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Russia's Debt Crisis and the Unofficial Economy

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Abstract:

Russia's foreign debt problems worsened substantially after the financial crisis of 1998. The paper focuses on the key role of the government in servicing foreign debt and promoting institution building by showing how foreign debt influences the choice between official and unofficial taxation. The enterprise sector is assumed to reallocate its resources between domestic investment and capital flight. It is discussed under which conditions debt rescheduling may create incentives for the government to promote institution building. The results of this paper shed light on the conditions under which the recent agreement with the London Club to write off substantial amounts of former Soviet debt can be successful.

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1 Motivation

On the verge of the new millennium, the Russian economy faces a set of adverse conditions. Looking back to a decade of failed transformation characterized by an almost constant deterioration of gross domestic product (GDP), an even greater fall of investment, and a substantial decline in living standards, prospects for sustained economic recovery look dim. Although the devaluation of the ruble that accompanied the financial crisis of 1998, coupled with an increase in world commodity prices, has improved the price competitiveness of firms and has thus contributed to a recovery in industrial output and investment,[1] institutional reforms have not been pushed ahead decisively as yet. This is one reason for the fact that capital flight remains prevalent. At the same time, Russia has virtually lost access to international capital markets after the crisis because of its default on parts of its foreign debt and because of a worsening of most of its traditional debt indicators. Mainly, Russia's foreign debt problem is a fiscal one. However, regaining access to foreign capital markets is a key issue for the Russian economy as a whole.

This is the setting in which the on-going negotiations of Russia with its foreign creditors take place. Although, in August 1999, the sovereign debtors of the Paris Club agreed on an interim solution which foresees a quite substantial debt restructuring, a final agreement is still pending. In February 2000, Russia and its private, London Club creditors eventually reached an agreement to write down about 36 percent of Russia's debt inherited from Soviet times. Debt relief granted by the Paris Club was still under discussion at the time of writing.

This paper discusses under which conditions debt relief will be successful. The restructuring of Russia's foreign debt is, of course, not unprecedented. For Russia itself, creditors have earlier on agreed to reschedule Soviet-era debt. Likewise, debt restructuring has been an issue for many developing countries and emerging markets, notably in Latin America.[2] At a risk of over-generalizing, some lessons can be drawn from these earlier experiences. On the borrower's side, successful fiscal adjustment was perhaps the most essential

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[1] For a review of recent economic developments in Russia see Russian Economic Trends (2000).

[2] These experiences have been thoroughly reviewed in World Bank (1992-93), UNCTC (1989), Krugman (1989a,b), IMF (1993), Cline (1995), Bowe and Dean (1997).

factor that contributed to an effective recovery from the debt problems. Also, implementation of various debt-restructuring schemes, though an important vehicle in reducing the debt burden, was typically conditional upon improvements in the macroeconomic situation and the institutional setup in the borrower countries.

These earlier episodes share many similarities with Russia but also differ in a number of important regards. Key characteristics of the Russian economy such as the dominance of public debt, and hence the importance of an internal transfer problems in debt performance, or the prevalence of capital flight, were also observed during the debt crises of the 1980s. Yet, Russia differs from other developing countries and emerging markets because the abolition of inherited and the creation of new institutional structures is a much more tedious process than in those economies where market-based institutions had already been in place. Socialist economies were not only branded by the coexistence of central planning and an informal sector, but also by non-cash payments and offsets between the enterprise sector and the government. While the implementation of market-oriented institutions takes time, the institutional framework of the Perestrojka era — an unsound mixture of the two systems — has still been in existence. Thus, Russia's unofficial economy is based on inherited structures for hidden, unreported transactions and old, but sophisticated networks of agents. The crisis of 1998 in itself has been a reflection of the deep crisis of the Russian state and an open manifestation of the weaknesses of the existing institutions.[3]

In addition to other forms of hidden and illegal economic transactions, such as corruption and shadow economy operations, non-cash payments are one of the major characteristics of the Russian unofficial economy (Table 1). Moreover, the legal framework itself actually allows for the existence of such a system of unreported payments, where the state is typically a major player.[4] [5]

Not surprisingly, the institutional weaknesses most prevalently manifest themselves in the fiscal sphere. The inability of the government to institute a proper tax system, or, in other words, to replace implicit, unofficial means of

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[3] Generally, the Russian financial crisis shares elements both of a classical currency crisis characterized by tensions between the exchange rate regime and domestic policies (Flood and Garber 1984) and of a combination of banking and balance of payments crises, i.e. a "twin-crisis" (Goldfajn and Valdes 1997, Buch and Heinrich 1998).

[4] Additionally, it is necessary to distinguish between misreporting because of the technical inability to gather information or because of deliberate, hidden transactions.

[5] For a broader discussion on characteristics of the unofficial economy in the transition countries see Kaufman and Kaliberda (1996).

taxation by official means, is thus a feature peculiar to the Russian economy. From the point of view of a potential investor, such an opaque tax burden increases uncertainty about future returns distorting incentives for productive investment activities.

The purpose of this paper is to provide a framework for analyzing Russia's debt problem which takes the special role of the unofficial economy into account. In a first step, we give a brief account of Russia's foreign indebtedness as well as of Russia's external and fiscal developments (Section 2). We proceed by presenting a stylized model of the economics of debt restructuring which takes account of the trade-off between official and unofficial means of taxation for the Russian government (Section 3). The model shows that the share of official versus unofficial taxation is a key policy parameter in the hands of the government to affect the sustainability of its foreign debt. Section 4 concludes and summarizes the main lessons.

2 Russia's Debt Crisis

2.1 Foreign Debt Situation

Following a substantial devaluation of the ruble in the wake of the currency crisis of 1998, most foreign debt indicators of Russia have worsened significantly (Table 2). This effect has already been visible in 1998 but has become even more pronounced for more recent data. These show an increase in the ratio of debt-to-GDP from about 26 percent prior to the crisis to more than 100 percent.[6] Measured in relation to GDP, Russia's debt burden had thus been below the average of developing countries (33-35 percent) prior to the crisis but considerably exceeded the average afterwards. Other debt indicators have worsened as well. Foreign currency reserves, for example, are extremely low: the ratio of currency reserves to debt has fallen from 14 to 6.6 percent as compared to an average value of over 28 percent for developing countries.

The size of a country's foreign debt certainly has an important impact on its ability to service its liabilities. At the same time, the structure of the debt in terms debt instruments, the maturity, and the structure of the creditors matters as

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[6]   This figure uses data for the period June 1998 through May 1999.

well. Hence, in the remainder of this section, an overview over the structure of Russia's foreign debt and the status of its debt negotiations is given.

2.1.1   Structure of Foreign Debt

Almost half of Russia's external debt obligations originates from Soviet time (Table 3). After the collapse of the Soviet Union in 1991, Russia, as the biggest successor country, assumed foreign liabilities and a substantial share of foreign assets of the former USSR. After several restructuring arrangements and repayments, the face value of these obligations as of the end of 1998 totaled around US-dollar 100 billion, or 55 percent of total foreign currency debt. New credits raised by the Russian government and non-sovereign borrowers amounted to 30 percent and 17 percent of total debt, respectively.[7] Through the debt restructuring agreement reached with the London Club in February 2000, Russia's foreign debt has been reduced by about 11 billion US-dollar (see Section 2.1.3).

Debt obligations against multilateral creditors (47 percent) and Eurobonds (29 percent) constituted the largest shares in the post-Soviet debt, whilst the debt against the Paris Club official lenders (40 percent) and against the London Club of private lenders were the major components of the Soviet-era debt. Credits of the Paris Club have not been securitized, while London Club claims have been restructured into tradable securities that correspond to the nominal value of the credits (PRINs – principal notes) and to the capitalized interest payments (IANs – interest arrears notes). In the group of non-sovereign debtors, Russian banks have had the largest share with almost two-thirds of total foreign debt.

The Russian Federal Government is the main debtor to foreigners. However, until the recent debt restructuring deal, London Club debt has been held by the state-owned Vnesheconombank.[8] In contrast to the government, Vnesheconombank can, in principle, be subject to a foreign jurisdiction. Particularly, part of the London Club debt has been contracted under British law. Creditors were thus not entitled to seize directly the assets of the Russian government, but only those of Vnesheconombank. Although Vnesheconombank has claims on the Russian Government, on former state-owned enterprises, for which investment credits had been raised from abroad, and on debtors of the former Soviet Union, the market price of its assets is very low. As of the end 1998, the face value of

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[7]   The total does not sum up to 100 percent because resident Eurobonds and Minfins holdings are also included into the total debt, whereas non-resident holdings of GKOs/OFZs are excluded.

[8]   According to an agreement with 17 Paris Club creditors signed in 1992, Vnesheconombank acts as a debt manager, but not the debtor, against the Paris Club.

claims against countries such as Cuba, Syria, Mongolia, Afghanistan, Iraq or North-Korea amounted to around US-dollar 130 billion, of which US-dollar 93 billion were overdue (Vnesheconombank 1999).[9]

2.1.2 Debt Repayment Schedule

In the years 1994-98, Russia paid US-dollar 30 billion in foreign debt service or 10 percent of debt-service due. As Table 4 shows, principal repayments have tended to decrease, whereas payments of interest have increased. Post-Soviet debt has been serviced timely, but Soviet-era debt has partly been repudiated. As of the end 1998, arrears totaled 11 percent of the Soviet-era obligations. In 1999, total debt service due amounted to US-dollar 17.5 billion (DIW et al. 1998). In the first half of the year, US-dollar 4.5 billion has been serviced, and further payments of US-dollar 4 billion had been projected by the end of 1999 (Finansovie Izvestia, 15.7.1999 and 29.7.1999). The major part of these payments has been made using foreign exchange reserves of the Central Bank as well as newly received IMF credits.

