

## RUSSIAN ECONOMIC GROWTH: PERSPECTIVES AND IMPEDIMENTS

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### *Abstract*

After Russia escaped from the high inflation crisis it became possible to consider strategies for long-term economic growth, and the Russian government announced quite ambitious targets to be achieved by the end of this century. After the long-lasting output contraction the economy was left with extremely obsolete capital stock. It is well recognized by various groups of economists that nowadays investment is a crucial point for Russia, but investment is still falling: neither domestic nor foreign investors are eager to invest in the real sector. Based on an analysis of historical data this paper seeks to discuss the impediments that hamper economic recovery in Russia.

### *Introduction*

It is well documented in the literature that transition from a planned to a market economy creates a need for economic restructuring. The unprecedented economic contraction that one could see in Russia in the 1990s also resulted in drastic changes in the output structure. Liberalization of the economy exerted a powerful impact on the development of the service sector and the expansion of foreign trade (especially to the non-CIS countries) that somehow counteracted the fall in domestic demand. Russian exports grew from 53.6 billion US dollars in 1992 to 87.7 billion in 1996. So, the country's industrial output depends greatly on the changes in the output of the energy sector and metallurgy which together account for 55 percent of the large- and medium-scale enterprises' output. Expanding exports of raw materials and semi-finished products prevented a deeper output collapse, but they can scarcely stimulate economic growth in the long-run.

As seen in Table 1 the share of the service sector increased to nearly one-half of GDP as of 1996 from some one-third as of pre-reform 1990, but in the long-run Russia should scarcely count on further expansion of services without growth in the real sector. The high inflation that followed liberalization created a fruitful soil for the development of the banking system, financial markets, and other intermediary activities, but the transformation of the macroeconomic environment in 1995–1996 created new questions concerning future development of the Russian economy.

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TABLE 1. COMPOSITION OF THE RUSSIAN GDP  
(in percent)

	1990	1991	1992	1993	1994	1995	1996
GDP	100	100	100	100	100	100	100
of which:							
Goods	60.5	59.8	46.2	45.4	44.3	46.3	42.6
Services	32.6	36.5	52.0	45.5	47.9	45.7	49.1
Net taxes	6.9	3.7	1.8	9.1	7.8	8.0	8.3

Source: Goskomstat RF

Recently the country escaped from the high inflation crisis, but more important was that the government had developed enough skills and demonstrated abilities to keep on controlling inflation and financial markets. Thus, despite many unresolved current problems, such as arrears, poor tax collection, etc., there appeared a real background for the analysis of long-term growth strategy and structural transformation. This paper intends to analyze some of the related problems to be solved in order to find a reliable approach for sustainable economic growth.

It used to be that output decline and inflation were considered in the literature as the most topical problems of Russia's transition. The relationships between these two macroeconomic variables have been studied thoroughly in the economic literature (see, for instance, recent publications in this area by Sarel (1996) and Easterly (1996)). It is widely accepted that high inflation has a powerful negative impact on economic growth. The evidence from developed, developing and transitional economies supports this point of view. The Russian government was very much concerned about high rates of price increases and since 1995 decisive measures have been undertaken in order to bring inflation down. As a result annual inflation in 1996 was only 21.8 percent in stark contrast to 18 percent as of January, 1995, or 130 percent over the whole of 1995. Inflation in 1997 is expected to be lower than in 1996. Nevertheless, as is accepted by a wide group of economists, inflation in Russia is still too high and it should be further reduced to single-digit levels in order to create a better macroeconomic environment for investors and to stimulate economic growth.

The success in fighting inflation inspired high-ranking Russian officials to announce that macroeconomic stabilization, the predecessor of stable economic growth, had been achieved, and it became possible to consider seriously medium and long-term strategies for economic growth. Drafts of the medium-term (1997–2000) economic program and the concept of economic development strategy (supplemented by the forecast) have been recently designed under the supervision of the Ministry of Economy. The main emphasis of these documents is on further slowing of inflation (to the annual level of 7 percent in 1999–2000, and to the average level of some 4 percent in the years 2001–2005) and structural reforms. A detailed plan of measures to be undertaken in the years of 1997–2005 is also presented in the above documents. As one could see from the alternative (“pessimistic”) scenarios of the Russian government, even a slightly higher rate of inflation negatively affects production: recovery is delayed and the rates of economic growth are essentially lower, which follows in the wake of IMF ideology and fits well with Sarel's (1996) results.

