

Russian-European Centre for Economic Policy

WORKING PAPER SERIES

**«THE EFFICIENCY AND EFFECTIVENESS OF
PUBLIC EXPENDITURE
(APPROACHES TO ESTIMATING EFFICIENCY OF
PUBLIC EXPENDITURE)»**

E. Sharipova

June-July 2001

Abstract

The paper presents a variety of approaches to estimating the efficiency of public expenditure. Modeling, analytical, empirical, and normative approaches are distinguished. Expenditures are analyzed in terms of macroeconomic costs and consequences, allocative and technical efficiency. Four complementary analytical methods are described. Preliminary study of the effects of regional expenditure shows negative correlation between overall growth rates and public spending, and the existence of positive influence of particular expenditure items on growth

I. Background

Fiscal performance in Russia has changed significantly over the last decade. In 1992-1998 the federal budget, in keeping with the traditions of the planned economy, often acted as a donor for the inefficiently operating government sector. Fiscal policy used gave rise to severe problems both in obtaining revenue and managing public spending. In 1999, the government managed to improve its fiscal performance drastically as regards revenue collection, achieving overall budget surplus in 2000. Factors behind the progress are both objective (improvements in fiscal discipline, adoption of the new Budget Code) and subjective (higher revenues of export-oriented industries, inflow of capital). In 2000, total revenue of the enlarged budget exceeded 38% of GDP, of which the federal budget accounted for 16%, regional budgets – for 13% and the extrabudgetary funds – for 9%. Under the 2001 Federal Budget Law federal revenue should match federal expenditure at around 16% of GDP.

In this paper we present approaches to determining optimal size of budget spending and efficient allocation of budget resources to the main sectors of public expenditure. This analysis will be based on worldwide experience, theoretical research in the sphere of optimal government spending, and preliminary cross-region analysis of efficiency of public expenditure in Russian regions.

II .Recent approaches to the problem

Economic debate on the effect of government spending on economic growth is concentrated on the issue of whether government spending is (or can be) productive or not.

The mainstream of thought on the issue of optimal government spending was initiated by Robert Barro in 1990. In his paper Barro presented an optimal policy in the area of public spending based on a model of endogenous growth.

Theoretical research on optimal government spending in endogenous growth models developed quite rapidly. Various approaches to the role of government spending in the production function were introduced (they are presented in a paper by Robert Barro and Xavier Sala-i-Martin).

Corsetti, Giancarlo and Roubini, Nouriel in 1996 made another major contribution to research in this area. They considered a two-sector model and investigated optimal policies depending on whether government spending affects the productivity of the final goods sector or the human capital accumulation sector. Also, the authors examined a broader set of tax instruments, including various tax rates, on the income of various factors and discussed the

implications of restricting this menu of taxes. (This model is considered in more detail below).

Cross-regional analysis of relationships between public sector spending and politics and institutions was presented by Mark Jones, Pablo Sanguinetti, and Mariano Tommasi (7) in their study of the Argentine provinces. Using a panel of 23 provinces the authors concluded that, given a high degree of vertical imbalance (i.e., a lack of correspondence between spending and taxation decisions at the local level), provincial governments tend to overexploit the common resources of national taxation. In this game, the federal government elected by a nationwide constituency has better incentives to fiscal restraint.

The Russian Government Concept of Public Spending Policy aimed at increasing the effectiveness of government spending in order to support economic growth and reduce wealth inequality, illustrates a normative approach to the problem of developing a mechanism of efficient spending. The Concept sets forth the main goals, problems and principles of budget regulation in the area of public spending. Based on government spending targets, a set of essential measures for reforming budget policy is provided within each main section of budget classification. Moreover, it is stated that improving the effectiveness of public spending is impossible without restructuring budget process itself and budget procedures. Transformation of the budget process should imply modification of each step of it: the first stage of budget draft preparation, budget execution and preparation of budget reports, as well as the stage of government financial control and estimation of efficiency of public spending.

