptions, and excise taxes levied on petroleum products, alcohol, tobacco and a few items that are considered luxuries.
- No reliance on exports duties, which inhibit international competition, or on small nuisance taxes, administration of which is not effective.
- Import taxation at as low levels as possible, with a limited dispersion of rates to minimize effective rates of protection.
- An administratively simple form of personal income tax, with limited deductions, a moderate top marginal rate, an exemption limit large enough to exclude persons with modest incomes, and a substantial reliance on withholding.
- A corporate income tax levied at only one moderate-to-low rate aligned with the top personal income tax rate, with depreciation and other non-cash expenditure provisions uniform across sectors and minimal recourse to sector or activity-specific incentive schemes.

The effectiveness of tax systems depends not only on the design of tax policies but also on effectiveness of tax administration. Once governments have their tax policies appropriately designed, the tax administration plays the main role by securing the effective implementation of these policies for achieving the objectives.

Tax system design should also address issues of its transparency and governance. Tax laws, regulations, and other documents, including explanatory materials, should be accessible to the general public and be kept up-to-date. Changes to tax legislation should be given sufficient publicity so that taxpayers understand how they might be affected and there should be mechanisms in place whereby taxpayers can have their queries answered. Also, administrative discretion in applying tax laws must be limited. Negotiation of tax liabilities between officials and taxpayers should not be the general rule, both because of nontransparency of such practices and the potential for corruption⁴.

³ Tax policy handbook. Edited by Parthasarathi Shome. IMF, 1995.

⁴ Manual on Fiscal Transparency, FAD, IMF.

B. Assessment of Tax Reforms

The experience of many tax reform initiatives suggests that the following three general characteristics may be useful in comparing and assessing tax reform efforts in terms of implementation and outcomes: (i) objectives of reforms, (ii) scope of reforms, and (iii) breadth of reforms.

Tax reforms may be designed to achieve a number of **objectives**, for example to: (i) increase tax yields, in which case they are intended to be revenue enhancing, (ii) simplification of the tax system, while being revenue neutral, (iii) target specific equity objectives, where tax equity is understood to involve both vertical and horizontal dimensions, (iv) reduce the scope for tax-induced barriers to more efficient resource allocation, and (v) influence the flow of resources to particular economic sectors or activities of priority to governments.

In terms of **scope**, tax reform may be comprehensive in the sense that it is intended to encompass most of the important revenue sources and often involves adoption of new tax codes, or it may be partial, wherein reform efforts are confined to one or two significant components of the tax system.

Regarding the **breadth** of reform, a tax reform may focus on the entire tax system, including institutions for tax administration and compliance, or may be concerned only with changes in tax policy that focus on tax base and rate structure.

There are certain difficulties in measuring success or failure in tax reform programs. In particular, non-revenue objectives like redistribution, promotion of growth, simplification, and improved resource allocation are not so easily quantified. For this reason, the impact of reform upon the revenue-generating capacity of the tax system is probably the most serviceable measure of the tax reform's success.

C. Economic Considerations

As already noted, taxes create distortions in the choices made by producers and consumers. In the case of income taxes, the component levied on wages distorts the choice between the work and leisure and may affect the labor supply. The component imposed on capital income received by individuals distorts their choice between consumption and saving, while the component imposed on enterprises affects investment decisions and may alter the allocation of capital among different sectors of the economy. The allocation of expenditures among different goods may be altered by general consumption taxes and excises. Also, other important channels through which taxes may affect economic efficiency include tax administration and compliance costs and incentives for tax evasion.

In recent years, many developed, developing, and transition countries have been debating tax policy reform proposals that aim to redress distortions created by the tax structures. In particular, proponents of these proposals, often referred to as supply-siders, have claimed that the overall level and structure of taxation have significant effects on economic growth and

incentives of economic agents, as well as the efficiency of resource allocation in the economy. Therefore, a reduction in tax rates will have a substantial impact on the supply and allocation of resources in the economy and will lead to economic growth and increase in tax revenues. This assumes large short-run price elasticity in the behavior of economic agents. Based on this elasticity optimism, some of the proponents of supply-side tax policies proposed the existence of a so-called “**Laffer curve**,” according to which government revenues first rise with tax rates, reach a peak, and then start to fall as tax rates rise to a “prohibitive” range. A reduction of the income tax rates from the prohibitive range is believed to result in an expansion of economic activity and labor participation (Box 2).

Box 2. Conditions for Laffer-Curve Effects

The validity of popular supply-side tax policies for developing countries requires the presence of the following conditions in a given economy:

- Highly price-sensitive labor supply, savings and investment;
- High marginal tax rates that significantly increase tax evasion; and
- Government revenues that have increased significantly in the short run when top marginal income tax rates have been reduced.

It is also believed that an income tax reform may affect revenue performance through the **tax compliance** costs and opportunities for **tax avoidance** and **evasion**. A tax reform that reduces the complexity of the tax system may lead to lower collection costs and may also reduce the costs to individuals of complying with the requirements of the tax laws. Also, reductions in the marginal tax rate may reduce the potential benefit from tax evasion⁵ and a lower potential benefit will lead to reduced evasion activities. However, if the authorities reduce tax enforcement efforts in the belief that the lower tax rates and simplified tax system will automatically lead to reduced evasion, for taxpayer the probability of being detected will fall and the overall net result may leave the level of tax evasion unchanged.

In mid-1980s, the Fiscal Affairs Department of the IMF undertook a study to analyze the relevance of supply-side tax policies to developing countries⁶. The broad conclusion of the study was that the popular supply-side policies which focus on marginal income tax rates alone are of limited relevance to many developing countries where there are many factors that make them different from developed economies. Such factors include the lack of

⁵ Potential benefit from tax evasion is measured as the difference between (i) the amount of tax saved and (ii) the combined value of tax payable and penalties times the probability of being detected by the tax authorities.

⁶ Supply-side tax policy: Its relevance to developing countries. Edited by Ved P. Gandhi. IMF, 1987.

adequate economic infrastructure and low level of labor and capital markets development, high inflationary pressures in the economy, relatively high share of agriculture in total output, large structural unemployment, and high levels of income inequality and absolute poverty, which often make social-oriented policies a priority. The governments of such countries have to concern themselves with objectives other than the efficient allocation of given resources, for example, income redistribution, economic stabilization, or the creation of social and economic infrastructure for economic growth. The view of supply-side tax policy which focuses on broadening the tax base and rationalizing the rates of all taxes so as to remove all tax-related distortions is of greater relevance to such countries.

The effects of taxation on the ability and willingness of economic agents to work, save and invest vary, depending on the base of the tax, the rate structure of the tax and the level of the tax burden. Some studies on developed economies have suggested that the impact of tax policies on labor supply, savings and investment is not substantial. Several studies on developing economies have shown that the structure of taxation can have a major influence on the real sector and that taxation policy can therefore be an important tool for promoting saving, capital formation and economic growth. In the case of **developing** countries, Peter and Kerr (2001) in their research on the impact of tax policy on growth, investment and savings make references to various studies in this field⁷.

For example, Jenkins (1989) examined macroeconomic outcomes in Sri Lanka following changes in the tax structure that shifted the focus from direct taxes to indirect taxes. In the context of these changes, gross capital formation and real GDP growth almost doubled over the period concerned.

An empirical study conducted by Marsden (1990), based on a cross-sectional analysis of 20 countries, compared the selected countries on the basis of lower and higher levels of taxation and their influence on growth rates over a ten year period. In all cases, the countries that imposed a lower effective average tax burden on their populations achieved substantially higher rates of GDP growth than did their more highly taxed counterparts.

Tanzi and Shome (1992) examined the tax regimes in eight Asian economies. They looked at the five most successful economies to see if there was any uniformity in tax mix and tax policy which might help to explain their faster growth, but found no common factors. The authors concluded that the beneficial effects of tax incentives in some countries were dependent on other supporting factors. Similar tax incentives provided in other countries had not yielded the desired results owing to such factors as corruption or rent-seeking activities.