Not only the Russian government, however, but many economists are convinced that

inflation is undesirable and that it should be avoided. Sarel's result, based on a vast number of cross-country studies (including developed, developing and transitional economies), suggests that if the level of annual inflation is expected to be higher than 8 percent, then a structural break in the function which links output and price changes may occur, which indicates a negative impact of price increases on output. The same relationships between inflation and GDP growth were obtained by Fisher, Sahay and Vegh (1996) for transitional economies.

On the other hand, however, evidence from some countries in transition (Poland, Hungary, Romania and others) shows that annual inflation varying between 20 to 40 percent is a quite usual phenomenon. In the case of Poland, where transformation appears to be most successful among other Eastern European countries, inflation in 1994–1995 was above 30 percent, while economic growth began in 1992 with 43 percent inflation. The Chinese experience also suggests the acceleration of economic growth in the early 1990s was accompanied by high rates of price increases (about 20 percent).

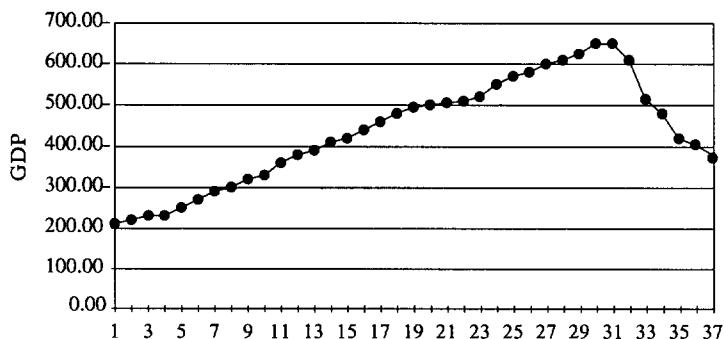
This paper has no intention to argue for or against the economic development strategy of the Russian government. One would scarcely argue against such targets as low inflation and high rates of output growth. As was said, the main emphasis of the paper is to discuss some of the topical problems of the Russian economy in the long run and the impediments that make difficult the realization of the government strategy.

### *Background*

It is conventional wisdom that sooner or later the Russian economy will recover. The remaining problem, however, is when it will happen, and what should be done in order to speed up the recovery and sustain economic growth. Despite drastic revisions to estimates of the output contraction of 1991–1994 carried out by Goskomstat in the fall of 1995, the decline in Russian GDP looks rather large: in the mid-1990s GDP dropped to the level of the early 1970s (Fig. 1).

The comparisons between 1996 and the 1970s have, of course, a conditional character:

FIG 1. RUSSIA'S GROSS DOMESTIC PRODUCT IN 1960–1996  
(at fixed prices)\*



\*GDP statistics for 1960–1990 are taken from Kuboniwa's (1996) estimates

FIG 2. INVESTMENT TO OUTPUT RATIO IN 1960–1996

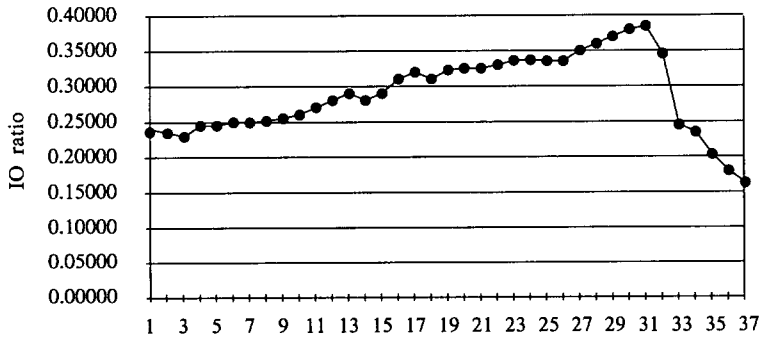
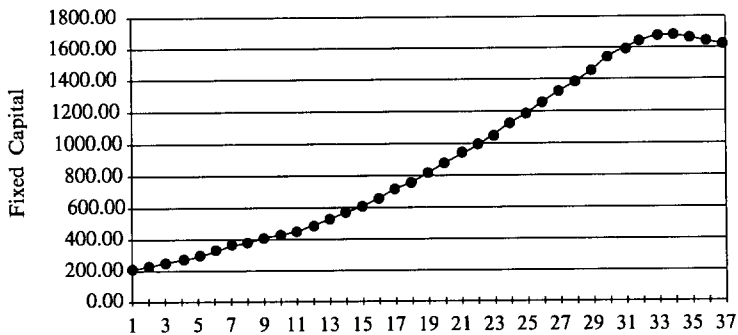