In the years 2001-2010, projected debt-service of the Russian Government amounts to around US-dollar 11 billion annually.[10] A sharp increase in payments to US-dollar 16 billion is expected in the year 2003 due to a redemption of Eurobonds. Debt-service will be distributed relatively equally between principal repayments and interest service, while the latter will exceed the former until 2002, and will fall short of principal repayments after 2003. A decrease in debt service is expected only after 2009. To this, foreign debt-service of US-dollar 5-6 billion annually by the private sector must be added. However, since these credits are mostly short term, their amount will decline relatively fast.

2.1.3 Debt Negotiations

Since the breakup of the former Soviet Union and Russia's acceptance of the Soviet external liabilities, both the Paris and London Club debts have been subject to a number of rescheduling arrangements (Table 5). However, those arrangements did not prove to be a sustainable and sound solution to Russia's external debt problem. In addition, the systemic financial crisis in mid-1998

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[9] These claims give Russia a special role as it acts both as a creditor and debtor in the Paris Club.

[10] This figure assumes that no new borrowing takes place but takes the debt rescheduling agreements reached with the London Club in February 2000 into account (Handelsblatt 22.2.2000). The figure does thus not correspond fully to those reported in Table 4.

showed the extreme vulnerability of Russia's external debt position and necessitated urgent resumption of debt restructuring negotiations with all its creditors. Negotiations between the Paris Club and Russia were stalled immediately after the crisis, however, because the IMF had suspended its programs with Russia. Since Paris Club negotiations are conducted only with those debtors that have credit arrangements with the IMF in place, the continuation of negotiations with Russia's official creditors depended upon Russia's successful conclusion of a new IMF credit arrangement, which eventually happened at the end of April 1999.

A temporary agreement with the Paris Club was reached in August 1999. According to the agreement, about US-dollar 8 billion of payments due between 1999 and 2000 will be repaid over 15-20 years. In 1999-2000, Russia will have to pay only some US-dollar 600 million (RFE/RL 2.8.1999). Russia expects to pursue further negotiations with the Paris Club in the second half of 2000 seeking terms for rescheduling its Soviet-era debt to Paris Club creditors similar to those most recently agreed with the London Club (RFE/RL 14.2.2000).

The agreement, eventually reached between Russia and the London Club in February 2000, entails a write-off of 37.5 percent of face-value the face value of PRINs and of 33 percent of those of IANs. The remainder will be restructured into a 30 year maturity eurobond with a seven year grace period. The eurobond will be a Russian sovereign one, *pari passu* with, and cross-defaultable into, other post-Soviet Eurobonds. The exchange is likely to be offered in the second quarter of the year 2000, whereas the total deal may be made into an official legal document at the end of May (Goldman Sachs 2000, RFE/RL 14.2.00). Such debt restructuring improves creditors' position by ensuring a higher seniority of their claims, and could serve as a strong impetus for Russia's renewed access to international capital markets.

In addition to the public sector, Russia's private borrowers have also experienced serious problems in their foreign debt servicing. As a response to the August 1998 financial crisis, temporary restrictions on capital account foreign exchange operations by Russian residents were imposed. This, first of all, included bank and corporate debt to foreign creditors estimated at US-dollar 40 billion at that time, and US-dollar forward contracts of about US-dollar 10 billion. However, private debt settlement has become even more complicated as

Russia needs to initiate a large-scale restructuring of its banking system, a process which is likely to drag on for a considerable amount of time.[11]

2.2 Current Account Sustainability

Pursuant to the currency crisis of 1998, Russia's debt burden has increased not only in relation to GDP but also relative to its exports from about 120 to 200 percent after the crisis. Falling oil prices through 1998 are a major reason for this decline. Still, the ratio remains below the threshold value beyond which the IMF considers the sustainability of foreign debt as critical (200–250 percent) (IMF 1997: 17). The ratio of debt service over exports has likewise increased from 6.5 to 8.8 percent, but remains below that of the average developing country (17.6 percent).

Russia's debt servicing capability depends crucially on the development of its current account surplus. This, in turn, is largely determined by the evolution of the real exchange rate and the world market prices of Russia's main export products, oil and gas. With the fall of oil prices in 1997 and 1998, Russia's trade account surplus dropped from about 20 billion US-dollar in 1995–96 to around 15 billion US-dollar in 1997–98. In 1999, data for the first nine months indicate an increase of the surplus over and above 25 billion US-dollar, reflecting both the real depreciation of the Ruble and the recovery of oil prices (RECEP 1999).

To show the link between the real exchange rate and the trade account more systematically, the following error-correction equation has been estimated:

$$(1) \qquad \Delta TA_t = c + (\alpha_0 - 1)\left[TA_{t-1} - \beta X_{t-1} \right] + \sum_{i=1}^{n-1} \alpha_i \, \Delta TA_{t-i} + \sum_{i=0}^{m-1} \beta_i \, \Delta X_{t-i} + \varepsilon_t$$

where TA = Russia's net exports (CIS *and* non-CIS) in US-dollars, deflated by US consumer prices. The index of Russia's industrial production (Y) and the real exchange rate index (Ruble versus US-dollar) (RER) were used as explanatory variables (X). We expect a real devaluation (i.e. an increase in RER) to improve the trade account surplus in the mid- to long-run whereas the short-run effect may be negative due to the slow adjustment of quantities (J-curve effect). An increase in domestic industrial production could, on the one hand, improve the trade account as part of the increase would be exported. On the other

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[11] See Buch and Heinrich (1999) for a more detailed treatment.

hand, increased industrial production may stimulate higher imports of inputs and may thus lower the trade account surplus.

All variables are taken in logs and are seasonally adjusted by the multiplicative technique implemented in EViews.[12] Specifying the model as an error-correction model implies that changes in the trade account surplus are determined both by deviations from long-run equilibrium (the error-correction-term in brackets) and by short-term changes in endogenous and exogenous variables. The model has been estimated for the period January 1994 through July 1999 (monthly data, 67 observations). A general specification with four endogenous and exogenous variables has been chosen first, and insignificant lags have been eliminated subsequently (Table 6).

The second specification, including the oil price, explains roughly half of the variation in the trade account surplus and fulfills the assumptions of the linear regression model (normal distribution of the residuals, absence of heteroskedasticity and autocorrelation). The estimated long-run coefficients imply an improvement in the trade account by almost 3 percent following a 1-percent devaluation. Also, a 1 percent increase in the price for oil (Ural) improves the trade account by 2 percent. The adjustment with respect to the real exchange rate is somewhat less pronounced if the oil price is not included as an explanatory variable. Simulations show a J-type adjustment of the real external balance for both cases; a positive response starts very quickly, after 2-3 months, and the full adjustment is reached roughly one year after the devaluation (Graph 1).

As regards the impact of domestic industrial production, the demand effect dominates, i.e., the trade balance worsens if industrial production increases. Considering the importance of raw materials for Russia's foreign trade and the existence of long-run trade agreements, this result is hardly surprising. Yet, the extremely high long-run coefficient (–18 percent) should be interpreted with caution, and direct implications of economic growth on the development of the trade account should not be drawn.[13] It could be argued that the index of industrial production is determined also by export activities and can thus not be assumed as exogenous in the above specification. Testing for weak exogeneity by using the reverse specification showed no statistically significant cointegration

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[12] The use of this technique has been possible because Russia's trade account has been in surplus during the period under review. Using the additive seasonal adjustment procedure instead, which can also be applied to negative data, left the main results unaffected.

[13] Using domestic retail sales as a proxy of domestic demand instead gave a much lower long-run coefficient of about 4 percent. Yet, the explanatory power of the equation worsened substantially.

relationship between the trade account and industrial production. In addition, the share of exports in total industrial production is relatively low in Russia.

Alternative model specifications have been tested to check the robustness of these results. Using the index of European or US industrial production as a proxy for foreign demand gave a negative coefficient while the remaining results were basically unchanged. Separate specifications of export and import equations showed that the positive response of net exports to a real devaluation is due mainly to the negative response of imports. A dummy variable capturing changes in the system of foreign trade regulations following the currency crisis such as the introduction of a prepayment system for imports and a surrender requirement for exports, has been insignificant.

2.3   Fiscal Developments

The performance of Russia's trade account is one important factor behind the sustainability of the country's foreign debt situation. But, since foreign debt is owed primarily by the Russian government, sustainability also depends crucially on the solution to the internal transfer problem, i.e. on the ability of the government to tax efficiently the enterprise sector and thus to get access to hard currency earnings.

Efficient taxation and, more generally, a redefinition of the role of the state, however, have been one of the main weaknesses of the transformation process in Russia.[14] The official budgetary situation reflects not only the performance of the actual tax law but also the inefficiency of its implementation. Since the beginning of reforms, the Russian Federation has been confronted with low and, over a long period, even decreasing tax revenues. Important sources for the consolidated budget, which consists mainly of the federal and the regional budgets, have been the VAT and profit taxes (Table 7). During the first four years of transformation, revenues from both sources of taxation went down significantly. In the same period, severe cuts in expenditures were made related especially to the enterprise sector: official subsidies to the enterprise sector dropped from more than 10 percent of GDP in 1992 to around 2.5 percent in 1999. The sharpest decline in these official enterprise subsidies occurred in 1995 (–50 percent). Partly, these adjustments in the official fiscal sector have been a direct response to the requirements of the IMF, which has been monitoring, supervising and also to a certain degree financing Russia's macroeconomic policies. However,

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[14] See Aslund (1998) and Leijonhufvurd and Rühl (1997) for a similar conclusion.

the expenditure cuts could not compensate for the declines in revenues. The budget has been running a chronic deficit,[15] which was financed not only by the domestic banking system but also by international creditors.