Trela and Whalley (1992) employed a general equilibrium model to evaluate the Republic of Korea's "outward-oriented growth strategy" over the period 1962–1982 and concluded, that

⁷ The influence of tax policy on savings, investment and economic growth in developing economies. *Vasanthi Monsingh Peter and Ian A. Kerr, Asia-Pacific Dev. Journal, June 2001*

pro-growth tax policies (direct tax reductions and indirect tax exemptions) had made a visible contribution to the country's economic growth.

Studies using pooled time-series/cross-section data for South Asian and East Asian economies (Kerr and Pcter 1998a, 1998b) reveal that the tax-mix variable is an important variable and that there is a significant negative relationship between this variable and savings and capital formation.

While estimating the savings determinants in Columbia, Cardenas and Escobar (1998) pointed out that much of the reduction in Colombian private savings during the period 1970–1994 was due to rises in taxation. Tax revenue as a percentage of GNP was used to measure the influence of taxation on private savings determinants. This coefficient was found to be negative (-0.58) and statistically significant.

For **developed** countries, recent studies on OECD economies that analyze the impact of tax rate reductions on labor, savings, and investment are probably more valuable than the cross-country studies for developing countries because the OECD databases include more comprehensive and reliable datasets than those available for developing countries.

On savings and investment, empirical studies for OECD countries have generally found it difficult to establish a statistically significant and strong relationship between the after-tax real interest rates and savings and investment. The overall evidence suggests that capital income taxation reduces savings and investment, but not very much. For example, results from one panel study of 21 OECD countries suggested that the elimination of the average capital tax rate of 40 percent would raise private savings by about 0.5 percent of GDP and a study of investment in seven major OECD economies did not support any significant relationship between the cost of capital and investment⁸.

Regarding the response of labor supply to changes in taxation, the elasticity of labor supply may vary depending on gender, marital status, and whether the individuals are primary earners or secondary earners. Some estimates suggest that tax elasticities for women are generally large, around 0.5 or even higher, while those for men are negligible. A study by the US Congressional Budget Office (1996) used these estimates to weigh together the various elasticities and for the US arrived at an elasticity of between 0 and 0.3 percent.

In sum, from the empirical literature and tax reform studies it seems that there are no universal laws that can be discovered concerning the influence of the tax mix and tax policies on a country's economic growth and development. Appropriate tax mix and policies differ from one country to another, depending upon the economic, social and political circumstances of the country. While there has not been unanimity on the issue, most of the

⁸ Taxation and economic performance. OECD Economics Department Working Papers, No. 176

empirical studies reveal an inverse relationship between the level of direct taxation and the rate of savings and capital formation.

III. EXPERIENCE FROM DEVELOPING AND TRANSITION COUNTRIES

A. Practical Issues in Tax Reform

Most developing and transition countries have implemented tax reforms under difficult economic, social, and political conditions. The establishment and successful implementation of effective and efficient tax systems encountered several barriers emerging from the structure of economies, low growth rates, decline in output and weak institutions.

In many **developing** countries, governments may find it difficult to impose and effectively collect certain taxes with a given structure of the economy. This is particularly true for countries where the economy is characterized by a large share of agriculture in total output and employment, existence of a large informal sector, and a small share of wages in total national income. Such characteristics reduce the scope for effective implementation of direct taxes like the personal income tax and also reduce the possibility of achieving high effective tax rates. Another major obstacle for effective implementation of tax reforms in developing countries has been inadequate tax administration capacity. The lack of well-trained personnel, resources to pay good salaries and provide necessary equipment, and adequate taxpayer education results in an inefficient tax administration. As a consequence, countries often develop tax systems characterized by too many small tax sources, heavy reliance on foreign trade taxes and relatively insignificant use of personal income taxes.⁹

For most **transition** countries the contraction in output in the early stages of transition led to substantial decline in the traditional tax base (i.e. industry) and as a result government tax revenues fell sharply. Though other sectors of economy like agriculture experienced less contraction and started to recover earlier, and the share of private sector has been growing, these sectors did not contribute significantly to tax revenues in the past because of tax policy and tax administration weaknesses, including various exemptions that eroded the tax base and a failure to bring a large portion of informal sector into the tax net. In terms of institutional and administrative constraints, the transition economies faced a number of challenges: (i) the institutional capacity of the tax administration did not improve much, while the scale and functions necessary for the market economy increased compared to a planned economy; (ii) planned economies typically were concentrated in a state-owned industrial sector, while the transition to a market economy assumed more taxpayers and growing share of private sector; (iii) unfamiliarity of tax officials and taxpayers with the new system; (iv) limited resources for capital costs, like computer equipment, and training; and (v) old traditions and attitudes—the tradition of negotiation and bargaining in taxation needed to be broken and taxpayers' attitudes towards tax evasion and voluntary payments changed.

⁹ Tax policy for emerging markets: Developing countries. Vito Tanzi and Howell H. Zee. IMF WP/00/35

B. Characteristics of Successful Reforms in Developing Countries

In 1970s and 1980s, many developing countries made repeated attempts to fundamentally reform their tax systems. A review of these reform initiatives and their outcomes may reveal rich worldwide experience and provide some lessons for those countries which are contemplating tax reforms. There have been several studies on tax policy reforms in developing countries which covered various aspects of the reforms. The results of one particular research project funded by the US Agency for International Development and edited by Malcolm Gillis (1989) present a comprehensive review of tax reform initiatives in more than 20 developing countries. Below we summarize some evidence and lessons from these reform experiences¹⁰.

In terms of the **objectives** of reforms, revenue performance has been one of the principal criteria employed in judging the success or failure of tax reform programs. If judged by this criterion, tax reform efforts have been largely successful in most of the developing countries. During the period of 1950–1980, when major tax reforms were implemented in developing countries, the typical share of taxes in GDP increased from 11 percent to around 18 percent. A major driving force for tax revenue increases has been the introduction of VAT. More generally, most of the increased revenues from tax reform have come not from direct taxes on income and wealth, but from indirect taxes, including the VAT.

As regards the **scope** of tax reforms, the experience from developing countries is rather mixed and does not allow to derive conclusive lessons on the relative merits of comprehensive versus partial reforms. Some evidence shows that a greater proportion of partial reforms have been successful. For example, after examining the tax reform measures in developing countries over the past few decades, Goode (1990) claimed that a series of incremental improvements in tax systems is better than a once and for all comprehensive reform. This is explained by the fact that the tax problems are highly complex, objectives are often conflicting and tax administration is generally weak in these economies.

Regarding the **breadth** of reforms, the experience of various tax reform programs in developing countries suggests that successful tax reforms require fundamental changes in the tax system, both in its policies and administration. It seems that changes in tax bases and rates alone were not sufficient, and that elements in the tax system that needed most attention in developing economies were tax administration and tax compliance.

Factors contributing to success of the reforms varied widely, but several may be considered particularly significant, and amongst them the first three seem to be particularly applicable to BRO countries:

¹⁰ This section draws in particular on Gillis (1989). Also, see “Taxation in developing countries”, R. Bird and O. Oldman, “Tax policy for emerging markets”, V. Tanzi and H. Zee

- **First, the chances for successful tax reform were considerably enhanced when reform efforts went well beyond mere changes in tax policies**, to fundamental reform of the broader tax system that also involved measures to simplify tax administration and improve compliance.
- **Second, a worldwide trend in taxation has been observed in the past two decades: a drift away from high marginal rates of tax and away from fine-tuned tax structures, toward lower and more uniform rates and simpler structures.** Both simplification and rate reduction have worked best where the other is present. Thus we can state that simplification and rate reduction are mutually reinforcing.
- **Third, withholding systems are vital for success in income taxation.** Moreover, income tax reforms that have failed to extend tax withholding much beyond the incomes of civil servants and the very largest business firms have generally led to disappointing results.
- **Fourth, reforms that were successful in terms of revenue performance have also tended to be reforms that have gone furthest in satisfying redistributive, growth, simplification, and resource allocation goals.**
- **Fifth, tax reforms tended to be most successful when they have been needed least.** The chances for successful comprehensive reform tend to be greatest when reform is not initiated in response to a severe short-term fiscal crisis. Introduction of tax reform in response to acute fiscal crisis increases the likelihood that the government will try to implement the reform in the shortest possible period and thus the quality of the design and implementation of the reform may suffer.