FIG 3. CAPITAL STOCK IN RUSSIA IN 1960–1996



one should take into account the production of a great variety of wrong goods in Soviet Russia not demanded by the society, but distributed by the administrative system.

According to Goskomstat, the contraction of investment is much deeper than that of output: investment in 1996 amounted to 25 percent of the 1990 level. At the same time regular statistics indicate that investment to output ratio dropped 2.5 times in 1996 compared to 1990 (Fig. 2).

Contrary to data suggesting that the Russian economy in the 1970s–1980s was over-invested, one could see that in the 1990s it became essentially underinvested. Fig. 3 shows that capital stock began to decrease from 1993. Moreover, the average age of fixed equipment in industry has been constantly rising during the last decades, and this process accelerated significantly in the 1990s. (Table 1).

So, as one can easily see from regular Goskomstat statistics, the dynamics of such factors of production as capital can scarcely be related to the possibility of rapid growth in the near future. In the early transition relative prices for domestically produced commodities were essentially below world market prices, and domestic production was still competitive on the domestic market (which concerns manufacturing in the first order). But after relative prices nearly attained the level of the world market obsolete capital stock created much more serious

TABLE 1. AGE STRUCTURE OF EQUIPMENT IN INDUSTRY  
(as of the end of the year, in percent)

	Total equipment	to 5	of which at the age of (years):				Average age
			5 to 10	11 to 15	16 to 20	more	
1970	100	40.8	30.0	14.0	6.9	8.3	8.42
1980	100	35.5	28.7	15.6	9.5	10.7	9.47
1990	100	29.4	28.3	16.5	10.8	15.0	10.80
1991	100	26.6	28.9	17.1	11.3	16.1	11.30
1992	100	22.8	29.4	18.2	12.0	17.6	11.98
1993	100	19.0	29.5	19.5	12.8	19.2	12.69
1994	100	14.7	29.8	20.7	13.8	21.0	13.41
1995	100	10.9	29.5	21.7	14.9	23.0	14.13

Source: Goskomstat, RF, Statistil Yearbook 1996

problems than in earlier years.

Table 2 shows installation and depreciation of fixed capital by industries. It is seen that in 1994-1995 installation of new capital exceeded depreciation only in the energy sector and in ferrous metallurgy, i.e. in the sectors that gained from exports.

While equipment in manufacturing is becoming more and more obsolete, employment is also falling in Russia (Fig 4), though its decline is not so deep as that of output.

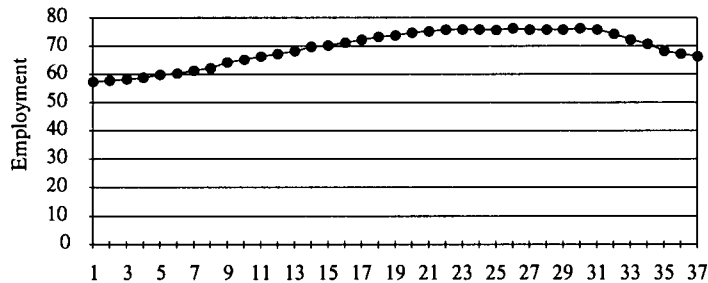
Russia's macroeconomic crisis is well documented in the literature (for instance, see Vieira da Cunha and Easterly (1993)). Regular statistics, however, indicate permanent changes in macroeconomic performance, but due to the limited length of the paper we cannot

TABLE 2. INSTALLATION AND DEPRECIATION OF FIXED CAPITAL BY SECTORS  
(by the end of the year, as a percentage of fixed capital)