For a sustained period, it was symptomatic of the Russian economy that increases in the official deficit were accompanied by increases in tax arrears (Graphs 2 and 3). The dramatic increase in enterprise arrears against the budget was initiated by a presidential decree which came into force in 1996 and which offered selected enterprises the postponement of tax payments (Ukaz 1996). This decision was nothing more than the implementation of an "unofficial" or hidden mechanism to bring additional liquidity to the enterprise sector, which was suffering from a restrictive monetary policy characterized by extremely high real interest rates (Schrooten 2000). Therefore, tax arrears can be considered a special kind of quasi-fiscal activity (QFA). In this sense, QFAs are simply unreported but voluntary governmental grants to the enterprise sector or even to selected enterprises.

At the same time, these subsidies usually have not come for free. Disaggregating the data on arrears by industry shows a quite interesting pattern: large industrial enterprises, especially those belonging to the energy sector, are the most important tax debtors. In return, these tax debtors have been expected to subsidize insolvent enterprises, industries, municipalities, and even some neighboring countries by offering products on the Russian market at prices below those prevailing on the world market (World Bank 1999b). Since the gap between the domestic and the international price level potentially creates losses for the energy sector, tolerating tax arrears can be a means to indirectly compensate firms for these losses. In this way, the government has used enterprises as a vehicle for conducting industrial, social, regional, and even foreign policies off-budget.

Subsidization and off-budget activities through tax arrears was not the only form of QFA in Russia. In the pre-crisis period, not only the inflation tax, but also the exchange rate policy functioned as a QFA. Especially the relatively fixed exchange rate of the ruble against the US dollar could be considered as a guarantee to the domestic enterprise sector, the banking sector and the government itself, ensuring a low real effective interest rate in the case of international borrowing. The nearly fixed exchange rate created a strong incentive for foreign borrowing and operated as a huge subsidy for doing so. While the inflation tax increased the tax burden on private economic activities for a relatively long pe-

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[15] Data on the Russian fiscal situation are strongly infected by errors and revisions; here we use time series published by the Russian Economic Trends (various issues).

riod, the implicit exchange rate guarantee lowered the borrowing costs not only for the enterprise sector but also for the government.

Because property rights have not been implemented sufficiently, fiscal activities are often performed on a "non-cash-basis", and an opaque system of indirect subsidies and payments prevails. More recently, the forms of QFAs have changed as price controls and surrender requirements of foreign currency export earnings have been re-introduced (DIW et al. 2000). The government itself is often responsible for the postponement of wage and pension payments as well as for the non-payment for energy. This means that arrears appear not only on the revenue side but also on the expenditure side of the budget. Since QFAs are developed and designed by the government itself, the Russian government seems to be able to switch between "official" and "unofficial" taxation.

Russia's QFAs are a matter of concern for several reasons. *First*, for a long period, the conventional or official report on the government's fiscal balance gave a misleading indication of the extent and role of governmental activities – and of the macroeconomic impact of the actual fiscal policy. The magnitude of governmental activities had been underestimated by a substantial margin. While the official budget figures nearly reached the given benchmarks for conditional credits by international financial organizations in regard to expenditure cuts and the size of the deficit, the scope of hidden governmental activities and the de facto deficit of the public sector were largely unknown.

Second, the patterns of QFAs implemented in the Russian Federation have distorted resource allocation. The Russian economy is not only characterized by a considerable degree of corruption and a large shadow economy, but also by a high share of non-cash payments or even non-payments, both of which are characteristic of the unofficial economy. While non-cash payments to the budget and tolerated tax arrears operate like an extensive subsidy system, the weak institutional framework functions as an unstable tax system. For entrepreneurs' investment decisions, not only the expected return but also the official corporate tax rate, the implemented deduction possibilities, and the (tax) burden arising from off-budgetary activities are important parameters. From the point of view of a potential entrepreneur, uncoordinated taxes and exemptions increase the uncertainty about future returns on investment. Moreover, the choice of where to invest, what to produce, and at what scale to operate will be distorted by considerations of which activities can best be shielded from unpredictable changes in the system. The unstable and opaque tax burden on investment activities is a symptom of the unstable institutional framework of Russia itself. However, the

implicit tax rate arising from this unstable institutional framework is difficult to measure. Obtaining information about the tax burden which arises from the weak institutional environment is even more difficult than the calculation of non-payment against the budget sector. The prevalence of capital flight, however, can be seen as indirect evidence for the costs imposed on the enterprise sector through a weak institutional environment. In this sense, capital flight reflects the fact that enterprises are taxed in Russia through unofficial in addition to official means.

Third, QFAs often take the form of unfunded and even unanticipated liabilities either for the government or for the enterprises. Tolerated tax arrears and non-payments of the budget against the enterprise sector as well as a nearly fixed exchange rate in an inflationary environment or the newly introduced price controls for certain goods bring instability and tensions to the economy as a whole. In other words, in the short-run, it may be attractive to operate within the unofficial sector. In the long run, however, QFAs and the badly-developed legal and institutional framework appear to be very costly to the Russian economy.

The measurement of the size of the unofficial economy and of QFAs is difficult simply because of the hidden character of these transactions. Because in the Russian economy the "unofficial" economy and the implemented QFAs are very closely linked, we focus here on the non-cash payments and the non-payments between the enterprise and the state sector. The fact that tax arrears went up to 5 percent of GDP during the transition period (Goskomstat 1996) can be seen as one manifestation of this unofficial fiscal system.

Graph 2 shows the development of budget revenues and tax arrears since 1996. The sum of official tax revenues and arrears is used as a somewhat "fictive" measure of total revenue. Revenues defined in this sense increased markedly between 1996 and 1999. The sum of these "potential" revenues was much higher than the effective revenues. Although this fictive measure is certainly a very crude approximation of the importance of the unofficial economy, it nevertheless shows that the government can influence its official revenues to a certain degree by deciding to tolerate tax arrears of certain industries. At the federal level, only about 70 percent of the regular revenues have been collected in cash. At the regional level, barter and other forms of non-cash payment attained an even higher share of the budgetary revenues.

Since official budgetary revenues went down while tax arrears and international interest burdens increased since 1997, it was becoming increasingly

likely that the Federation, as the most important Russian debtor on the international financial market, would fail to service post-Soviet debt. It has been argued above that the dominance of public debt is a distinguishing feature of the Russian debt problem. While public or publicly-guaranteed debt was important during earlier debt restructuring episodes as well, the current situation in Russia differs from these prior situations by virtue of the coexistence of an unofficial and an official fiscal sector. Hence, efficiently taxing the enterprise sector is one of the government's main tasks at present.

To this end, the government will have to invest into the institutions underpinning economic activity in a market economy. In a modern society — which should be created during the transition period — the state is responsible for the implementation and enforcement of most of the relevant rules of the economic game. The design of institutions has a key impact on overall economic development. Economic theory and empirical evidence show that efficient institutions bring down transaction costs by lowering search time and information costs or by correcting market failures. Inefficient institutions, in turn, cause higher transaction costs, negatively affect private sector activities, and therefore have a negative impact on output (Pagano 1993). In the present context, institution building implies *inter alia*

– creating a tax system with fewer taxes, fewer exemptions, and fewer contradictions,

– upgrading tax administration by training tax officials and raising salaries to levels that raise immunity against the temptations of corruption,

– reducing political discretion in tax enforcement by creating a truly independent judiciary which not only enforces the state's tax claims but also protects enterprises (and households) against transgressions by tax authorities,

– and increasing the supply of the public good "public security" in general by investing in uncorrupted police forces.

The Russian government also has to solve two major internal transfer problems. *First*, the enterprise sector has to be compelled to pay the outstanding taxes. *Second*, the tax-sharing system between the different levels of government has to be redesigned in such a way that the regions are forced to collect taxes only on a cash basis. Only cash revenues or revenues in US-Dollars make the repayment of foreign credits possible.

In the following section, a stylized model of Russian foreign debt is presented which analyzes this choice between official and unofficial taxation in a situation of high foreign debt stocks.

3 Foreign Debt and the Role of the Unofficial Economy

As regards the sustainability of Russia's foreign debt situation, it might be argued that the dependence of export revenues from the oil and gas sector and thus on the development of world market prices for these commodities leaves relatively little room to maneuver for domestic policy. At the same time, Russia's situation is quite peculiar in the sense that public sector foreign debt dominates and that the economy has been characterized by chronic fiscal problems, coupled with a substantial role of the unofficial economy. The size of the unofficial economy, in turn, is to a large extent determined by economic policy making and can thus hardly be considered exogenous to the government's optimization problem.

These factors suggest that economic policy has an impact on Russia's ability to service its foreign debt, and that the situation cannot be analyzed without taking the interaction between public sector foreign debt and the unofficial economy into account. To our knowledge, links between these issues have not been treated in the literature so far. While there has been work on the resolution of foreign debt crises and on the economics of the unofficial economy,[16] these two strands of the literature have not been combined. In the following, we thus present a stylized model which allows us to analyze the choice of the Russian government between official and unofficial taxation in the face of its foreign debt burden. The framework is then used to model the decision of foreign creditors to restructure Russia's foreign debt.