C. Reforms in BRO Countries

Starting in the beginning of the 1990s, BRO countries began the transition process to a market economy. Drastic changes in economic and political circumstances resulted in the disruption of trade and a substantial decline in the industrial output and GDP. Though public expenditure was substantially cut, output and tax revenues declined at a faster rate, resulting in severe fiscal imbalances in many of these countries, which in turn led to broad macroeconomic instability. The inherited Soviet-type tax systems, characterized by the dominance of turnover and enterprise profit taxes, could not operate efficiently under the conditions of liberalization of prices and methods of payment, the privatization of state enterprises and increasing share of the private sector in GDP. There was an urgent need to reform both the statutory and the administrative aspects of the tax systems¹¹.

¹¹ O. Havrylyshyn, L. Ebrill, and others, "Tax reform in the Baltics, Russia and other countries of the Former Soviet Union", IMF Occasional paper #182, 1999. This study provides a comprehensive overview of tax policy and tax administration implementation in the BRO countries during the period from 1995 to mid-1998.

Tax reforms in almost all BRO countries started with the overhaul of existing enterprise profit tax (EPT) system and introduction of a personal income tax (PIT), excises and VAT, the latter to replace the turnover taxes. By the mid-1990s, these taxes had already been introduced in most countries. Although the initial implementation of tax reforms was similar in many countries, with a number replicating the reforms initially enacted by the Russian Federation, at the later stages the reforms varied more widely.

Box 3. Tax Revenues from the Oil Sector

The importance of the oil sector in the economies of Russia, Kazakhstan and Azerbaijan has been growing in recent years. Actual tax revenues from the oil sector in these countries, however, have been low compared with major oil exporters. Low tax revenues mainly resulted from infrastructure constraints on oil exports, upheaval in the countries' corporate sectors, weak tax administration, and inappropriate tax structures which emphasized production-based levies and—until recently—export duties. Also, the retention and waste of revenues within the inefficient system of oil transport and refining have lowered the prices received by oil producers and reduced their ability to pay taxes. Reforming taxation of oil production should involve establishing a new, flexible fiscal regime that balances the government's immediate need for revenue against the need for efficient incentives for new investment, along with an effective and nondiscriminatory system of regulation for oil transportation. Recent improvements in the fiscal regime for oil production, in particular in Russia, including new fiscal arrangements (production-sharing agreements and taxation of windfall profits), and the reform of the oil transport and upgrading of refining capacity are likely to allow for more investment, higher output growth, and higher tax revenues in these countries. Improved regulation and increased efficiency of tax administrations, as well as demonstration of sufficient political will to collect taxes from large producers, can also increase revenues.

As mentioned earlier, this paper covers in particular the reforms of VAT, PIT and EPT systems in BRO countries during the 1990s. Appendix I summarizes the changes to the structure of the above-mentioned taxes during the 1990s. Based on the pace and direction of tax reforms, as well as relative success of reform implementation, we can distinguish three groups of countries, plus Russia.

The first group includes Estonia, Latvia, and Lithuania, which can be considered as successful examples of tax reform implementation amongst BRO countries and which managed to adopt new tax systems consistent with best international practices in relatively short period of time and recover tax revenue levels prevailing before transition. It should be noted that starting in the mid-1990s, all three countries' governments' tax policies have been influenced by their medium-term objective of accession to European Union¹².

¹² The accession process requires harmonization of taxation laws with EU directives, in particular harmonization of indirect taxes through the application of minimum excises and a 15% minimum VAT rate.

The second group includes Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Ukraine and Uzbekistan. These countries achieved certain progress in tax reforms in the mid-1990s, but later on faced many challenges in terms of maintaining good tax policies, completing transformation of their tax systems into ones similar to that of developed market economies, and recovering previous tax revenue levels.

Countries in the third group, Belarus, Tajikistan and Turkmenistan, can be considered late or conservative reformers, with a slower overall transition to a market economy, relatively stable tax revenue levels—with the exception of Turkmenistan—and major tax reforms initiated only in late 1990s.

During most of 1990s, Russia implemented relatively few changes to its tax system and only starting in 1999 did the authorities initiate tax reforms that covered all major revenue sources. These reforms were gradually implemented during the next two years making Russia an advanced tax reformer and inspiring similar reforms in some other BRO countries.

VAT reforms

The Baltic countries were among the first BRO countries to introduce a VAT. Unlike other BRO countries, VAT rates in Baltics were initially set at relatively low levels (10–15 percent) although the rates were subsequently raised to 18 percent. Regarding exemptions and preferential rates, all three countries had introduced some exemptions mainly on food items, agriculture and energy sectors, but these were gradually reduced. By 2000, the Baltic countries had VAT revenues of around 8 to 10 percent of GDP, one of the highest ratios amongst BRO countries, and relatively few exemptions from the tax (Table 1).

Table 1. Selected BRO Countries: VAT Revenues (in percent of GDP)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Estonia	7.3	8.9	11.0	10.0	10.1	10.4	8.7	8.5	9.7
Latvia	3.3	6.0	8.6	8.8	9.1	8.7	8.8	8.1	7.8
Lithuania	7.8	6.2	5.2	6.3	7.2	8.7	8.4	8.1	7.6
Armenia	-	5.0	2.7	3.3	3.3	4.9	6.2	6.9	6.5
Azerbaijan	-	8.1	3.3	1.7	3.4	4.1	4.4	4.8	-
Georgia	-	0.5	1.2	1.6	2.3	3.0	4.4	4.4	4.9
Kazakhstan	5.9	3.7	2.5	3.2	3.8	3.5	4.6	4.4	4.4
Kyrgyz Republic	-	4.4	4.3	4.4	5.3	5.6	5.8	4.1	4.8
Moldova	6.7	4.4	3.6	7.0	7.0	9.4	11.1	6.9	7.5
Ukraine	-	11.5	11.4	8.3	7.8	8.1	7.1	6.4	5.6
Uzbekistan	8.6	9.3	5.0	5.7	6.4	7.5	9.4	7.3	7.5
Tajikistan 1/	-	-	-	-	1.7	1.5	1.9	2.3	2.5
Russia	10.4	6.7	7.0	6.4	7.1	6.9	6.2	6.0	6.5

Source: Country authorities, International Monetary Fund Staff Estimates.

1/ Data is not available for Belarus and Turkmenistan; only partial data is available for Tajikistan.

Table 2 below summarizes the estimates on VAT efficiency in BRO countries and shows that while the Baltics had lower VAT statutory rates compared to most of the other BRO countries, they also had the highest effective tax rates (computed as actual VAT collections divided by VAT base) and tax efficiency rates (computed as effective rate divided by VAT statutory rate), demonstrating the relative strength of VAT administration in the Baltics.

Table 2. Selected BRO Countries: VAT effective rates (TRe) and tax efficiency (TE), Percentage

	1997		1998		1999		2000	
	TRe	TE	TRe	TE	TRe	TE	TRe	TE
Estonia	11	63	10	55	10	54	11	60
Latvia	10	58	11	61	10	56	10	55
Lithuania	11	62	11	58	10	56	10	53
Armenia	6	28	8	38	8	41	8	39
Azerbaijan	6	29	5	25	6	28	6	29
Georgia	5	23	4	22	4	22	5	27
Kazakhstan	5	26	6	30	6	32	8	42
Kyrgyz Republic	13	67	10	49	8	40	11	55
Moldova	15	76	17	84	12	58	10	52
Russia	8	42	7	37	6	30	6	32
Ukraine	12	58	10	51	10	51	10	48

Source: Author's own estimates.