III. Evaluation of government expenditure¹

Economic evaluation of government expenditure is limited, as the influence of political considerations on the decisions on the size and allocation of public spending often prevail over economic considerations. Thus, our evaluation shall be valid to the extent government spending achieves underlying objectives (efficacy) and is carried out in a cost-effective way (efficiency).

Three main lines of analysis can be followed in evaluating government expenditure: (1) macroeconomic consequences; (2) allocation of resources; (3) technical efficiency. This division is represented by IV-VI of the paper.

From the macroeconomic perspective, two major questions shall be raised:

Do economic benefits from a given size of government spending exceed economic costs from the corresponding tax burden?

Are the underlying budget process and administrative system able to manage fiscal planning matching macroeconomic developments, including checks and controls over unrealistic fiscal commitments and prudent policies in the context of cyclical fluctuations.

Allocative efficiency of government spending is related to the set of objectives behind decisions to intervene in the market economy: the need to provide public goods, a view that merit goods should be made more widely available. However, in providing them income distribution, environmental considerations, limitation of monopoly positions, and resolution of other market failures should be taken into account.

¹ The background for the further analysis is taken from the recent OECD publications on public expenditure management. [Paul Atkinson and Paul van den Noord].

Where government intervention is warranted, it does not necessarily have to be made in the form of government spending. Such intervention usually involves a mix of expenditure, regulatory arrangements, mandates, tax incentives, agreements, provision of information, etc. These forms may, in turn, be reinforced by or replaced with self-regulatory codes of conduct and standards in the private sector. Decisions about the most desirable form of intervention shall be made depending on simplicity, transparency, fairness, and cost-effectiveness.

Each form of government intervention is costly. Direct expenditure is the most transparent instrument, while the cost arises in the form of the tax burden. Besides, the choice shall be made with due regard for distribution aspects of the various forms of intervention, as the costs associated with government intervention are usually spread over a much wider range of economic agents than that of benefits. Other allocative considerations include potential negative effects of both over- and under-provision of expenditure or other forms of intervention.

Technical (operational) efficiency implies avoiding wasteful use of resources in the course of production of public goods and services. Main obstacles to improving technical efficiency are related to administrative technologies, including excessively centralized bureaucratic structures, lack of responsibility and/or authority, low flexibility, risk of losing resources after improvement in efficiency.

IV. Size of government expenditure

The problem of the size of the government is largely debated among economists on empirical as well as theoretical levels. The proposed solutions on the optimal amount of gross government outlays vary in the range from 10-15% of GDP (as suggested by A.Illarionov) to more than 50% of GDP (as is the case in some OECD countries).

Literature on the determination of the optimal size of the government distinguish three major lines of analysis as was discussed above:

- (1) general equilibrium approach emphasizing the role of government spending in the accumulation of human capital and raising of productivity;
- (2) budget process approach stressing the role of institutional arrangements in determining size and structure of public sector;
- (3) empirical approach based on international comparisons.

1. General equilibrium approach

First half of the 90s was characterized by an increasingly wide application of general equilibrium models to evaluate a relationship between productive government spending and economic growth. Many previous studies found that government spending was unproductive and higher public outlays generally led to lower long-term growth. However, empirical data on economic growth in developed countries show that higher government spending is not negatively correlated with the growth rate. This evidence led to conclusions that at least some forms of public spending are directly or indirectly productive, and affect the productivity of the economy in various ways.

The classical theory on endogenous growth models states that optimal government spending is a constant ratio of spending to output in every period when government spending is an

input in production of a final good, regardless of the tax policy implemented by the government.

In 1996, Corsetti, Giancarlo and Roubini, Nouriel (3) considered the effects of an endogenous and productive government spending in endogenous growth models. This model considers important issues of the normative analysis of spending and taxation policies, such as a) non-balanced budget, b) cases where government spending affects the productivity of either the final good sector or the human capital accumulation sector, or both, and c) a set of tax instruments, including different tax rates on the income of various factors.