3.1　Foreign Debt and the Choice Between Official and Unofficial Taxation

The model has two periods. We assume that Russia's enterprise sector is endowed with an initial amount of investible funds. In the first period, it allocates these funds between capital flight and investment into the domestic tradables sector in a way that maximizes second period profits after taxation, both official

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[16] See Footnote 2 and Johnson et al. (1997), Kaufmann and Kaliberda (1996), Schneider and Enste (2000), respectively, for discussions of these issues.

and unofficial (see Section 2.5 above).[17] The return to domestic investment inter alia depends on the development of the real exchange rate, with a depreciation raising the return in domestic currency. Considering the fact that Russia's exports are dominated by raw materials such as oil and gas which are denominated in US-dollar, this assumption can be motivated by the fact that costs of oil and gas producers are partly denominated in domestic currency. The government maximizes revenues by taxing the proceeds of domestic investment in the second period.

Assessing the actual tax burden Russian enterprises face is complicated by two factors. On the one hand, tax enforcement is very uneven, which results in substantial tax arrears in the Russian economy. On the other hand, there are substantial off-budget activities which impose significant costs on the enterprise sector. As a result of these two factors, the actual tax burden differs from what is implied by the Russian tax code. We capture this phenomenon in our model by distinguish between "official" and "unofficial" taxation. For our purposes, "official taxation" is what generates government revenues as they appear in the budget, whereas "unofficial taxation" is anything that benefits the government and imposes a cost on the enterprise sector without showing up in the budget.[18]

The government has a stock of foreign liabilities on which interest is due in the first period, while interest plus principal are to be repaid in the second period. For the first period, the government is assumed to have a given stock of resources Y which are just sufficient to cover the contractual interest payment due. This means that the government is unable in the first period to undertake any investments into e.g. institution building. In the second period, the government uses proceeds from official taxation to service its foreign debt.

We assume that all proceeds from official taxation are allocated to this purpose until the contractual liability is fully paid; that is we do not assume that the government withholds tax revenues when it could use them to pay foreign creditors. However, the government is able to choose how much official tax revenues to collect and can thereby influence its ability to pay foreigners. If

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[17] Given that what matters for the sustainability of foreign debt is the capacity to earn foreign exchange through exports, we ignore the non-tradables sector.

[18] Hence, the tax payments of the model must be understood as averages over profitable and loss-making enterprises (with the former paying taxes at higher rates and the latter paying no taxes and possibly receiving subsidies) and as actual payments made rather than as payments due. Accordingly, we are assuming that the enterprise sector as a whole is a net tax payer.

proceeds from official taxation exceed contractual debt service payments in the second period, the government can use the balance to consume rents.

We begin our analysis with the optimal investment decision of the enterprise sector. Subsequently we study the optimal tax policy of the government under the assumption that no debt relief occurs. Next, we derive conditions under which debt rescheduling benefits all parties. Finally, we discuss conditions under which debt write-downs would be called for.

In the following, all values are expressed in foreign currency terms. The enterprise sector takes the tax rates set by the government as data and chooses the fraction β of investible funds I to be allocated to domestic investment to maximize profits:

$$(1) \qquad \max_{\beta} \; (1-\beta)I(1+r_w)(1-\Delta)+X(\beta I,e)(1-t-b)$$

where r_w is the world interest rate, Δ is the inefficiency associated with capital flight (it reflects the costs of concealing illegal capital exports and concealing repatriated profits from it), e is the real exchange rate defined as the ratio of foreign and Russian price levels divided by the foreign currency price of the ruble (i.e. an increase in e reflects a real depreciation), $X(\beta I,e)$ is the (strictly concave) return to domestic investment, t is the official tax rate, and b is the unofficial tax rate (i.e. the unit cost imposed on the enterprise sector by the government's off-budget activities). The corresponding FOC of the enterprise sector's optimization problem yields

$$(2) \qquad (1-t-b)\frac{\partial X}{\partial \beta I}=(1+r_w)(1-\Delta).$$

The LHS and RHS of (2) give the marginal return to domestic and foreign investment, respectively. From (2) the optimal share of domestic investment can be expressed as an implicit function of the exogenous parameters and the government's choice variables

$$(2') \qquad \beta = \beta\left(\underset{-}{r_w},\underset{+}{\Delta},\underset{+}{e};\underset{-}{t},\underset{-}{b}\right),$$

where higher foreign interest rates, a lower inefficiency of capital flight, a real appreciation, and higher rates of official or unofficial taxation encourage capital flight. In particular, we have

(2") $\qquad \dfrac{\partial \beta}{\partial t} = \dfrac{\partial \beta}{\partial b} = \dfrac{\partial X / \partial \beta I}{\partial^2 X / \partial (\beta I)^2 I (1 - t - b)} < 0 .$

The government maximizes its net revenues in the second period subject to the optimal allocation of investible resources by the enterprise sector:[19]

(3) $\qquad \max_{t,b} \Pi_G = X(\beta I, e)(1 - \bar{\gamma} t)t + X(\beta I, e)(1 - \delta)b - \widetilde{F} \qquad$ s.t. $\beta = \beta \left(\underset{-}{r}, \underset{+}{\Delta}, \underset{+}{e}; \underset{-}{t}, \underset{-}{b} \right)$

where $\bar{\gamma} t$ is the inefficiency associated with a weak institutional environment (it might reflect the fact that the tax system per se is highly distortionary or that tax laws are enforced on a discretionary basis and thereby create distortions etc.), δ is the inefficiency associated with unofficial taxation (think of it as a cost of concealing bribes), and $\widetilde{F}$ is second period debt service. Note that we assume that the efficiency loss due to official taxation is not constant at the margin but rather increases in the rate of taxation t. This takes account of the fact that at higher tax rates the deadweight loss and the incentives to evade taxation will be greater.

We assume that $\delta > \bar{\gamma} t$ for sufficiently low t, i.e. that there exists a threshold below which unofficial taxation is less efficient than official taxation, since otherwise it could never be optimal to use any official taxation at all.[20] Depending on the magnitude of the debt service relative to revenues from official taxation, we need to distinguish two cases for actual debt service $\widetilde{F}$

$$\widetilde{F} = \begin{cases} X(1 - \bar{\gamma} t)t & \text{for } X(1 - \bar{\gamma} t)t \le F(1 + r_w) \\ F(1 + r_w) & \text{otherwise} \end{cases}$$

where F is the principal of the contracted foreign debt. The former case reflects a situation where the government's official tax revenues are not sufficient to fully service the debt, while in the latter case the debt is serviced as contracted.

Consider first the case in which the government earns official tax revenue sufficient to service fully its foreign debt. Any tax receipts in excess of the debt

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[19] We are assuming here that no debt relief occurs. Hence, in the model, the government uses all its resources in the first period to service its foreign debt. This is why net government revenues in the first period are identically equal to zero and do not enter the maximization problem.

[20] For our argument to go through we require that the marginal deadweight loss of official taxation be an increasing function of the official tax rate. The above is the simplest functional form which satisfies this requirement.

payment are retained by the government. In this situation, the government is interested in choosing the most efficient form of taxation in order to maximize its revenues. Hence, the first order conditions for an optimum are:

(4)
$$\frac{\partial \Pi_G}{\partial t} = \frac{\partial \beta}{\partial t} \frac{\partial X}{\partial \beta I} I\left[(1 - \overline{\gamma}\, t)t + (1 - \delta)b\right] + (1 - 2\overline{\gamma}\, t)X = 0$$

$$\frac{\partial \Pi_G}{\partial b} = \frac{\partial \beta}{\partial b} \frac{\partial X}{\partial \beta I} I\left[(1 - \overline{\gamma}\, t)t + (1 - \delta)b\right] + (1 - \delta)X = 0$$

.

Equations (4) reflect the fact that increases in the tax rates on the one hand lower the tax base by driving more domestic savings abroad (the first term in (4)), but on the other hand raise government revenue from a given tax base (the second term in (4)). Substitution of one of the two FOCs into the other yields the following expression for the optimal official tax rate[21]

(5) $\qquad t^* = \dfrac{\delta}{2\overline{\gamma}}.$

The optimal official tax rate is an increasing function of the inefficiency of unofficial taxation, and a decreasing function of the inefficiency of official taxation. After rearranging, we have

(5') $\qquad 2\overline{\gamma}\, t^* = \delta,$

which says that, at the optimum, the deadweight losses from official and unofficial taxation are equalized at the margin, such that for a given aggregate tax rate $t + b$ facing the enterprise sector, a shift between official and unofficial taxation cannot reduce the aggregate deadweight loss.

Later on we will use the fact that official and unofficial taxation are substitutes, i.e.

(6)
$$\frac{\partial^2 \Pi_G}{\partial t \partial b} = \left[\frac{\partial^2 X}{\partial (\beta I)^2} I\left(\frac{\partial \beta}{\partial t}\right)^2 + \frac{\partial X}{\partial \beta I} \frac{\partial^2 \beta}{\partial t^2}\right]\left[(1 - \overline{\gamma}\, t)t + (1 - \delta)b\right]I$$

$$+ \frac{\partial X}{\partial \beta I} I \frac{\partial \beta}{\partial t}\left(1 - 2\overline{\gamma}\, t + 1 - \delta\right) < 0$$

,

where we have used (2"). [22]

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[21] Assuming that $1 - 2\overline{\gamma}\, t \neq 0$ and $\delta \neq 1$.