Countries in the second group introduced VAT in 1992, at rates mostly set at 28 percent (in case of Uzbekistan 30 percent) and with exemptions for basic foodstuffs. During the next two years, the VAT rate was reduced to 20 percent and some countries, including Georgia, Kazakhstan, Moldova and Uzbekistan, introduced lower preferential rates for certain foodstuffs rather than eliminating exemptions to compensate for loss in revenue. Starting in the mid-1990s, the countries in this group implemented substantial changes to their VAT systems by moving them to accrual basis and invoiced-based determination of liabilities. Although by the late 1990s, most of these countries had attempted to reduce the number of exemptions (Uzbekistan increased the standard VAT rate back to 20 percent), most still had VAT exemptions and preferential rates for either agriculture sector related activities and/or energy sector. Regarding VAT efficiency rates for countries in the second group, those have ranged from 20 to 70 percent and, with the exception of Ukraine and Moldova, showed some improvement during the period under consideration.

Russia, Belarus, Tajikistan and Turkmenistan can be considered as slow reformers in terms of changes implemented to their VAT systems. They were the last ones amongst BRO countries to move from origin to destination principle for CIS trade as well as from gross margin taxation to credit/invoice methods. The other three countries in the group have tended to follow Russia's policies regarding tax rates and exemptions. This has been true in particular for Belarus, where tax policies have been guided by the Union agreement with Russia which required harmonization of tax systems of the two countries. Only in the late

1990s did countries in the third group initiate major changes to their tax systems. In particular, Tajikistan and Russia prepared and started to implement new tax codes which modernized their VAT systems and removed some exemptions. In terms of VAT efficiency, Tajikistan had the lowest VAT efficiency rates at below fifteen percent, and Russia's VAT efficiency seemed to be improving in the late 1990s.

A notable feature of VAT systems in the countries of the second and third groups, which are members of Commonwealth of Independent States (CIS), was the application of the origin principle for intra-CIS trade. Most countries moved to the destination principle in 1997-98, while Russia stayed on origin principle until 2001 with the exception for trade in crude oil and natural gas and all trade with Belarus, where it still applies the origin principle.

PIT reforms

In terms of personal income taxation, all three Baltic countries have had relatively few major amendments to their tax systems. At the beginning of 1990s, they had progressive income taxes with multiple rates ranging from 15 to 35 percent, which by the mid-1990s were reduced and set at single rate of 26 percent in Estonia, 25 percent in Latvia and 33 percent in Lithuania. The personal income tax systems of the three countries and in particular that of Lithuania have very few exemptions and deductions. While performance of income tax revenues has been varying amongst the three countries, there has been a general growth trend compared to the start of transition and by end-2000, income tax revenues, with the exception of Latvia, amounted to around 8 percent of GDP (Table 3).

Table 3. Selected BRO Countries: PIT Revenues (in percent of GDP)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Estonia	7.0	8.2	7.9	8.7	8.3	8.1	8.5	8.7	7.8
Latvia	2.7	3.6	4.6	5.1	5.4	3.8	4.4	4.7	4.3
Lithuania	5.7	5.0	5.4	5.4	6.6	5.1	8.0	8.5	7.8
Armenia	-	1.6	1.2	1.3	1.3	1.8	1.6	1.9	1.4
Azerbaijan	-	2.4	1.5	1.1	1.6	2.1	2.5	2.7	-
Georgia	-	0.2	0.3	0.6	0.8	1.1	1.7	1.9	1.8
Kazakhstan	2.5	2.4	1.8	2.0	2.2	2.4	1.7	1.8	2.0
Kyrgyz Republic	-	1.3	1.9	1.8	1.2	1.0	1.2	1.1	1.3
Moldova	1.8	1.6	1.7	2.5	2.5	2.8	2.2	1.6	1.5
Ukraine	-	2.0	3.0	2.9	3.3	3.5	3.5	3.4	3.8
Uzbekistan	2.5	2.8	2.6	2.8	3.6	4.0	4.0	4.1	3.6
Tajikistan 1/	-	-	-	-	1.1	1.2	1.0	1.1	1.2
Russia	2.3	2.6	2.8	2.4	2.6	3.1	2.6	2.4	2.5
Unweighted average	3.5	2.8	2.9	3.1	3.1	3.1	3.3	3.4	3.2

Source: *Recent economic developments, IMF*

1/ Data is not available for Belarus and Turkmenistan; only partial data is available for Tajikistan.

At the early stage of transition, personal income tax systems in the second group of countries maintained a progressive rate structure with the number of brackets ranging from three to seven and tax rates ranging from 10 to 60 percent. Initially, all countries had numerous exemptions and deductions from PIT that included various benefits, in-kind allowances and interest income, however, later on they initiated changes to their PIT systems with the view of base broadening and simplification of rate structures. It should be noted that numerous alterations to PIT systems in the countries of second group did not result in substantial changes of PIT revenues in terms of GDP, mostly because of low compliance rates and remaining exemptions. At end-2000, this revenue source amounted to between one and two percent of GDP, with the exception of Ukraine and Uzbekistan which had substantially higher statutory rates. In 2001, Armenia, Moldova and the Kyrgyz Republic made further reductions in their PIT top marginal rates.

Countries in the third group, Belarus, Tajikistan and Turkmenistan, have implemented relatively few changes to their PIT systems. Tajikistan, which had the highest PIT top marginal rate set at 60 percent, reduced it to 40 percent in mid-1990s and then increased to 47 percent later on. Belarus had as many as eight income tax brackets with rates ranging from 0 to 50 percent and maintained its PIT system almost unchanged till the late 1990s. Turkmenistan eventually settled on a PIT system with multiple rates ranging from 8 to 25 percent. For this group of countries PIT revenues did not comprise a major revenue source. It should be noted that in 2002 Tajikistan reduced the PIT top marginal rate to 20 percent. Recent PIT reforms in Russia are summarized in Box 4 below.

Box 4. Recent PIT Reforms in Russia

Russia's PIT system that was introduced in the early 1990s remained almost unchanged until 2000. The system did not perform well and PIT revenues averaged around 2.5 percent of GDP during this period. The new tax code adopted in 2000 included a major modification to the taxation of individuals. In particular, effective beginning of 2001, a flat tax with 13 percent rate replaced the three-bracket progressive tax system with top marginal rate of 30 percent and there was a reduction in the number of deductions. This did not, however, represent a significant lowering of the average effective rate, which was estimated to be 14 percent prior to reform. The PIT revenues in 2001 amounted to 2.6 percent of GDP compared to 2.5 percent of GDP in 2000. The slightly improved revenue performance that followed a substantial reduction in PIT top marginal rate has led to a perception that there is a Laffer curve effect in Russia. However, there were certain factors that could explain improved revenue performance: tax reform also introduced a change in revenue sharing arrangements between federal and local governments, and local governments may have enforced better PIT administration. Also, the simplified tax system allowed the authorities to mobilize additional resources and strengthen PIT administration which led to higher compliance. Although the time period is too short to judge the results of the reforms, overall it seems that simplification and rate reduction have been mutually reinforcing.

EPT reforms

The Baltic countries initially introduced enterprise profit tax systems with rates varying from 15 to 35 percent. In 1993, these countries introduced generous incentives and tax holidays for foreign investment, reduced top marginal rates and consolidated rates. Although most of these incentives and reductions were subsequently removed, the tax rates were reduced as well, and overall profit taxes relative to GDP showed a declining trend. It should be noted that the enterprise profit taxes in Baltic countries have played a relatively small role in terms of revenue raising (Table 4). In 2000–2001, EPT rates were further reduced, and Estonia introduced a zero percent rate on retained earnings¹³.