The authors use a three-sector model of endogenous growth, including both physical and human capital as factors of production. The first sector produces final output that can be consumed or accumulated (physical capital), the second sector produces human capital, while the third sector is the home production sector. The model focuses on two alternative specifications: in the first one, public spending is an input in the final goods sector only (for example, services provided by the judiciary and police systems that enforce laws and contracts and have external effects on market transactions); in the second one it is an input in the human capital accumulation sector only (such as public education).

The general equilibrium approach analyses an optimal amount of public spending and model tax and financial policies in models of endogenous growth where public spending is productive. In models considering human and physical capital optimal policies depend on whether government spending affects the productivity of the final goods sector or the human capital accumulation sector.

2. Models on the structure of the government

There is a great number of papers studying the influence of structural public factors on economic growth. Some of the models used in this research take into account the relative strength of interest groups and the government, others allow for budget deficits resulting from a weaker government, shedding some light on what effect persistent fiscal deficits may have on the actual strength of the government. Finally, there are models that take into account political cycles, considering different types of elections (parliament elections and changes of the government vs. presidential elections).

Velasco (1.2) proposes a model of endogenous fiscal deficits and delayed fiscal reforms. He considers a society divided into several influential interest groups, each of which benefits from a particular kind of government spending. The government is assumed to be weak, reflecting a case of "fragmented" fiscal policymaking. The implications of the model confirm two basic stylized facts: (a) emergence of fiscal deficits even when there are no reasons for inter-temporal smoothing, and (b) possibility to eliminate deficits but only after a delay during which government debt is built up.

Rogoff (2.1) presents a dynamic, multidimensional, signaling model with a political budget cycle arising due to temporary information asymmetries about the incumbent leader's "competence" in administering the public goods production process. Competent incumbents, who have greater leeway to cut taxes and raise government consumption spending prior to elections, are more likely to do so after elections as well. In countries, where the incumbent has the option of calling an early election, budget distortions which accompany opportunistic early elections tend to be damped compared to those accompanying end-of-term elections.

The papers on individual country, OECD and EU experience (presented in [7]) provide a good insight into the effect of similar rules in different countries as well as the extra effect of different rules.

3. Empirical evidence

In 1965 - 1995, general government outlays in OECD area increased from 27% to 39% of GDP, followed by reduction to 36.5% of GDP by 2000 (see Table 1).

Table 1. General government outlays, by country
Percent of GDP

| | 1965 | 1980 | 1995 | 2000 (est) |
|-----------|------|------|------|------------|
| OECD | 26.9 | 35.5 | 39.4 | 36.5 |
| Euro area | 33.1 | 43.0 | 49.1 | 45.1 |
| USA | 25.6 | 31.3 | 32.9 | 29.3 |
| UK | 33.5 | 43.0 | 44.4 | 38.4 |
| Germany | 35.3 | 46.5 | 46.3 | 43.0 |
| France | 37.6 | 45.4 | 53.6 | 51.2 |
| Sweden | 33.5 | 56.9 | 62.1 | 53.9 |
| Korea | 14.5 | 19.2 | 19.3 | 23.4 |
| Russia | n.a. | n.a. | 41.8 | 35.0 |

Source: OECD

A few observations can be made about patterns in the overall size of government spending across OECD countries. First, fluctuations in the overall size of expenditure can be very significant in single countries. This may reflect not only tightening or loosening of fiscal policies leading to changes in the debt service profile, but also substantial trends in the collective choices. Second, most countries have similar profile of overall public spending over time indicating the existence of cross-country influence on collective or political decision-making. Third, despite similar expenditure trends, differentiation across countries increased significantly over time: average deviation went up from 6 to 8 percentage points of GDP, the difference between largest and smallest spending increased from 23% to 30% of GDP. Finally, and surprisingly, public expenditure in Russia over the last five years has been virtually the same as OECD average expenditure and followed the same trend.