	1990		1991		1992		1993		1994		1995	
	Inst	Depr	Inst	Depr	Inst	Depr	Inst	Depr	Inst	Depr	Inst	Depr
Industry	6.9	1.8	5.3	1.7	3.0	1.1	2.0	1.5	1.8	2.0	1.5	1.6
of which:												
Electricity	4.0	0.5	2.3	0.4	1.9	0.3	1.4	0.4	1.6	0.5	1.3	0.4
Fuel	8.1	1.5	6.2	1.1	5.2	0.9	3.8	1.5	3.4	2.2	2.8	1.7
Ferrous metallurgy	7.5	1.2	3.6	0.9	2.9	0.7	1.9	1.1	2.6	1.5	2.2	1.2
Non-ferrous metallurgy	5.7	1.8	4.7	1.6	3.3	1.0	2.2	2.0	1.4	2.8	1.2	2.2
Chemistry	4.1	1.5	3.2	1.4	2.0	1.8	1.4	2.2	1.0	2.5	0.9	2.0
Machine-building	6.6	1.6	4.2	1.3	2.4	1.0	1.0	1.4	0.9	1.6	0.7	1.3
Timber, wood-working and paper	6.8	3.5	5.8	3.4	3.2	2.3	1.3	3.1	1.0	4.2	0.8	3.3
Construction materials	5.4	3.3	4.8	2.4	2.3	1.4	1.3	2.2	1.1	3.0	0.9	2.4
Light	8.4	2.2	5.9	2.5	2.6	1.2	1.5	2.1	0.9	2.4	0.8	1.9
Food	7.4	2.3	6.9	2.1	6.1	1.0	5.7	2.7	3.4	3.5	2.8	2.8

Source: Goskomstat RF, Statistical Yearbook 1996

FIG 4. EMPLOYMENT IN 1960–1996  
(million people)



cover many important issues related to the short-run problems of the country's transformation. The only fact to be emphasized here is that the country experienced "artificial" economic growth in the second half of the 1980s: stable growth of GDP (Fig. 1) at the background of a relatively stable level of employment (Fig. 4) and stable growth of the capital stock (Fig. 3) was maintained by increasing investment (see Fig. 2 indicating rapid growth of investment-to-output ratio since 1985). The economy got accustomed to investment injections that allowed it to maintain GDP growth despite the falling efficiency of artificial investment demand. No account was taken of the real necessity of such investment.

As the average period of construction in Russia is enormously long relative to other countries, most of the projects launched in the 1980s remain unfinished. They can scarcely be accomplished in the near future if financing from the national budget is lacking, while the private sector will not be eager to finance inefficient old-style projects related to the former economic system.

### *Economic Transition*

A historical analysis of the Russian economy based on Figures 1–4 may also be illustrated by interpreting the economy as a dynamic system that can be characterized by a number of variables in multi-dimensional space. In this case the trend can be projected on various planes, such as on Fig. 5–8. Fig. 5 represents the relationships between investment (horizontal axis) and GDP (vertical axis) in terms of percentage changes in 1961–1996. It is clearly seen that since 1992 the Russian economy underwent a change of regime, while before this the system (economy) was oscillating within some equilibrium neighborhood.

The same can be illustrated by projecting the trajectory on some other planes: say, GDP and employment (Fig. 6) or GDP and fixed capital (Fig. 7). In all cases it is seen that the system moved from one neighborhood of equilibrium to another area.

The behavior of an economy in transition as a non-linear dynamic system has been pointed out by various authors, though theoretical considerations are lacking support from empirical data. On the other hand there has also been little success in attempting to analyze the Russian economy with the help of production functions (say, Cobb-Douglas type). The deep fall in output can't be captured by the moderate changes in capital stock and employment. As

FIG 5. RUSSIAN INVESTMENT AND GDP in 1961-199  
(percentage changes)