Table 4. Selected BRO Countries: EPT Revenues (in percent of GDP)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Estonia	5.9	4.6	3.4	2.5	1.7	1.9	2.6	2.2	1.0
Latvia	4.2	7.3	3.6	1.9	1.9	2.4	2.6	2.5	1.7
Lithuania	5.8	5.3	2.5	1.8	1.9	1.6	1.3	0.8	0.7
Armenia	-	4.5	5.7	4.6	2.5	2.0	1.3	2.2	2.0
Azerbaijan	-	8.5	5.2	3.8	4.3	2.8	2.0	2.2	-
Georgia	-	0.8	0.8	0.8	0.7	0.6	1.0	1.0	1.3
Kazakhstan	5.1	4.0	3.3	2.2	2.9	2.4	2.2	2.7	6.3
Kyrgyz Republic	-	4.3	3.5	2.6	1.6	1.1	1.3	1.2	0.9
Moldova	4.8	4.6	4.5	4.9	4.1	2.4	1.8	1.7	1.5
Ukraine	-	9.4	12.6	8.9	6.8	6.1	5.5	4.9	4.5
Uzbekistan	5.3	7.5	6.1	8.5	9.9	7.2	5.9	4.4	3.6
Russia	8.2	9.8	8.0	7.6	4.6	4.1	3.5	4.6	5.6
Tajikistan 1/	-	-	-	-	2.2	1.1	1.1	1.3	0.6
Unweighted average	5.6	5.9	4.9	4.2	3.5	2.7	2.5	2.4	2.5

Source: *Recent economic developments, IMF*

1/ Data is not available for Belarus and Turkmenistan; only partial data is available for Tajikistan.

In early 1990s, the EPT systems in Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Ukraine and Uzbekistan had multiple rates varying widely for specific sectors and with general rates between 30 to 35 percent, with numerous exemptions and incentives for foreign investment. In mid-1990s, countries in this group moved towards rationalization of rate structures and many of them unified rates or reduced the number of rates to two. Also, many exemptions and tax holidays were eliminated in an attempt to broaden the tax base. By 1998, most of the countries had eliminated the excess wage tax and rationalized business deductions. Through 2000 the overall trend was towards reduction and

¹³ This means that profits retained within the enterprise are taxed at zero percent and profits that are distributed are taxed separately at a special rate for dividends.

unification in EPT rates and reduction of exemptions and preferential provisions, though Ukraine and Kazakhstan introduced lower rates for so-called economic zones. In 2001, Armenia, Moldova and the Kyrgyz Republic made further substantial reductions in their EPT rates.

As in case of personal income taxation, Belarus, Tajikistan and Turkmenistan have implemented relatively few changes to their EPT systems. The exemptions and deductions introduced in early 1990s, mostly for agriculture sector and businesses with substantial foreign capital, broadly remained unchanged throughout 1990s. The general EPT rates for these countries were in the range of 30 to 35 percent. Tajikistan subsequently increased the standard EPT rate to 40 percent in 1994, but then reduced it to 30 percent in 1997, while rates in Belarus and Turkmenistan remained almost unchanged. Belarus, Tajikistan and Turkmenistan were the last to eliminate the excess wage tax.

As of 1992, the Russian EPT system had a standard rate of 32 percent with varied rates for specific activities. In 1994 the standard rate was increased to 37 percent and remained unchanged throughout the 1990s. In 2002, as part of the major tax reforms reflected in the new tax code, the EPT system was substantially modified with the overall tax rate reduced from 35 percent to 24 percent and elimination of tax incentives and holidays.

Objectives of reforms

By end-2000, the Baltic countries had higher or similar levels of government revenues compared to the beginning of transition process and had largely achieved the tax reform objectives. Their objectives primarily comprised maintaining tax revenue levels, lowering the tax rates, minimizing distortions created by taxes and simplifying the tax system. Relatively fast implementation of revenue-neutral reforms at the initial stage of transition allowed the Baltic countries to avoid the sharp revenue declines that most of the other BRO countries have experienced. Tax systems in the Baltics were initially characterized by numerous exemptions and concessions, however, these countries moved towards simplification and base broadening and by the late 1990s, most of the exemptions and preferential provisions were repealed and their tax systems were transformed into ones largely similar to tax systems prevailing in Western Europe.

Starting in the mid-1990s, Armenia, Georgia, Kazakhstan, Russia and Turkmenistan managed to reverse the declining trend in their tax revenues, while others continued to experience serious difficulties with raising revenues. At the initial stage of transition, most countries in the second and third groups recorded a decline in their tax revenues and one of the priority objectives of their tax policies was to increase tax yield relative to GDP (Table 5). This situation seems to have resulted from a combination of the following factors: negative growth rates, weak tax administration, and distortions in the tax structure which probably contributed to a significant amount of informal economic activity. From 1991 to 1996, output continued to decline and state enterprises, which were the largest taxpayers, experienced a severe contraction in output. From mid-1990s, when the economies started to record positive growth rates, private sector share in GDP has been growing. However, the

taxation of the emerging private sector was complicated as most of the transactions were carried out on cash basis and the tax administration was not able to fully capture the income generated outside the state enterprise sector.

Table 5. BRO Countries: General Government Tax Revenue (in percent of GDP)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Estonia	39.4	41.7	38.2	37.0	37.6	36.9	35.9	35.4	34.5
Latvia	36.4	36.1	33.0	33.7	34.8	36.0	33.9	31.4	30.4
Lithuania	30.2	31.7	31.5	28.8	31.5	31.2	30.4	28.4	-
Armenia 1/	28.9	27.7	12.7	12.9	16.3	16.9	16.1	14.7	14.3
Azerbaijan	40.5	33.8	12.3	15.1	15.6	13.9	14.2	14.5	14.7
Georgia	-	11.7	7.0	10.6	12.7	12.8	13.8	14.2	14.3
Kazakhstan	21.1	18.5	11.0	11.4	12.2	16.2	16.0	20.0	22.0
Kyrgyz Republic	25.1	20.8	15.0	12.7	12.5	14.2	12.3	11.7	12.4
Moldova	22.8	33.6	28.8	27.4	29.9	28.3	21.8	22.3	22.4
Ukraine	42.7	41.9	34.8	34.7	35.6	34.3	32.0	29.7	29.9
Uzbekistan	35.3	32.3	27.7	32.3	27.7	29.4	27.9	26.2	23.2
Russia	36.2	34.6	23.5	22.5	33.0	28.6	28.8	31.3	33.4
Belarus	44.8	47.5	34.2	29.0	27.6	32.0	26.6	37.6	37.6
Tajikistan	-	-	-	-	-	11.7	12.8	12.9	14.1
Turkmenistan	12.8	8.1	9.1	13.6	18.6	18.5	20.2	25.8	25.1
BRO unweighted avg.	32.0	30.0	22.8	23.0	24.7	24.1	22.8	23.7	21.9
OECD unweighted avg.	36.6	36.6	36.7	37.3	37.5	37.8	38.1	38.2	-

1/ Central government budget

Source: EU2 and FAD Databases, IMF

Almost all countries in the second and third groups experienced substantial declines in the standard of living of the population, and in some countries increasing poverty levels became a serious concern. Regarding equity objectives, the governments' tax policies were aimed at designing progressive income tax systems that included a minimum exemption threshold and multiple brackets. The main emphasis was placed on providing vertical equity, although the effectiveness of these policies largely depended on the extent of income tax evasion and the ability of tax administration to bring groups with higher incomes into the tax net.

By end 2000, Armenia, Azerbaijan, Kazakhstan, Kyrgyz Republic and Moldova had relatively simple tax systems with fewer exemptions and rates than other countries in the second group. After the initial stage of successful introduction of market-oriented tax system elements, further reforms in many countries resulted in more complicated and less

transparent tax systems, with numerous exemptions and deductions.¹⁴ Starting in the mid-1990s, BRO countries started to implement tax policies aimed at improving the structural aspects of taxation, minimizing tax-induced distortions and simplifying the overall tax system. Not many attempts, however, were successful in this regard. In many cases, governments had difficulties in maintaining good tax policies and later amendments to tax legislation undermined the success of reform initiatives. Also, frequent changes in the tax system tended to create uncertainty in the overall business environment with potential negative effects on economic performance.