In this context, one can argue against the proposition of the current government program about the necessity to reduce public spending further to around 30% of GDP. Abstracting from allocative and technical efficiency, we shall analyze the extent, to which Russia would get a competitive advantage as regards the size of the government versus the potential negative effects resulting from the under-provision of government services.

It is worth mentioning that modern public management practices will imply smoother changes in overall expenditure levels in future. Many OECD member countries have adopted medium-term frameworks for total government spending, usually covering three to five years, and support this with medium-term objectives for one or more fiscal variables. This development stems from understanding that annual budgeting may be influenced too heavily by the short-term political considerations, which result in the emergence of superfluous spending items and distortion of an optimal policy mix and expenditure structure. Medium-term frameworks aim to anchor annual expenditure in medium-term projections. They oblige governments to recognize the implications of current budgetary decisions for government finances in the future and to take account of changes in structural and demographic factors and rising government debt levels, as well as the evolving cyclical situation. At the same time, they limit inefficiencies that arise from annual appropriations for multi-year capital

projects. It is important that these frameworks be supported by systems for evaluating spending programmes objectively and they are carried out on the basis of realistic economic assumptions.

V. Efficient allocation of government expenditure

The allocative efficiency of public spending shall be considered on the basis of expenditure effect on income distribution and optimal provision of public goods.

Estimated structure of government spending by economic categories in OECD countries is as diverse as overall spending size (see Table 2).

**Table 2. Estimated general government outlays by economic category for year 2000
Percent of GDP**

| | Income transfers | Subsidies | Interest payments | Consumption | Net capital outlays | Total outlays |
|-----------|------------------|-----------|-------------------|-------------|---------------------|---------------|
| OECD | 12.8 | 0.8 | 3.8 | 15.7 | 3.4 | 36.5 |
| Euro area | 16.7 | 1.4 | 4.2 | 19.7 | 3.0 | 45.1 |
| USA | 10.5 | 0.2 | 3.6 | 14.1 | 0.9 | 29.3 |
| UK | 13.1 | 0.5 | 2.7 | 18.3 | 3.8 | 38.4 |
| Germany | 18.6 | 1.7 | 3.4 | 18.8 | 0.4 | 43.0 |
| France | 18.1 | 1.3 | 3.3 | 23.4 | 5.1 | 51.2 |
| Sweden | 18.3 | 1.8 | 4.1 | 26.5 | 3.2 | 53.9 |
| Korea | 3.3 | 0.3 | 1.6 | 9.7 | 8.6 | 23.4 |
| Russia | 11.0 | 3.0 | 3.5 | 14.5 | 3.0 | 35.0 |

Source: OECD, RECEP estimates

As a rule (Japan is one important exception), government consumption is higher than income transfers, indicating some bias of the political choice towards provision of public goods versus support of private consumption and influence on income distribution. Capital transfers are high in Asian countries, reflecting a traditional focus on centralized investment. Again, the structure of government spending in Russia is consistent with the OECD averages, except for a greater role of subsidies and relatively slightly smaller share of income transfers.

The functional picture of government spending is much more complex (see Table 3).

Most of the countries under consideration experienced similar trends in the functional structure of expenditure. In particular, in the majority of countries one could observe reductions in the production of public goods and economic services along with increases in the production of merit goods and income transfers.