[22] Assuming that the third derivative of the production function X is non-positive.

Next, we consider the situation in which a solution with $X(1 - \bar{\gamma} t^*)t^* > F(1 + r_w)$ does not exist. In this case, any official tax revenues the government may collect ends up being paid out to foreign creditors and hence does not benefit the government. At the same time, official taxation discourages investment in the domestic economy and thereby reduces government revenue from unofficial taxation. Therefore, for $X(1 - \bar{\gamma} t^*)t^* \leq F(1 + r_w)$, it is optimal for the government not to subject any of the returns to domestic investment to official taxation, i.e. $t = 0$. With no revenues from official taxation, the government is unable to service its foreign debt in the second period and hence defaults on its foreign debt; foreign creditors do not receive any payment in the second period in this case. The government instead maximizes

$$(7) \qquad \Pi_G\big|_{t=0} = X(I\beta', e)b(1 - \delta),$$

where β' indicates the enterprise sector's optimal response to unofficial taxation given that the official tax rate is zero. This yields the first order condition

$$(8) \qquad \frac{\partial \Pi_G}{\partial b} = \frac{\partial \beta'}{\partial b} \frac{\partial X}{\partial \beta I} I(1 - \delta)b + (1 - \delta)X = 0.$$

From (6), i.e. from the substitutability of official and unofficial taxation, we know that with official taxation constrained to zero, the optimal unofficial tax rate will be higher than with positive official taxation. Moreover, from (5') we know that the optimal unofficial tax rate will now be lower than the sum of official and unofficial tax rates before.[23] It follows that the aggregate tax rate facing the enterprise sector will be lower, capital flight will be lower, and export revenues (the tax base) will be higher. However, the government's gross revenues will still be lower than before, as these were at a maximum in the first scenario where the official tax rate was not constrained to zero.

Finally, it should be noted that even in the case where the government could generate funds sufficient to repay its foreign creditors, it may decide to default. This is because the tax base is larger under default. It may therefore be in the interest of the government to use only unofficial taxation even if the condition

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[23] Before, the positive effects of marginally raising the sum of the two tax rates were just compensated for by the negative effects. Hence, the net marginal effect on net government revenue was zero. Given that setting the unofficial tax rate at the previous sum of official and unofficial tax rates would result in a larger deadweight loss (since before the structure of official and unofficial tax rates minimized the deadweight loss for a given aggregate tax rate), the negative effects of raising the unofficial tax rates will start to dominate the positive effects before the previous level of aggregate taxation is reached.

$X\left(1-\bar{\gamma}\,t^{*}\right)t^{*} > F\left(1+r_{w}\right)$ holds. I.e. even if by maximizing gross revenue, the government was able to fully service its foreign debt and to retain some official tax revenues, its net revenues may still be larger if it taxes only unofficially and defaults on its foreign debt. Thus the necessary and sufficient condition for default is:

$$(9) \qquad X\left(\beta^{*}\ I\right)\left[\left(1-\bar{\gamma}\,t^{*}\right)t^{*} + \left(1-\delta\right)b^{*}\right] - F\left(1+r_{w}\right) \le X\left(\beta^{'}\ I\right)\left(1-\delta\right)b',$$

where the asterixes indicate optimal solutions to (4) and (2), and the primes indicate optimal solutions to (8) and to (2) for $t = 0$.

If the situation is characterized by (9), debt service is not in the interest of the government. Hence foreign creditors will have to offer some incentive to the government in order to be able to recover their loans. One possible way of doing so is to create conditions that encourage the government to invest in institution building, so that official taxation becomes more efficient relative to unofficial taxation.

The following paragraphs show how debt restructuring can benefit both the government and the foreign creditors by encouraging institution building. Debt restructuring, in turn, can take two forms: rescheduling, i.e. a change in the time structure of payments, and write-downs, i.e. reductions in the nominal value of the debt.

Debt rescheduling, i.e. allowing the government to pay part of its first period obligation only in the second period, can raise the overall amount received by foreign creditors if the government uses the additional liquidity available in the first period to invest into institution building. Institution building, in turn, results in domestic investment becoming more attractive for enterprises, and the tax base expanding for the second period, so that the government can pay more in the second period. From the point of view of the government, this can make sense as well, if institution building raises the tax base in the second period sufficiently for government revenues net of debt service to be higher than without institution building and debt rescheduling.

Debt write-offs can be structured such that they also provide liquidity relief and, in addition, reduce the amount to be repaid to creditors in the second period. They can also lead to higher revenues for both creditors and government by encouraging more official taxation of a given return stream.

3.2 Debt Restructuring and Debt Write-Off

As indicated above, we assume that the initial first period stock of government resources, *Y*, is just sufficient to cover the contractual value of first period debt service payments, $r_w F$, so that no resources are left for institution building.

Now suppose, it takes an investment of *G* to lower the inefficiency of domestic taxation from $\bar{\gamma}$ to $\underline{\gamma}$. Then additional liquidity can be provided to the government in the first period by rescheduling foreign debt such that in the first period the government has to pay only $r_w F - G$ and in the second period its liability becomes $(1 + r_w)(F + G)$. This liquidity could be used to invest into institution building.

Debt rescheduling has two countervailing effects. On the one hand, it enables institution building in the first period and thereby provides the opportunity to reduce the deadweight loss of official taxation, thereby growing the 'pie' available to be shared between the government and foreign creditors. On the other hand, debt rescheduling raises the debt burden in the second period, thereby making default more attractive.

By assumption, investment into institution building would lower the deadweight loss from official taxation. This would have two effects. First, it would make official taxation more attractive relative to unofficial taxation (a "substitution effect"). Second, it would enable the government to raise a given amount of revenue with lower tax rates *provided the government does not rely exclusively on unofficial taxation.* This "income effect" translates into a lower tax burden for enterprises overall and thus reduces capital flight and increases the tax base. Given that in the default scenario, the government would not use official taxation without debt rescheduling, it is critical that the substitution effect be sufficiently large to induce the government to switch to official taxation.

Assuming that additional liquidity could alternatively be invested abroad on the same terms as the private sector can invest abroad, debt rescheduling will induce government investment into institution building and will induce a switch from unofficial to official taxation, iff

(10)
$$X^*(\underline{\gamma})\Big[\big(1 - \underline{\gamma}\, t^*(\underline{\gamma})\big)t^*(\underline{\gamma}) + (1-\delta)b^*(\underline{\gamma})\Big] - (F+G)(1+r_w)$$
$$> X'(1-\delta)b' + G(1+r_w)(1-\Delta)$$

i.e. if the net revenue from raising both official and unofficial taxation and servicing the debt after investing into institution building exceeds the revenue

from not investing into institution building, sticking with unofficial taxation and defaulting on the debt. In view of the fact that the RHS of (10) exceeds the RHS of (9), debt rescheduling thus makes sense if the effect of the initial investment G on the deadweight loss of official taxation $\bar{\gamma} - \underline{\gamma}$ is sufficiently large, and/ or if the effect of the reduced official deadweight loss on the optimal tax rates is sufficiently large, and/ or if the effect of the change in tax rates on the tax base is sufficiently large.

The amount of liquidity relief to be granted by rescheduling is obviously limited at the amount due in the first period. If condition (10) above is not met, debt rescheduling is not a viable course of action. However, debt reduction might still lead to an improvement for both parties. If a debt write-down is granted in the first period (i.e. G and F is (partially) written off rather than being rolled over to the second period), then it does encourage institution building (which a write-down only in the second period would not). In addition, a write-down relaxes the above condition (10) because it not only provides liquidity relief but also reduced the amount of funds to be transferred in the second period which becomes $(1 + r_w)(F - d)$ where d is the amount of debt forgiven. Hence, if rescheduling is insufficient to satisfy the above condition, a partial write-down may be called for.

4 Which Way Out of the Crisis?

The severe real and financial crisis of 1998 has left Russia with a severely aggravated foreign debt problem. Traditional debt indicators have worsened, the country lacks access to international capital markets, negotiations with foreign creditors are protracted, the fiscal situation of the government has yet to improve, and capital flight continues. Finding a way out of this gridlock has seemed difficult: Russian firms are unwilling to invest domestically unless the government ensures property rights, foreign creditors are unwilling to lend new funds unless the government has proven its ability to reform, and the government procrastinates reforms as it fears their short-term costs.

As regards the sustainability of Russia's foreign debt situation, the paper has focused on the fact that the bulk of the foreign debt is owed by the government. At the same time, Russia's fiscal situation is plagued by the continued coexistence of an official system of taxation and a large, opaque system of unofficial taxation and subsidization. These unofficial fiscal activities both contribute to and reflect the deep-rooting institutional deficiencies of the Russian economy

which eventually are a heritage from central planning. Moreover, the importance of the unofficial fiscal system in an extremely weak institutional environment is the main distinguishing feature of Russia in comparison to earlier debt restructuring episodes.

This paper has presented a two-period model of the Russian debt problem, focusing in particular on the decision of the government to switch from unofficial to official means of taxation. For the government, the basic trade-off is between the efficiency losses due to unofficial taxation and the fact that unofficial tax revenues can be hidden away from foreign creditors. In other words, enhancing the efficiency of the official tax system can improve the incentives of the government to switch from unofficial to official taxation. One way to achieve a greater efficiency of the official tax system is to invest into institution building in the first period. Foreign creditors can contribute to this by rescheduling debt or even by granting debt relief.