Box 5. The Divergent Tax Reform Experience of BRO Countries

In 1997, **Georgia** adopted a new tax code which provided for the inclusion of all tax laws into a single legislative document, substantial reduction in the number of taxes, fewer exemptions and tax incentives, and was considered a major achievement in this regard. However, shortly after adoption the tax code became a focus for repeated legislative amendments targeting new tax exemptions. Between mid-1997 and mid-2001, 27 individual packages of amendments were approved, comprising hundreds of specific amendments. Many of these amendments introduced new exemptions to benefit special sectors or interest groups in the economy. The overall impact has been to narrow the tax base and complicate the tax legislation considerably. The increase in tax revenues during this period resulted from improvements in tax administration and changes in GDP structure.

Armenia was one of the BRO countries that experienced a substantial deterioration of government revenues in early 1990s. Tax revenues contracted from about 30 percent of GDP in 1993 to below 13 percent in 1995. This reflected the decline in economic activity and failure of the tax administration to effectively cope with the new tax laws and to expand the tax base to keep pace with the expansion of output in new sectors of economy. Despite a series of tax reforms following independence, Armenia found itself at end-1996 with a tax system which was excessively reliant on direct taxes with rates that were too high, whether judged on their impact on economic growth incentives or in comparison to international standards, and produced too little revenue. In 1997, Armenia started a second round of tax reforms which focused on tax base broadening measures and improved and more transparent tax administration, and led to noticeable improvement in tax revenue performance in 1997–98. This was a significant achievement, as it was accompanied by a reduction of the corporate and personal income tax rates. In 1999–2001, tax revenues fell due to lower compliance and weaker tax administration efforts that resulted from the political and economic instability that followed the assassinations of senior government officials in the fall of 1999.

¹⁴ The state of tax policy in the Central Asian and Transcaucasian Newly Independent States. P. Shomec and J. Escolano, IMF PPAA, 1993.

Scope of reforms

Tax reform experience in BRO countries shows that initially all countries implemented piecemeal approach in changing their tax systems which in some cases included amendments to existing laws and in others introduction of completely new tax laws. With the progress in transition and as tax systems became excessively complex, countries like Kazakhstan, Georgia, Kyrgyz Republic, Moldova and Uzbekistan adopted new tax codes in the mid-1990s, Russia and Tajikistan adopted them in the late 1990s, Azerbaijan implemented new tax code in 2001, and Ukraine was recently considering the adoption of a new tax code.

Breadth of reforms

By the late 1990s, in most of the BRO countries tax policy reforms were generally more advanced than reforms in tax administration. As mentioned earlier, the success of achieving tax policy objectives depends not only on the design of the tax system but also on the implementation of tax administration, and this has been proven by the experience of BRO countries. Tax administration reforms have mainly focused on enactment of necessary legislation, establishment of organizational structures, development of systems and procedures; however, little has been accomplished in collection and enforcement areas. The reforms, with the exception of those carried out in the Baltic states, have been slow and have proceeded with difficulties for several reasons: (i) tax administration has been a highly politicized function of government with tax liabilities largely negotiated instead of determined by law; (ii) the tax administration capacity has not been adequate to handle the significant increase in the number of taxpayers and the different types of taxpayers (particularly small and medium-sized taxpayers in the emerging private sector); (iii) widely used barter trade and non-cash transactions, as well as the use of offsetting operations to pay taxes, have complicated the tax administrations' task of collecting taxes in cash from important segments of the economy; and (iv) in many countries there has been a lack of political commitment by the government officials towards major changes in tax administration. These factors were highlighted in Ebrill and Havrylyshyn (1999), and many of them still remain valid.

IV. CONCLUSIONS: IS THE LAFFER CURVE VALID FOR BRO COUNTRIES?

In Section II, this paper provided the conditions necessary for the Laffer curve to be valid in a particular country case. Below, I try to analyze whether these conditions exist in BRO countries and whether the Laffer curve may be applicable in the countries with high tax rates.

As already mentioned, changes in economic efficiency depend on the reaction of economic agents to the tax reform; and such changes may or may not be substantial, depending on whether there is large elasticity in the behavior of economic agents, in particular with respect to work, saving, and investment.

This paper concludes that, overall, there seems to be little evidence of a substantial improvement in personal income tax revenues that resulted simply from a reduction in

the top marginal tax rates. This conclusion appears valid even in situations (largely confined to the first half of the 1990s) where top marginal rates were reduced from very high levels and where one might have expected the Laffer-curve effect to be more pronounced. In the late 1990s, most of the BRO countries had lower income tax rates and many continued the rate reductions through 2000–2001, leading to a situation where further reduction in marginal rates will most probably cause negative revenue effects.

In the BRO countries, the elasticity of the behavior of economic agents, in terms of labor supply, saving and investment with respect to income tax rates is not large, and a reduction of income tax rates is unlikely to lead to a notable expansion of economic activity. Also, tax compliance will not improve substantially as long as the benefits from tax evasion are substantially greater than expected penalties and the detection efforts by tax authorities are not enhanced.

Owing to the short period for which data are available, judgments of the tax reforms are difficult to base on observed behavioral changes and may instead be based on effects one should expect on the basis of theory. Later on, when there is enough data, it may be possible to derive quantitative estimates of the impact of tax reforms on the economies of BRO countries.

Regarding **saving**, as in many other transitional countries, saving rates in BRO countries declined as the population experienced a substantial decline in living standards, with a greater share of national income being spent on consumption. Correspondingly, domestic saving rates in most of these countries are substantially lower than in developed market economies. We can assume that in countries with low income levels, individuals save mostly for precautionary purposes (for example, potential loss of job, serious illness) and this type of saving is largely not affected by a change in the after-tax rate of return. Even if one assumes that motives (substitution or wealth effects) other than protection against unforeseen future events guide agents' saving behavior, the depressed consumption levels, underdeveloped capital markets and low level of financial intermediation would mitigate against an increase in saving. In any case, a substantial part of gross savings in BRO countries are held in the form of bank deposits, and interest income on these deposits is largely tax exempt.

Therefore, aggregate savings will not increase much when personal income tax rates are reduced.

The effect of income tax rate reduction on **investment** can be considered through two channels: business and individual. On the business side, changes in the enterprise profit tax directly affect investment decisions by changing the after-tax rate of return; and, thus, **a decrease in the profit tax rates, other things being equal, is likely to lead to larger investment volumes, both domestic and foreign.** Given the short period for which data are available, and the weaknesses regarding data on business investment in BRO countries, it is difficult to assess with any certainty whether business investment has increased in response to tax rate reductions. On the individual side, the impact is channeled through the effect of income tax reduction on saving and the saving-investment linkage, by which an increase in domestic saving would lead to increase in domestic investment. As argued above, however,

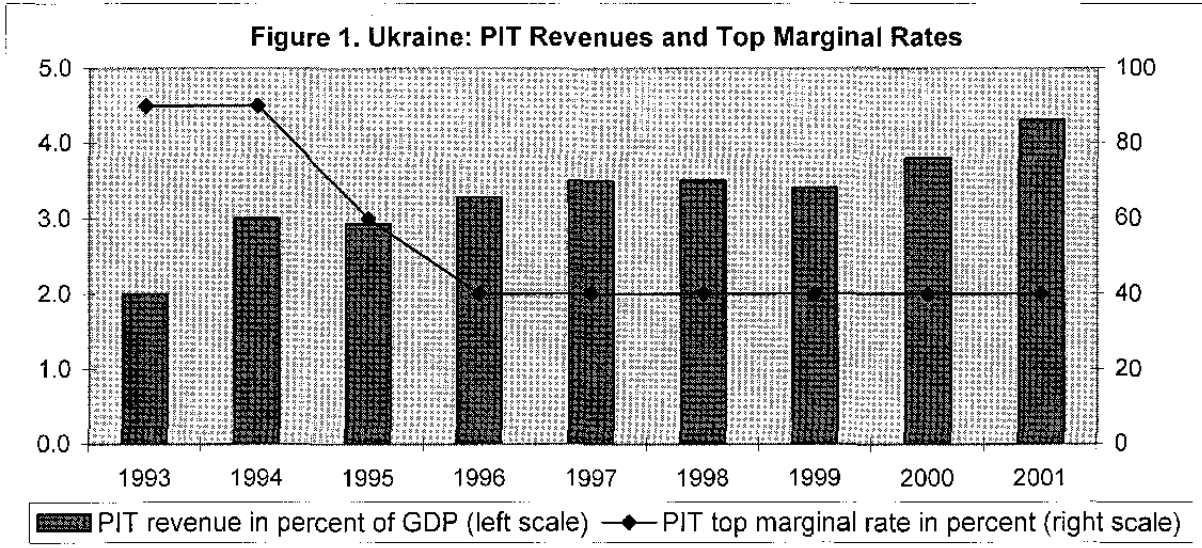
the personal income tax reduction in BRO countries is not likely to lead to substantial increase in total saving, and **hence the investment levels will not be affected substantially through this channel.**