**Table 3. Structure of government outlays by function, 1995
Percent of GDP**

| | Income transfers (1) | Public goods (2) | Merit goods (3) | Economic services (4) | Public debt interest | Total (1)-(5) |
|--|----------------------|------------------|-----------------|-----------------------|----------------------|---------------|
| | | | | | | |

| | | | | | | |
|-----------|------|-----|------|-----|-----|------|
| | | | | | (5) | |
| USA | 9.4 | 9.2 | 11.9 | 2.8 | 4.8 | 38.1 |
| UK | 15.6 | 5.4 | 11.5 | 3.3 | 3.6 | 39.4 |
| Germany | 10.7 | 5.2 | 13.9 | 4.5 | 3.7 | 38.0 |
| France'93 | 20.9 | 9.2 | 14.1 | 3.1 | 3.5 | 50.8 |
| Sweden | 21.2 | 5.4 | 17.2 | 3.4 | 6.8 | 54.0 |
| Korea | 1.8 | 5.7 | 5.6 | 3.7 | 0.5 | 17.4 |
| Russia'00 | 11.0 | 6.5 | 10.0 | 4.0 | 3.5 | 35.0 |

Source: OECD, RECEP estimates

VI. Estimation of specific items of budget expenditure

The estimation of efficiency for specific categories of government expenditure is the basis for efficient public management. In this paper we mostly investigate technical or operational efficiency, while allocation issues shall be considered for the whole set of government interventions in a separate study.

A number of methods is usually applied for the estimation of efficiency for specific categories of expenditure, including (a) international comparisons, (b) interregional comparisons inside one country, (c) comparisons with the production of similar goods and services on the basis of market mechanisms (where available), and (d) identification of operational inefficiencies for each particular spending item (on the primary accounting level). Table 4 shows potential advantages and drawbacks of these methods.

Table 4. Expenditure evaluation methods

| Methods | + | - |
|---------|--|--|
| A | Accounting for all existing technologies used for the production of public goods and services Opportunity to make comparison with the most efficient existing expenditure | Difficulties in accounting for substantial and unavoidable country differences Statistical difficulties (comparability problems) Difficulties in evaluating purely legal differences |
| B | Opportunity to make comparison with best practices in the country Statistical comparability | Difficult to account for substantial and unavoidable regional differences |
| C | Opportunity compare with more or less efficient market technologies and to point on the expenditure items that would be more efficiently produced by the private sector | Difficulties in comparing accounting practices Difficulty to account for different roles of public and private sectors in various areas of economy |
| D | Deeper financial analysis Opportunity to minimize costs without major structural changes, implying fast progress | Reliance on this method may lead to slower restructuring |

VII. Theoretical issues and empirical results

Based on the discussion above, cross-regional analysis was used to answer questions about the optimal size of the government and efficiency of different items of expenditure in Russia. On average, regional public outlays amount to 20% of gross regional product and have an important effect on economic development of regions. Government affects economic development by producing private and public goods, as well as introducing distortions into private markets. Taking into account that government intervention in the economic sphere still plays a significant role in Russia, the influence of regional government expenditures on growth is regarded as a measure of efficiency of public spending.

Although using cross-regional method allows us to avoid many difficulties (for instance, different methodologies in different countries), there still is the statistical data problem, as consistent data are available since only 1996. This very short period does not provide an opportunity of investigating more properly the influence of budget policy over the time.² Growth rates and public expenditures are examined across 79 Russian regions (without the Chechen Republic and autonomous okrugs).

Efficient size of government. According to the general equilibrium approach (for example in [6]), the optimal size of government should have positive influence on growth. Regional development in Russia during 1996-1999 shows that total regional expenditure is negatively correlated with growth. This means that, despite favorable cross-country comparisons, the total level of regional spending is inefficient and impedes economic growth.

Panel data analysis of the influence of public expenditure on the real per capita income index also shows the existence of a negative relationship but the correlation of these two parameters is less strong. This suggests that, on the one hand, higher public spending worsens economic situation in regions, but, on the other hand, it contains household income decline to a certain extent.

As discussed above, Russian regions are vastly different as regards distribution of labor force, natural resources, human capital accumulation, etc. In order to check the existence of the "poor and rich" region effect on the result, the structural break point test was implemented. Examination of economic development of several groups of regions according to their relative economic performance (for example, households consumption per capita) did not confirm that budget policies have different effects across regions. Despite the existence of a tendency for "rich" region to be more independent of the size of the government (which for some years is confirmed by data analysis), this relation is not statistically significant for all periods of estimation. The development of rich and laggard regions is more related to the convergence theory. For Russian regions these issues are investigated in more detail in [12].