Foreign creditors, in turn, face the trade-off that debt restructuring affords the government with additional resources that can be spent on institution building while, at the same time, current claims are forgone. The recent decision of the London Club to write off and restructure Russia's inherited debt will thus benefit the creditors only if investment into institution building is sufficiently efficient. Technical assistance might be used to achieve this goal. Additionally, foreign creditors can influence the decision of the government by making default more costly through, for instance, cross-default clauses on the renegotiated debt.

In this paper, the Russian enterprise sector has been modeled in a fairly stylized way. Most importantly, the tradables and the non-tradables sector have not been distinguished. Yet, an extension would be straight forward. In such a more realistic setting, the success of debt relief would also depend upon the incentives of the government to divert resources from the non-tradables to the tradables sector. Empirical estimates of Russia's trade account have shown the importance of oil price and real exchange rate developments for Russia's net exports and thus its debt servicing potential. Since the development of oil prices must be taken as exogenous by the Russian policymakers, ensuring the (price) competitiveness of domestic producers by an appropriate exchange rate policy thus enhanced Russia's ability to service its foreign debt. This requires, most importantly, a coordination of monetary, fiscal, and institutional reforms with exchange rate policies. If such a coordination is not achieved, competitiveness erodes, and a new crisis becomes all the more likely. In addition to institution

building, sound and consistent macroeconomic policies are thus the key for successful debt restructuring.

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6 Tables and Graphs

Table 1 — Types of Hidden Economic Activities

	Corruption	Shadow Economy	Unofficial Economy
Definition	Use of public power for private benefit	Unreported economic activities of the private sector on cash basis	Non-cash transactions in both, the private and the public sectors as well as between them
Typical forms	Bribes, unreported cash payments	Unreported income/wages on a cash basis	Barter trade, tax arrears, tax exemptions, non-payment of the budget sphere, the abuse of the legal framework for unreported fiscal activities
Incentive	Tax evasion Cost reduction	Tax evasion Tax compliance	Broadening of unreported budget revenues/fiscal activities; quasi-fiscal activities Economic activity within a non-cash payment system Tax reduction

Table 2 — *Debt Indicators: An International Comparison (in percents) 1992–1998*

	Debt / Exports	Debt / GNP	Debt service / Exports	Interest / Exports	Interest / GNP	International reserves / Debt	International reserves / Imports (months)	Short-term credits / Debt	Concessional credits / Debt	Multilateral credits / Debt
					Russian Federation					
1992	143.0	18.6	2.5	0.6	0.1	..	..	16.7	1.3	0.7
1993	169.8	29.1	3.3	1.1	0.2	8.8	1.9	7.4	30.2	1.1
1994	156.7	37.9	4.4	1.6	0.4	5.9	1.3	8.1	27.2	1.3
1995	129.6	35.5	6.3	3.0	0.8	15.0	2.5	8.6	18.3	1.6
1996	119.5	29.7	6.7	3.9	1.0	13.0	2.0	9.7	19.8	2.2
1997	121.0	26.2	6.5	4.9	1.1	14.1	2.1	4.9	20.6	4.2
1998*	209.3	68.3	8.8	4.9	1.5	6.6	1.4	4.0		
					Developing Countries					
1992	162.6	36.5	16.6	6.8	1.5	18.5	3.3	19.0	21.7	14.1
1993	167.2	38.4	16.4	6.4	1.5	20.6	3.7	19.0	22.6	13.8
1994	161.2	40.0	16.1	6.4	1.6	21.8	3.9	18.5	21.9	13.8
1995	142.7	38.2	16.0	6.7	1.8	25.1	4.0	19.8	20.2	13.4
1996	133.4	35.8	16.6	6.4	1.7	27.9	4.2	20.2	19.2	12.8
1997	129.0	34.9	17.0	6.1	1.6	28.1	4.1	20.0	17.2	12.5
1998*	146.2	37.3	17.6	7.4	1.9	28.4	4.6	16.7	17.0	12.9
					Europe and Central Asia					
1992	138.0	25.3	12.1	5.0	0.9	11.6	1.8	16.8	9.0	7.6
1993	146.2	32.1	9.9	4.3	0.9	13.5	2.1	13.9	17.9	6.7
1994	136.0	38.8	12.0	4.2	1.2	15.2	2.5	11.6	16.5	7.2
1995	115.3	36.8	12.2	4.8	1.5	25.8	3.4	13.2	12.7	7.4
1996	108.7	34.7	11.5	4.7	1.5	25.3	3.1	14.9	12.6	7.3
1997	108.0	33.8	11.5	4.7	1.5	25.7	3.1	15.2	11.6	7.6
1998*	126.7	35.9	13.3	6.0	1.7	23.2	3.2	14.6	10.9	7.3

* Preliminary. Recent data on the Russian Federation are not exactly comparable with the previous ones and have been calculated based on the data from the IMF and the Central Bank of Russia. Instead of GNP, GDP has been used. The total debt - and interest service include only credits in foreign currency. Arrears on principal are included.

Sources: World Bank (1999a), IMF (1999a, 1999b), CBR (1999), own calculations.

Table 3 — Russian Federation: External Debt, 1994–1998 (in billions of U.S. dollars)[a]

	1994	1995	1996	1997	1998
I. Sovereign Debt					
A. *Russian-era foreign currency debt (post 1.1.1992)*	11.3	17.4	27.7	35.6	55.4
<u>Medium and long term</u>	...	...	...	...	55.4
Multilateral Creditors	5.4	11.4	15.3	18.7	26.0
IMF	4.2	9.6	12.5	13.2	19.4
World Bank	0.6	1.5	2.6	5.3	6.4
Other	0.6	0.3	0.2	0.2	0.2
Official creditors[b]	5.9	6.0	7.9	7.6	9.7
Eurobonds	0.0	0.0	1.0	4.5	16.0
Minfin Bonds (VI and VII)	0.0	0.0	3.5	3.5	3.5
Commercial Creditors (includes financial institutions)	0.0	0.0	0.0	1.3	0.2
<u>Short term</u>	...	...	...	...	0.0
B. *Soviet-era foreign currency debt (pre 1.1.1992)*	116.2	110.6	108.4	99.0	102.8
<u>Medium and long term</u>	...	...	...	...	102.8
Multilateral Creditors	0.0	0.0	0.0	0.0	0.0
Official creditors[b]	69.9	62.6	61.9	56.9	59.5
Paris Club	39.6	41.6	42.3	37.6	40.0
of which: arrears	...	...	...	...	0.8
COMECON	25.7	16.6	15.4	14.9	14.7
of which: arrears	...	...	...	...	0.0
Other, including non-Paris Club bilateral	4.6	4.4	4.2	4.4	4.7
of which: arrears	...	...	...	...	4.0
Commercial creditors	36.0	38.3	37.8	33.9	35.2
Financial institutions	31.1	33.0	32.5	29.7	31.2
of which: arrears	...	...	...	...	2.1
Other[c]	4.9	5.3	5.3	4.2	4.1
of which: arrears	...	...	...	...	4.1
Eurobonds	1.7	1.1	0.1	0.1	0.0
Credits contracted by entities other than VEB	1.0	1.0	1.0	0.5	0.5
Minfin Binds (Minfins III, IV, and V)	7.6	7.6	7.6	7.6	7.6
of which: arrears	0.0	0.0	0.0	0.0	0.0
<u>Short term</u>	...	...	...	...	0.0
C. *Total sovereign foreign currency debt (= A + B)*	127.5	128.0	136.1	134.6	158.2
D. *Total sovereign debt to nonresidents (= C- E - F + G)*	...	...	...	...	152.4
E. *Residents' Minfin bonds*[d]	...	...	...	...	7.3
F. *Residents' Eurobonds*[e]	...	...	...	...	3.7
G. *Nonresidents' GKOs/OFZs (ruble denominated)*[f]	...	...	...	...	5.2

Table 3 continues ...

Table 3 (continued)

	1994	1995	1996	1997	1998
II. Nonsovereign Debt					
Local governments	...	...	...	1.1	2.2
Medium and long term	...	...	...	1.1	1.9
of which: Eurobonds	0.0	0.0	0.0	0.9	1.4
Short term	...	...	...	...	0.3
Banks[g]	2.6	5.2	9.2	19.2	9.9
Medium and long term	...	...	...	...	2.8
Short term	...	...	...	...	7.1
Nonbank corporations (including arrears)	...	...	...	13.6	19.6
H. Total	...	...	...	...	*31.7*
III. Total External Debt (to nonresidents)	...	...	...	...	184.0
(= D + H)					
Memorandum items					
Sovereign arrears	...	...	...	...	10.9

a) Foreign currency values of outstanding external debt have been converted into U.S. dollars at the relevant market exchange rate prevailing at the respective date indicated. — b) Includes government to government creditors and official export credits. — c) Subject to reconciliation. — d) Estimated by the authorities at 60 percent of outstanding issues. e) — Applies only to Eurobonds issued in July 1998, in the context of the GKO-Eurobond exchange. Data on nonresident holdings of other Eurobond issues are not available. — f) Equivalent to Rub 76 billion, valued at the end-1998 exchange rate. The ruble amount is the discounted amount that resulted after the GKO/OFZ conversion. Also includes Rub 75 billion of OFZs not covered by the GKO/OFZ conversion. — g) Figures for 1994-97 include equity. At end-1998 such equity amounted to about US-dollar 0.5 billion.