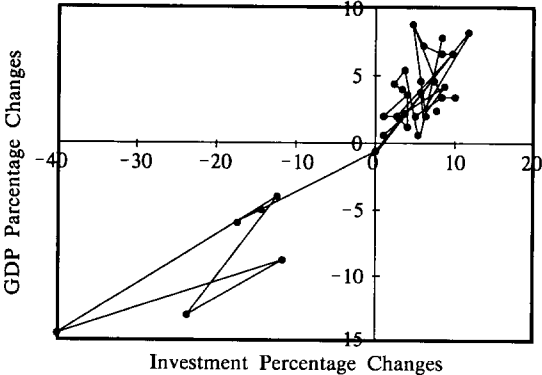


FIG 6. EMPLOYMENT AND GDP  
(percentage changes)

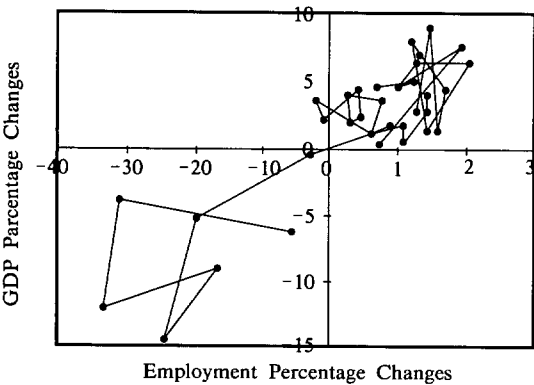
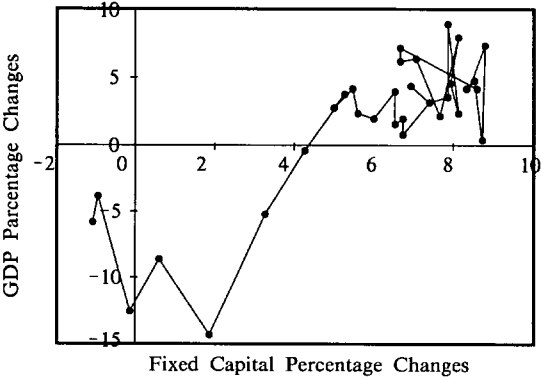


FIG 7. FIXED CAPITAL GDP  
(percentage changes)



one could imagine from Fig. 5-7 sharp changes in the system's behavior make it difficult to employ traditional production functions. In this sense it seems useful to consider investment (or investment-to-output ratio) as an exogenous variable and modify it slightly.

Let

$$Y = A * K^{\alpha} * L^{1-\alpha} \quad (1)$$

be a Cobb-Douglas production function with  $Y$  as output,  $K$  as capital,  $L$  as labor. Equation (1) can be also presented in the next form:

$$Y^{1-\beta+\beta} = A * K^{\alpha-\beta+\beta} * L^{1-\alpha}$$

or, dividing both parts by  $Y^{\beta}$ , as:

$$Y^{1-\beta} = A * K^{\alpha-\beta} * (K/Y)^{\beta} * L^{1-\alpha}$$

Suppose  $K$  is a simple function of investment  $I$ , say,  $K = \delta * I$ , then

$$Y^{1-\beta} = A * \delta^{\beta} * K^{\alpha-\beta} * (I/Y)^{\beta} * L^{1-\alpha}$$

Denoting  $R = I/Y$  as investment-to-output ratio, and introducing new coefficient  $\gamma = A * \delta^{\beta}$  allows us to consider a modified production function of the following type:

$$Y = (\gamma * K^{\alpha-\beta} * R^{\beta} * L^{1-\alpha})^{1/(1-\beta)} \quad (2)$$

Introducing the investment-to-output ratio in production function (2) allows us to make some kind of decomposition of capital: on the one hand  $K$  can be interpreted as "old" capital stock that can scarcely allow an increase in production of competitive goods, while  $R$  is mostly tied to the "new" (modern) capital stock installed in the short-run and oriented to production of demanded commodities.

In simpler form a production function with investment-to-output ratio can be presented as

$$Y = \theta * K^{\alpha} * R^{\beta} * L^{1-\alpha-\beta} \quad (3)$$

It should be noted that Equation (3) is a substitute for production function but not a pure production function because  $R$  is not a production factor.

The estimated regression (3) is as follows:

$$Y = 116.329 * K^{0.292} * R^{0.658} * L^{0.050} \quad (4)$$

$R^2 = 0.99$   $DW = 1.36$ . The same results can be obtained for the function given by the form (2). In both cases econometric analysis suggests that the impact of changes in investment on changes in output in the transitional period is essentially higher compared to the influence of existing capital stock or labor. The necessity of investment is well recognized by the Russian



government.