It is not only absolute amount government spending that is examined in the recent research as a growth factor. In the paper by G. Corsetti and N. Roubini, the relative amount of total spending to the capital stock is considered. The authors show that the balanced-growth rate is a positive function of the public spending-to-capital ratio. The authors explain that, for given tax rates, the magnitude of tax-induced distortions in the economy is constant, while more resources are channeled into the supply of productive services by the public sector; therefore,

² For different years distinct time lags were considered. For some parameters different time-lags had different level of influence on growth. This is largely explained by significant changes in macroeconomic parameters that are not take into account in this model.

the growth rate of the economy is higher. However, a cross-region analysis in Russia shows that the public spending-to-capital ratio has an ambiguous effect on growth.

Structure of public spending. Analysis of the influence of the main spending items on growth reveals a negative correlation between spending on housing and growth. The problem of reforming housing services is very complicated and urgent in Russia. These outlays account for about 20% of regional budgets and their inefficiency is obvious.

Another major budget item is subsidies to the national economy (industry, construction and the agricultural sector) that equal around 10% of total spending. Estimation of the effect of this spending on growth does not show a strong correlation between subsidies and growth. State administration expenditures that are relatively small (5% of total spending) are positively correlated with real growth (with no time lag).

Unfortunately, a rather short observation period does not allow the influence of such important budget expenditure items as social benefits and health care (6% and 13% of total budget, respectively) to be examined. Statistical analysis does not show any relationship between growth and these parameters. Drastic deterioration of health care provision along with the inefficient social policy has been increasing the poverty rate. Which will in the long run affect the overall economic growth

The role of human capital was also studied within the theoretical framework. Human capital was measured as total regional public spending on education and basic research. Statistical analysis shows a substantial positive role of human capital in regional development. This fact is not surprising given the magnitude of the brain drain problem that Russia is facing today and deterioration of the of secondary education quality. Still, the analysis of regional convergence shows a positive impact of human capital on growth (see [12]).

Transfers and financial aid. Many theoretical approaches in public finance consider a problem of efficient distribution of power between central and regional authorities (see [7]). Some papers (for example [11]) argue that local governments distribute funds more effectively and should be given a greater proportion of revenues (region-favorable tax shearing) and more autonomy in managing almost all expenditure (excluding military and some others). In this paper, the hypothesis of relative efficiency of federal budget funds spending is tested.

Overall financial aid to regions can be split into two categories: fiscal transfers and tied centralized fixed investments. The problem with transfers is that the center does not know and does not have control over the channels of spending of these funds by regional authorities. Cross-regional analysis shows that financial aid as a whole has no effect on regional growth. Moreover, there is a negative correlation between transfers and growth, while there is positive influence of centralized fixed investment on growth.

Although these facts contradict theoretical papers on fiscal federalism (more efficient resource distribution of low levels of governments), results of empirical analysis of Russian regions coincide with the results obtained by Mark Jones, Pablo Sanguinetti, and Mariano Tommasi in their paper "Politics, Institutions, and Public-Sector Spending in the Argentine Provinces ([7]).

It can be concluded that currently in Russia the central government implements a more efficient policy than regions themselves. This position can be supported, in addition, by the set of institutional aspects that affect real economic development (like much more transparent federal budget, fiscal discipline, Treasury system), that according to the recent theoretical findings, affect real growth (see [3]).

Credit and investment policies of regional authorities. Analysis of the credit policies of the regions showed that huge credits from public sector to the economy, banks and households made in 1994 had a negative impact on growth in 1998. On the other hand, such credits in 1996 had a positive impact on growth in 1997. This ambiguous effect of credit on growth could be explained by dramatic changes in the macroeconomic environment in the mid-90s that do not often allow stable relations between economic factors across years.