Source: IMF (1999b).

Table 4 —   *Russian Federation: Foreign Currency Debt Service, 1994-1998*
(in billions of U.S. dollars)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	Debt service due[a]											
Total	18.8	19.2	17.9	11.8	13.0	17.1	15.2	14.6	14.6	20.5	14.7	15.9
Principal	14.0	12.7	11.7	5.8	5.8	8.0	6.9	6.6	6.9	13.2	8.0	9.7
Russian-era debt	2.1	2.3	1.6	1.5	3.3	4.8	5.2	5.3	5.1	7.6	5.6	6.7
Soviet-era debt	11.9	10.4	10.1	4.3	2.5	3.2	1.7	1.3	1.8	5.6	2.4	3.0
Interest	4.8	6.5	6.3	5.9	7.3	9.0	8.3	8.0	7.7	7.3	6.7	6.3
Russian-era debt	0.7	0.9	1.0	1.4	2.3	3.3	3.2	2.9	2.6	2.3	2.0	1.7
Soviet-era debt	4.1	5.6	5.3	4.5	5.0	5.7	5.1	5.1	5.1	5.0	4.7	4.6
	Debt service paid											
Total	3.7	6.4	6.9	5.9	7.8	...	...	...	...	...	...	...
Principal	2.3	3.3	2.9	1.7	3.5	...	...	...	...	...	...	...
Russian-era debt	2.1	2.3	1.6	1.5	3.3	...	...	...	...	...	...	...
Soviet-era debt	0.2	1.0	1.3	0.1	0.2	...	...	...	...	...	...	...
Interest	1.4	3.1	4.1	4.2	4.3	...	...	...	...	...	...	...
Russian-era debt	0.7	0.9	1.0	1.4	2.2	...	...	...	...	...	...	...
Soviet-era debt	0.7	2.1	3.1	2.8	2.1	...	...	...	...	...	...	...
	Debt service paid (in percent of debt service due)											
Total	19.5	33.4	38.6	50.1	59.7	...	...	...	...	...	...	...
Principal	16.2	26.3	24.5	28.8	60.6	...	...	...	...	...	...	...
Interest	29.0	47.4	64.9	71.1	59.0	...	...	...	...	...	...	...

a) Does not take debt rescheduling agreements with the London Club of February 2000 into account.

Sources: IMF (1999b), BEA (1999), own calculations.

Table 5 —   Timetable of the Debt Rescheduling Agreements

28.10.1991	"Memorandum of Understanding on the Debt to Foreign Creditors of the Union of Soviet Socialist Republics and its Successors"
2.4.1993	Debt rescheduling agreement with the Paris Club: Rescheduling of the debts due by 31.12.1993 with a cutoff date 1.1.1991 and a repayment period of over one year. Repayment: 6 year grace period followed by ten semi-annual installments between 1999 and 2003; Extension for credit taken on after 1.1.1991 and for credit with a repayment period of under one year; Capitalization of 60% of interest due by 1993; Volume of rescheduled debt: ca. 14.5 billion US-dollar; Financial obligation for 1993: almost US-dollar 2 billion; Terms and conditions: Conclusion of an agreement with the IMF by 1.10.1993
	Declaration by the government of the Russian Federation on the acceptance of sole responsibility for the external liabilities and assets of the former USSR
4.6.1993	Debt rescheduling agreement with the London Club: Rescheduling of the debts contracted before 1.1.1991 of the amount of US-dollar 24 billion; Repayment: 15-year maturity including 5 year grace; Extension for credit taken on after 1.1.1991 and for credit with a repayment period of under one year; Capitalization of 40% of interest due by 1994 (along with interest payable from previous agreement); Financial obligation for 1994: ca. US-dollar 3 billion; Terms and conditions: Fulfillment of the conditions of the IMF agreement from 20.4.1994
3.6.1995	Debt rescheduling agreement with the Paris Club: Rescheduling of the debts due by 1994 with a repayment period of over one year. Repayment after 3 year grace period followed by 26 semi-annual installments from 1998 to 2011; Extension for credit taken on after 1.1.1991 and for credit with a repayment period of under one year; Capitalization of ca. 35% of the interest payable on the previous agreement; Volume of rescheduled debt: ca. 6.4 billion US-dollar; Financial obligation for 1995: ca. US-dollar 3.9 billion; Terms and conditions: Fulfillment of the conditions of the IMF agreement from 11.4.1994
16.11.1995	Agreement in principle with the London Club for a comprehensive rescheduling of the debt of the former Soviet Union: Rescheduling of debt of over ca. US-dollar 25.5 billion, repayment after 7 year grace period from 2002 to 2015; Payment of ca. US-dollar 2 billion in accrued interest of ca. US-dollar 7 billion; Capitalization of part of the interest due during the first six years; Volume of rescheduled debt: US-dollar 32.5 billion
15.4.1996	Long-term debt rescheduling agreement with the Paris Club: Rescheduling of debt due between 1996 and 1998 as well as the agreed repayment and interest payment from the previous agreements; Repayment of the main part in 20 years with 6 year grace period in gradually rising annuities, Repayment of the rest in 25 years with 6 years grace period; Capitalization of part of the interest due on 1996-1998 credit, no capitalization of the interest from the agreements Russia I-III; Volume of rescheduled debt: US-dollar 40.2 billion; Financial obligations for 1996: ca. US-dollar 9.5 billion; Terms and conditions: Fulfillment of the conditions of the agreement reached with the IMF on 27.3.1996

Table 5 continues ...

Table 5 (continued)

17.8.1998	Announcement by the government of the Russian Federation of a unilateral restructuring of the ruble-denominated public debt (GKO/Offers); Restructuring of US-dollar 17.2 billion Treasury bills held by non-residents was proposed in November 1998; Introduction of temporary restrictions on capital account foreign exchange operations by the residents of the Russian Federation by proclaiming a 90-day moratorium (i) on repayment of financial credits extended by the nonresidents to residents, (ii) on insurance payments on the credits backed up with the pledged securities, (iii) on forward exchange contracts; by prohibiting the nonresidents to invest in ruble assets with maturities of one year or less; and by proposing legislative changes to tighten control over the outflow of foreign exchange resources abroad. The moratorium did not apply to repayments on the service of the foreign government debt and to residents' current account operations; A switch to a floating exchange rate policy
1.8.1999	Agreement with the Paris Club: Rescheduling of ca. US-dollar 8 billion of payments due between 1999 and 2000 over 15-20 years; Financial obligation for 1999-2000: ca. US-dollar 600 million
11.2.2000	Agreement (verbal) with the London Club: A write-off of 37.5% of PRINs face-value, 33% of IANs restructured into a 30 year maturity eurobond with 7 year grace period, semi-annual coupons of 2.25% (annual) and 2.5% in year 1, 5% in years 2-7, 7.5% thereafter. The eurobond will be a Russian sovereign one, pari passu with, and cross-defaultable into, other post-Soviet era Eurobonds. The past due interest is to be restructured into a 10 year eurobond, with 9.5% initial payment, then a 6 year grace period and constant coupons of 8.25%; Exact amortization of principal on both bonds yet not released; The exchange is likely to be offered in the second quarter of 2000, and interest will be accrued on the old bonds till March 31, making that the likely start date of the new bond

Sources: Brücker (1996), World Bank (1992-93), World Bank (1999a), Goldman Sachs (2000), updated by the authors.

Table 6 — Determinants of Russia's Current Account

Explanatory variables	Dependent variable: Current account (CA_t)	
Constant	19.53***	38.10***
	(2.98)	(5.04)
	Error-correction term:	
Log CA (–1)	–0.39***	–0.59**
	(–5.16)	(–7.00)
Log IP (–1)	–12.65***	–17.53***
	(–3.19)	(–5.98)
Log RER (–1)	1.86***	2.87***
	(3.76)	(7.66)
Log $OILPRICE$ (–1)		2.01***
		(5.05)
	Short-run effects:	
Dlog IP (–1)		–4.95***
		(–2.89)
Dlog RER (–1)	–1.45	–2.84***
	(–1.45)	(–2.96)
Dlog RER (–2)	–1.27	–1.91**
	(–1.31)	(–2.17)
$\overline{R}^2$	0.35	0.48
White-test (prob.)	0.12	0.06*
Jarque Bera (prob.)	0.92	0.73
Time period	1994:1–99:9 (n = 69)	1994:1–99:9 (n = 69)

t-values in brackets, ***(**,*) = significant at the 1 (5, 10) percent level. For the long-run coefficients in the error-correction equation, *t*-values were obtained from the Bewley-transformed estimation of equation (1). t-value for the loading coefficient of the error-correction term were taken from Banerjee et al. (1992). A dummy variable (not reported) for January 1998 was used to ensure normal distribution of the residuals and to correct for heteroskedasticity. Tests on autocorrelation of a degree of up to the 12th order provided no evidence for autocorrelation in the residuals.
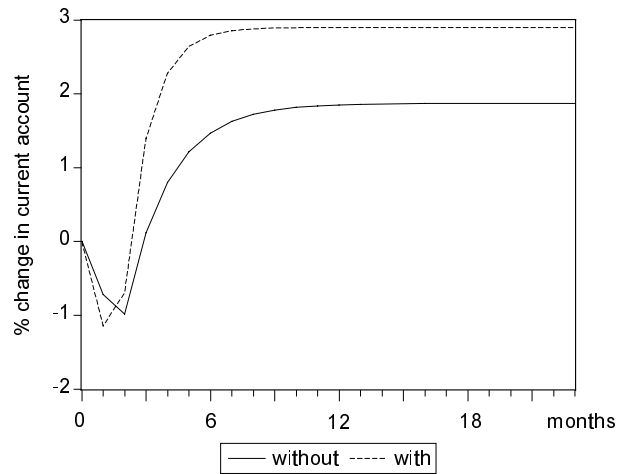
Sources: own calculations.