### *Problems*

Russia's potential for economic growth is widely recognized, though the country still has not fully realized it despite various intentions of the government. As was seen from (4) investment is a crucial point at the moment.

Goskomstat reported that in 1996 centralized investments (from the federal budget) accounted to 34 trillion rubles (some 6.5 billion US dollars or 1.5 percent of GDP). Local governments also invested in fixed capital about 1.5 percent of GDP. The rest of investment came from private sources (a bit more than 10 percent of GDP), which was mainly investment in the energy sector. Decentralization of investment has been a declared priority of the government economic programs of 1992-1995. Now it is obviously clear that the government can not significantly increase centralized investment in the near future.

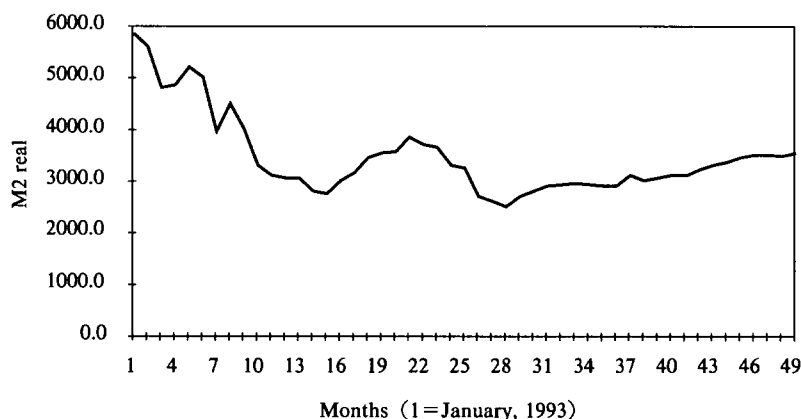
At the same time the private sector fails to obtain financial assistance from the banking system because of the continuous liquidity crisis. Due to a great number of bad debts and high credit risks banks are not eager to allocate money to the real sector. The interest rate for credit for the corporate sector is several times higher than the rate of inflation. Despite success in reducing the rate of return for the T-bills (which was below 30 percent in early 1997) the maturity of the government securities is still too short (about half a year on average). Thus investment in T-bills attracts the bulk of money. Elimination of such distortions may take a rather long time.

The internal debt of the Russian government (as well as foreign debt) creates serious problems for macroeconomic policy. Early in 1997 the stock of T-bills in circulation accounted to some 255 trillion rubles which is rather large compared to M2 (which was reported as 295 trillion rubles as of January 1, 1997). Debt management and the necessity to monetize (at least partially) existing money substitutes will require further issue of T-bills. According to the Ministry of Finance the expenditures on debt service reached 2 percent of GDP in 1995. It is likely that debt service as a percentage of GDP will reach 4 percent of GDP in 1997. In these circumstances the government can scarcely find money for fixed investment and pursue any active industrial policy targeted at the restructuring of the national economy.

The private sector also faces serious constraints. Credit, as was mentioned, remains extremely expensive for the real economy. This problem also originates from the fact that the stock of money in circulation in Russia seems to be not very large, even though it has been growing steadily in real terms since 1995 (Fig. 8). Moreover, the bulk of this money (some 75 percent) is household money (cash in circulation plus household deposits). Household deposits are allocated mainly (nearly 75 percent) in the Savings Bank ("Sberbank") that is also used for financing of the government deficit, as Sberbank owns the bulk of government securities (Table 3) and to some extent is used by the government to regulate financial markets.

It is also seen from Table 3 that the lack of money forces the Central Bank to actively purchase T-bills, which means direct money creation. Finally it appeared that by mid-1996 state-controlled banks owned the bulk of government securities, contrary to the situation of last year when the commercial sector owned some one-half of the GKO. This indicates that the commercial sector as well as the real sector faces liquidity problems. Growth of the money

FIG 8. REAL MONEY SUPPLY IN RUSSIA IN 1993–1996

TABLE 3. ALLOCATION OF THE GKO BY OWNERS IN 1996  
(in percent)

as of:	01.01.96	01.02.96	01.04.96	01.08.96	01.10.96	memorandum item 01.05.95
Central Bank	36.6	37.1	37.7	36.8	31.8	25.2
Sberbank	30.5	32.2	36.9	41.2	44.0	24.8
Vneshekonombank	0.5	0.4	0.6	0.7	0.6	1.1
Commercial banks	32.5	30.3	24.8	21.3	23.6	48.1

Source: Central Bank RF

supply in real terms is expected in the long run, but the existing stock of money is far from being sufficient for long-term investments.