Gross fixed investment had a significant impact on growth in 1995-1999. Moreover, fixed capital investment of the government also positively affects the real growth in the regions during 1997-1999.

VIII. Conclusions

Cross-country comparisons suggest that total Russian public spending is of the same order of magnitude as in developed countries, where it is assumed to be efficient, while it is the structure of gross outlays in Russia that seems to be inefficient. Total Russian outlays standing at around 35% of GDP are sufficient to provide public services, and the prime target of the government is to increase the efficiency of distribution of resources available.

Cross-sectional analysis of the Russian regions shows negative correlation between growth rate and public spending. The growth rate seems to be sensitive to the level of capital investment from the budget in a region and non-sensitive to the amount of budget subsidies provided directly to the regions. A fall in fixed investment was one of the main determinants of the economic breakdown in the 90-es in Russia. However, the amount of budget subsidies evidences the inefficiency of the government outlays structure.

Human resources still play a substantial role in the economic development of the Russian regions. Regions that spend more on education and research are likely to have higher growth in future. Credit policy changed so many times during the 90s that its relation to growth cannot be robust. However, cross-regional investigation confirms that huge government credits in 1994 can be viewed as an important factor of growth decline in 1998.

The analysis of per capita spending in regions shows that social outlays (influencing the number of schools and hospital beds) have a more significant effect on the size of total outlays than law and order spending. This is a direct consequence of a division of authorities between federal and regional governments as regards spending financing. Still, these outlays do not have real effect on per capita income/consumption or growth. Therefore, there is doubt about the efficiency of division of authorities between the center and regions.

References

1. Alesina, Alberto and Perotti, Roberto (1994), "The Political Economy of Budget Deficits", NBER working paper 4637
2. ----- (1995), "Fiscal Expansions and Adjustments in OECD Countries", Economic Policy 21
3. Atkinson, Paul and van den Noord, Paul (2001), "Managing Public Expenditure: Some Emerging Policy Issues and a Framework for Analysis", OECD working paper 285
4. Barro, Robert (1990), "Government spending in a Simple Model of Endogenous Growth", Journal of Political Economy 98, part 2.

5. Barro, Robert and Xavier Sala-i-Martin (1995), "Economic Growth" textbook
6. Corsetti, Giancarlo and Roubini, Nouriel (1996), "Optimal Government Spending and Taxation in Endogenous Growth Models", NBER working paper 5851
7. Fiscal Institutions and Fiscal Performance, edited by James M. Poterba and Jurgen von Hagen (1999), by the National Bureau of Economic Research
8. Monetary of Fiscal Policies, volumes 1 and 2, edited by Torsten Perrson and Guido Tabellini, 1994
9. Corsetti, Giancarlo (1997), "A Portfolio Approach to Endogenous Growth: Equilibrium and Optimal Policy", Journal of Economic Dynamics and Control
10. "Social Crises in Russia" (2000), OECD
11. Lavrov, J. Litwack, D. Sutherland (2001), "Inter-budgetary Relations in the Russian Federation: the Necessity for Tax-budgetary Autonomy of the Sub-national Governments"; OECD: Review of the Russian Federation Economy.
12. F. Carluer, E. Sharipova (2001), "Regional Convergence in Russia? Or When Economic Geography Confirms Macroeconomic Analysis", RECEP, forthcoming

Research findings and analyses disseminated by RECEP may include views on policy, but the Centre itself takes no institutional policy positions. Any opinions expressed are those of the individual(s), and not those of RECEP, the institutions of its managing consortium, the European Commission or any other institution of the European Union.

Russian-European Centre for Economic Policy

Potapovsky Pereulok 5, building 4, Moscow 101000 Russia

<http://www.recep.org>

e-mail: recep@recep.ru

tel +7 (503) 232 3613 fax+7 (503) 232 3739