When analyzing the **labor-supply** response to tax changes, this paper assumes that individuals divide their time between leisure and work to earn income. A reduction in personal income tax and, in particular, labor income tax increases the net return to work efforts. This may or may not, however, lead to an increase in labor supply, depending which effect of tax change is stronger: the substitution effect or the income effect. In the case of the substitution effect, a reduction in the income tax increases the price of leisure relative to work and, thus, encourages work effort, while in the case of the income effect, if consumers have a targeted flow of consumption, it increases the disposable incomes of workers and may decrease work effort. In the BRO countries, however, under circumstances of large unemployment, estimated at substantially more than 10 percent of the working-age population, and in cases where there is only one primary income earner in a family, individuals have little choice about labor participation and work full time. **As a result, there may be little response, in terms of additional labor supply, to a reduction in labor income taxes.**

A close review of tax reforms in the BRO countries suggests that the experience has been mixed and that it is difficult to disentangle the rate-reduction effects since policy reforms were often accompanied by efforts to strengthen tax administration. For example, in 1994, Estonia reduced its PITs top marginal rate, introduced a flat-rate system, and recorded increases in PIT revenues relative to GDP. But one should also take into account that Estonia eliminated most of the PIT exemptions and the new flat system was much simpler and easier to administer than its predecessor. In the case of Kazakhstan, which reduced the PITs top marginal rate in 1997, this led to a substantial decline in PIT revenues as a percentage of GDP.

In 1995 and 1996 Ukraine implemented major changes in its PIT system by reducing the top marginal rate of income tax from 90 percentage to 40 percentage in 1996. Subsequently, PIT revenues relative to GDP changed slightly during 1994–96, declining from 3 percent of GDP

in 1994 to 2.9 percent of GDP in 1995 and then growing to 3.3 percent of GDP in 1996 (Figure 1).



At first glance, there seems to be a notable improvement in PIT performance, since a sharp decline in the top marginal rate resulted in only a slight decline and a subsequent increase in the ratio of PIT revenues to GDP. Other factors played an important role, however: in 1995, the Ukrainian authorities eliminated many tax exemptions to broaden the tax base and increased wages substantially; and in 1996, wages grew faster than GDP. Similarly, the increase in the ratio in 2000 and 2001 was driven by a rise in nominal wages greater than the increase in nominal GDP.

In the case of Russia, as noted in Box 4, the PIT reform not only reduced the top marginal rate but also simplified the tax system by replacing the multiple rate structure with a flat tax and reducing the number of deductions. Also, the authorities implemented certain measures to strengthen the tax administration. It seems that these components of the reform have played a major role in revenue performance improvement.

Taking into account the current fiscal situation in many BRO countries, in particular the absence of expenditure cuts and the need to avoid primary deficits on the path to achieving fiscal sustainability, tax reforms should aim to be revenue neutral. Tax policies should focus on maintaining the overall tax burden while broadening the tax base and rationalizing the tax structures so as to remove all tax-related distortions. Also, reform efforts should go well beyond mere changes in tax policies to fundamental reform of the broader tax system that also involves measures to strengthen administration and compliance.

APPENDIX
I. SUMMARY OF TAX REFORMS IN SELECTED BRO COUNTRIES

	Personal Income Tax	Enterprise Profit Tax	VAT
Armenia	<p>1992: brackets and rates unified with the EPT 1998: new PIT law, three rates of 15%, 25% and 30%, tax-exempt income threshold established 2001: tax base broadened by including interest income, two brackets with top rate at 20%</p>	<p>1992: 4 rates, 12%, 18%, 25%, and 30%, numerous exemptions and incentives for foreign investment 1994: number of exemptions reduced 1998: new EPT law, two rates of 15% and 25% 2001: EPT rates replaced by a unified rate of 20%</p>	<p>1992: introduced at 28%, with exemptions for basic food items 1993: rate reduced to 20%, exemptions added 1994-95: some exemptions removed, switch to accrual basis 1997: new law, according to which VAT is levied at the point of import and all trade taxed on destination principle 2001: some exemptions abolished, tax threshold increased substantially</p>
Azerbaijan	<p>1992: six marginal rates ranging from 12% to 55% 2000: four brackets, top marginal rate reduced to 35%</p>	<p>1992: three rates of 25%, 30% and 35%, relatively few exemptions 1996: move towards the full deductibility of wages from tax base 2000: rate reduced to 27%</p>	<p>1992: introduced at 28%, with numerous exemptions for food items 1993: rate reduced to 20% 1995: several exemptions eliminated 1996: most of the exemptions on foodstuff removed 1998: rate reduced to 18%</p>
Estonia	<p>1991: 3 rates, 16%, 24% and 33% 1994: flat rate introduced at 26%, most of the exemptions eliminated</p>	<p>1991: 3 rates, 15%, 23% and 30% 1992: 3 rates consolidated into one at 35% 1994: rate reduced to 26%, incentives eliminated 2000: tax on retained earnings abolished</p>	<p>1991: 10% 1992: raised to 18% 1994: number of exemptions reduced</p>
Georgia	<p>1992: marginal rates ranging from 12% to 40%, five income brackets and wide tax base 1994: top marginal rate reduced to 20%, four income brackets 1995: exemptions for certain groups introduced 1996: number of exemptions reduced</p>	<p>1992: rates ranging from 17 to 35 percent depending on ownership and sector, exemptions for enterprises producing certain food items 1993: rate structure rationalized with a standard rate set at 20 percent and specific rates for some sectors, exemptions reduced 1997: new tax code, rates unified at 20 %, exemptions reduced</p>	<p>1992: introduced at 28%, reduced to 14% later in the year 1995: rate increased to 20%, 10% rate on bread and flour introduced, agriculture produce by individuals exempted 1996: number of exemptions reduced 1997: agriculture exempted 1998: several exemptions removed 1999: exemption for primary agriculture removed</p>
Kazakhstan	<p>1992: schedular tax with 30% top marginal rate 1993: top rate raised to 40%, 4 brackets 1994: number of brackets increased 1995: new tax code, number of brackets increased to 6 1997: top marginal rate reduced to 30% 1998: number of brackets reduced to 4</p>	<p>1992: general rate reduced to 35%, and then to 25%, with special 10% rate for agriculture 1993: exemption for export companies abolished 1994: rate unified at 30% 1997: special rate at 20% introduced for economic zones</p>	<p>1992: tax introduced at 28%, with lower rates and deductions for food 1993: rate reduced to 20% 1995: new tax code, single rate of 20% 1997: gradual move to destination principle 1998: new exemptions for education and medical services and reduced rate of 10% for agro-products and food introduced</p>