The Russian banking system is not ready to provide credit to the real sector. Even if the rates of return for T-bill start to fall close to the rate of inflation one should not expect an immediate explosion of credit for investment in the real sector. As was seen, the bulk of money in circulation is household money, allocated by Sberbank. This bank, however, can not serve as an investment bank. The rest of the commercial banks should develop their services for the household sector and compete with Sberbank in the sense of reliability. They should also avoid distinguishing between enterprise and household money. Then they can really act as intermediaries between savings and investment. This is also not a task to be accomplished in a single year.

Lacking domestic investments, attracting, foreign capital was the other government priority. Despite these intentions, however, foreign direct investment in 1996 was estimated as some 1.5 billion US dollars (in stark contrast to more than 40 billion US dollars of capital inflow to China). The bulk of capital inflow to Russia was allocated on financial markets from which it is easy to escape in case of emergency.

Investors do not consider investments in fixed capital in Russia as reliable yet. Unclear legislation, poor property rights protection, complicated and unclear Soviet-type book-keeping

that hampers financial analysis of Russian enterprises, and continuous political instability remain serious obstacles for investors. While most Central and East European countries declared their desires for integration into Europe, even moderate Russian politicians are often talking about “strong Russia”, “national interests” in the neighboring CIS countries, etc. Thus there is a serious risk that Russia may be left out of the process of integration with the rest of the world. So from investors’ point of view political risks in Russia remain much higher than in Central and Eastern European countries. Frequent reshufflings among top officials and frequent changes in government priorities create a rather unfriendly environment for investors. And such long lasting uncertainty is, perhaps, the main impediment for economic recovery in Russia.

### *Strategy*

While serious investors keep on watching development of the political and economic situation in Russia, and potential domestic investors try to keep money abroad (the annual trade surplus in Russia has varied between 18 to 28 billion US dollars for several years) all government declarations about rapid economic growth have little sense. In the first order it is necessary to stabilize the institutional framework and rules of the game in the country on a democratic basis.

From the very beginning Russian reforms were considered as liberal and democratic reforms. Natural difficulties that followed the liberalization, however, forced the government to intervene more and more, frequently changing the rules of the game. As in the former system most of the government regulations appeared to be inefficient: side effects after solving particular problems immediately created a number of new difficulties. The legal environment in the country can’t be considered at the moment as perfect: political uncertainty, corruption, bureaucracy, and crime create a lot of problems for private business. Elimination of such impediments should be considered as the most urgent step in promoting a long-term economic growth strategy. Tax reform should also be considered one of the government’s top priorities.

Establishing a proper legal system as soon as possible is of great importance due to the expected re-allocation of property. It is well recognized that the accumulated stock of inter-enterprise arrears is too big. Even if it stops increasing, debtors will be not able to cover their liabilities. Thus net creditors (such as enterprises of the energy sector, or banks), in order to cover their losses, can take shares of their debtors’ assets instead of money. On the positive side, however, such reallocation of property may essentially improve management. On the negative side, concentration of capital may negatively affect competition.

Elimination of macroeconomic distortions is also of great importance, but it seems to be secondary compared to the distortions in the legal framework. Only after establishing a proper legal system will it seem reasonable to talk about active structural policy and sustained economic growth based both on mobilization of domestic savings and capital inflows. In these circumstances, however, the government should be ready to reject dogmas that affected its policies during past years of transition. For instance, the authorities had already shown their abilities to control the monetary system and inflation. Capital inflow may require additional efforts to sterilize currency and may cause higher inflation than targeted by the government in the long run. Thus priorities in the long run should be shifted to growth maintenance, but not

to further unconditional slowing of inflation. In addition, many other problems related to institutional reform need to be solved in the near future.

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