	Personal Income Tax	Enterprise Profit Tax	VAT
Kyrgyz Republic	<p>1992: progressive tax with top marginal rate of 40% and 5 brackets, applied only to monetary income</p> <p>1995: new law, base extended to in-kind income, 1996: new tax code, deductions were limited, tax exempt threshold increased</p> <p>1997: tax exempt threshold abolished, 6 brackets</p> <p>1999: top marginal rate reduced to 33% and number of brackets to 4</p> <p>2001: 2 brackets with 10% and 20% rates</p>	<p>1992: tax simplified, rate reduced from 45% to 35%, alternative rates for specific activities</p> <p>1994: rate reduced to 30%</p> <p>1995: new law, specific rate for agriculture raised to 25%, fewer exemptions and deductions</p> <p>1996: new tax code, presumptive taxes on small retailers introduced, rate unified at 30%</p> <p>1997: rates on dividends and interest income reduced to 5%</p> <p>1999: rate on dividends reduced to 0%</p> <p>2001: rate reduced to 20%</p>	<p>1992: tax introduced at 28%</p> <p>1993: rate reduced to 20%</p> <p>1996: new tax code, coverage extended to imports, gradual shift to destination principle, custom duties and excises removed from VAT base</p> <p>1999: destination principle applied for all countries except Russia</p> <p>2001: some exemptions eliminated</p>
Latvia	<p>1991: 5 rates ranging between 15%–35%</p> <p>1994: basic rate at 25%, with top marginal rate of 35% which later was reduced to 10%</p> <p>1997: single 25% rate</p>	<p>1991: 3 rates, 15%, 25% and 35%</p> <p>1993: 25% general rate, with higher rates for state enterprises, trade and financial sector</p> <p>1995: new law introduced with a standard rate of 25%</p> <p>2001: rate cut to 22%</p>	<p>1992: turnover tax with 10% standard rate, and with 2 % surcharge on retail</p> <p>1992: standard rate raised to 12%</p> <p>1993: standard rate raised to 18%, 1994: exemptions on food repealed</p> <p>1995: new VAT law replaced the turnover tax law</p> <p>1991: rate reduced from 20% to 15 %</p> <p>1992: raised to 18%</p> <p>1994: exemptions and reduced rate for energy and agriculture introduced</p> <p>1997: exemptions to energy sector and reduced rate for agriculture repealed</p>
Lithuania	<p>1991: progressive rate schedule with rates ranging from 18% to 33%</p> <p>1994: general rate of 33%</p>	<p>1991: 29% general rate</p> <p>1994: 10% rate on retained earnings and reductions and holidays introduced for foreign investments and small businesses</p> <p>1997: rate on retained earnings reduced to 0%, agriculture taxed at 10%</p> <p>2000: general rate reduced to 24%</p>	<p>1992: introduced at basic rate of 28%, lower rates for certain foodstuff</p> <p>1993: standard rate reduced to 20%</p> <p>1998: new law required VAT to be based on invoices, introduced destination principle except for trade with Russia</p> <p>2002: 5% rate introduced for agricultural products</p>
Moldova	<p>1992: seven tax brackets with rates ranging from 10 to 40%, relatively few exemptions, no deductions</p> <p>1994: number of brackets reduced to four</p> <p>1997: new PIT code set two rates of 20% and 32%, new deductions as well as base broadening introduced</p> <p>1998: three brackets, top marginal rate reduced to 28%</p> <p>2002: top marginal rate reduced to 25%</p>	<p>1992: numerous rates ranging from 1.5% to 55%, most part taxed at 32% general rate, exemptions and tax holidays for agriculture related activities and joint ventures</p> <p>1997: new EPT code unified rates at 32% and eliminated many special tax exemptions, benefits for agricultural enterprises and joint venture remained</p> <p>1998: rate reduced to 28%</p> <p>2002: rate reduced to 25%</p>	<p>1992: introduced at basic rate of 28%, lower rates for certain foodstuff</p> <p>1993: standard rate reduced to 20%</p> <p>1998: new law required VAT to be based on invoices, introduced destination principle except for trade with Russia</p> <p>2002: 5% rate introduced for agricultural products</p>
Russia	<p>1992: 3 rates, 12%, 20% and 30%</p> <p>2001: uniform 13% rate introduced and number of deductions reduced</p>	<p>1992: standard rate of 32%, with varied rates for specific activities</p> <p>1994: standard rate raised to 37%</p> <p>2002: standard rate reduced to 24%, tax incentives and holidays abolished</p>	<p>1992: introduced at 28%, but with lower rate and exemptions for food items</p> <p>1993: standard rate reduced to 20%, lower rate reduced to 10%</p> <p>1994: special turnover tax of 3% introduced</p> <p>2001: tax applied to entrepreneurs, some exemptions eliminated, destination principle adopted for non-energy trade with CIS</p>

	Personal Income Tax	Enterprise Profit Tax	VAT
Tajikistan	<p>1992: progressive schedular tax with rates ranging from 10 to 60%</p> <p>1995: top marginal rate reduced to 40%</p> <p>1997: top marginal rate increased to 47%</p> <p>2002: top marginal rate reduced to 20%</p>	<p>1991: standard rate at 35%, with specific rates for certain activities</p> <p>1993: standard rate reduced to 32%</p> <p>1994: rate increased to 40%</p> <p>1997: rate reduced to 30%</p>	<p>1992: tax introduced at 28%, relatively few exemptions</p> <p>1993: rate reduced to 20%, state and collective farms exempted</p> <p>1994: 3% surcharge introduced on top of 20% rate</p> <p>1995: agriculture exempted</p> <p>1997: 3% surcharge eliminated</p> <p>1998: exemptions for food eliminated</p> <p>1999: new tax code modernized VAT system, input tax credit granted and excess credits refunded</p>
Ukraine	<p>1991: introduced at 30% top marginal rate with 4 brackets</p> <p>1994: top marginal rate raised to 90% and number of brackets increased to 8</p> <p>1995: top marginal rate reduced to 60% and number of brackets to 7</p> <p>1996: top marginal rate reduced to 40% and number of brackets to 6</p>	<p>1992: EPT rate reduced from 35% to 18%</p> <p>1994: EPT rate raised to 22%</p> <p>1995: EPT rate raised to 30% and differentiated with lower rate for agricultural sector</p> <p>1997: preferential rate for agriculture repealed, number of exemptions reduced</p>	<p>1992: VAT introduced at 22% and 28% for goods and services with liberalized and administered prices respectively</p> <p>1994: VAT coverage extended to non-CIS imports</p> <p>1995: rate reduced to 20%, list of exemptions extended</p> <p>1997: new VAT law modernized the tax by moving it to an accrual basis and eliminating many exemptions</p> <p>1997: new exemptions introduced and introduction of accrual method postponed till 1999</p> <p>1998: certain tax exemptions removed, but agriculture exempted from the tax for five years</p>
Uzbekistan	<p>1992: progressive rate schedule with 7 brackets and rates ranging from 12% to 60%</p> <p>1993: top rate reduced to 50%, number of brackets to six</p> <p>1994: top rate reduced to 45% and number of brackets reduced to 4</p> <p>1995: top rate reduced to 40%</p> <p>1998: top rate raised to 45%, number of brackets increased to 5</p>	<p>1992: standard rate set at 18%, but rates varied by industry, numerous exemptions, deductions and tax holidays</p> <p>1994: 3% tax imposed on agriculture</p> <p>1995: new exemptions introduced for banks</p> <p>1996: standard rate set at 37%</p> <p>1997: standard rate reduced to 36%</p> <p>1998: new tax code, standard rate reduced to 35%</p> <p>1999: standard rate reduced to 33%</p>	<p>1992: tax introduced at 30%, did not cover retail trade and services</p> <p>1993: coverage extended to wholesale and retail sales, rate reduced to 25%, deduction of 6% allowed for wage pay</p> <p>1994: rate reduced to 20%, deduction of 6% abolished</p> <p>1995: rate reduced to 18%</p> <p>1996: rate reduced to 17%</p> <p>1997: rate raised to 18%, preferential rate at 10% introduced for food items</p> <p>1998: new tax code, standard rate raised to 20%</p> <p>1999: preferential rate raised to 15%</p>

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