Table 7 — Consolidated Budget

	1992[1]	1993	1994	1995	1996	1997	1998	1999	1992[1]	1993	1994	1995	1996	1997	1998	1999
	in % of total revenues/total expenditure								in % of GDP							
Revenues, total	100	100	100	100	100	100	100	100	28.0	29.0	29.0	26.1	24.8	23.5	24.5	26.8
Profit taxes	29.4	33.8	27.5	27.0	17.3	15.8	14.7	18.4	8.2	9.8	8.0	7.0	4.3	3.7	3.6	4.9
Personal income taxes	8.1	8.8	9.9	8.4	10.1	11.6	10.8	9.8	2.3	2.6	2.9	2.2	2.5	2.7	2.7	2.6
Excises	4.0	3.6	4.2	5.6	9.6	10.3	10.3	9.1	1.1	1.0	1.2	1.5	2.4	2.4	2.5	2.4
VAT	37.5	22.5	21.0	22.0	25.8	26.5	23.8	24.0	10.5	6.5	6.1	5.7	6.4	6.2	5.8	6.4
Tax on international trade and transactions	8.8	4.7	10.8	4.6	3.0	1.1	2.4	2.9	2.5	1.4	3.1	1.2	0.7	0.3	0.6	0.8
Capital revenues	...	...	...	...	...	2.0	2.0	1.9	...	...	...	...	...	0.5	0.5	0.5
Privatization	...	...	...	...	...	1.8	2.7	...	...	...	...	...	...	0.4	0.7	...
Budgetary funds	...	...	...	...	...	...	...	8.1	...	...	...	...	...	...	...	2.2
Other	12.2	26.6	26.6	32.3	34.2	30.9	33.3	26.0	3.4	7.7	7.7	8.4	8.5	7.3	8.2	6.9
Expenditures, total	100	100	100	100	100	100	100	100	31.4	33.6	38.5	29.4	28.9	28.6	28.0	28.0
Economy	34.5	28.1	27.0	...	...	...	...	...	10.8	9.4	10.4	...	...	...	...	...
Industry, Energy, Construction	...	...	...	7.4	6.0	4.6	2.9	2.5	...	...	...	2.2	1.7	1.3	0.8	0.7
Agriculture, fishing	...	...	...	4.2	3.9	3.4	2.6	2.9	...	...	...	1.2	1.1	3.4	0.7	0.8
Transport Communication	...	...	...	2.7	...	2.8	2.5	2.1	...	...	...	0.8	...	0.8	0.7	0.6
Socio-cultural purposes	23.2	24.9	23.5	26.0	28.9	34.0	31.7	29.2	7.3	8.4	9.0	7.7	8.4	9.7	8.9	8.2
Education	...	...	...	11.6	...	...	...	...	...	...	...	3.4	...	...	...	...
Health	...	...	...	8.3	...	...	...	...	...	...	...	2.4	...	...	...	...
Social security	...	...	...	4.2	...	...	...	...	...	...	...	1.2	...	...	...	...
Defense	14.3	12.5	11.9	9.8	9.8	10.2	7.5	9.3	4.5	4.2	4.6	2.9	2.8	2.9	2.1	2.6
Administration, law enforcement	5.9	7.3	7.9	7.7	...	10.3	9.6	9.7	1.8	2.4	3.0	2.3	...	2.9	2.7	2.7
International trade	7.0	4.8	2.1	4.4	4.1	...	...	...	2.2	1.6	0.8	1.3	1.2	...	...	...
Debt service	...	...	...	5.1	6.6	6.2	14.2	13.0	...	...	...	1.5	1.9	1.8	4.0	3.6
Environment protection	...	...	...	...	...	0.5	0.4	0.4	...	...	...	...	...	0.2	0.1	0.1
Budgetary funds	...	...	...	...	...	...	...	7.4	...	...	...	...	...	...	...	2.1
Other	15.2	22.5	27.5	8.6	40.9	28.0	28.5	23.6	4.8	7.6	10.6	2.5	11.8	5.6	8.0	6.6
Overall balance in % of Expenditure/GDP	−10.8	−13.8	−24.5	−11.2	−14.4	−18.0	−14.0	−4.3	−3.4	−4.6	−9.4	−3.3	−4.2	−5.1	−3.5	−1.2

[1] In 1992 the volume of unreported fiscal activities was extraordinary high. Voprosy Ekonomiki (1994: 42).
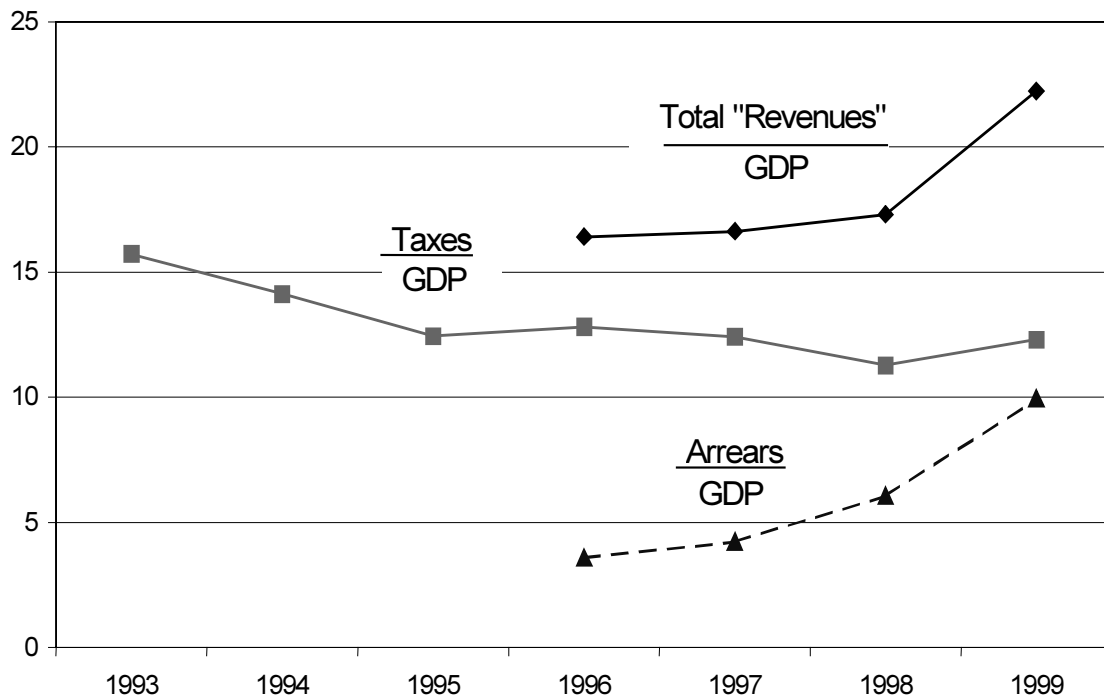
Sources: Goskomstat (various issues), own calculations.

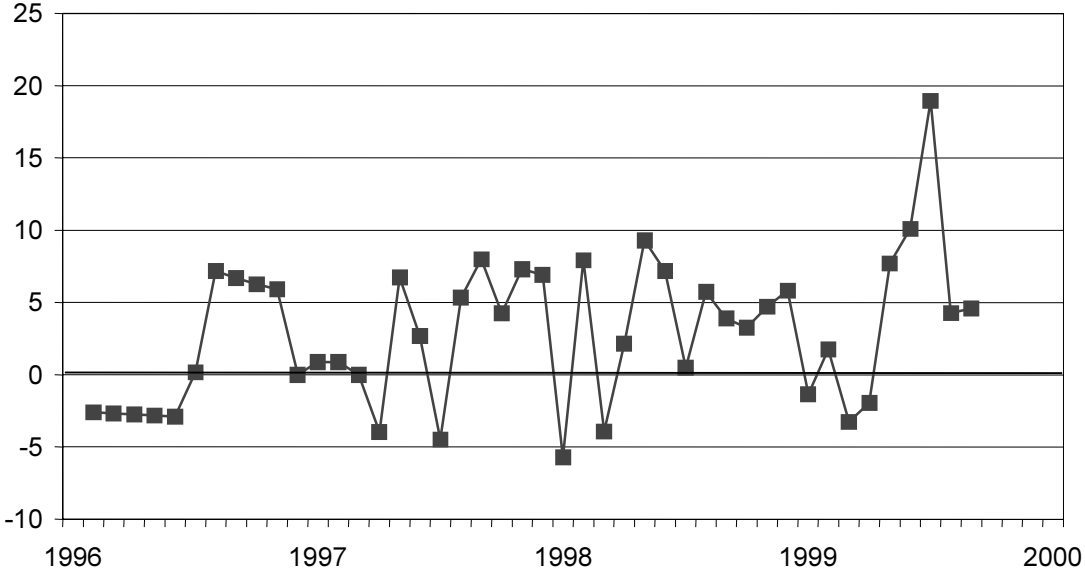*Graph 1 — Simulation of a 1-percent Real Devaluation*

With (without) = estimation which takes (does not take) change of oil price into account.

*Graph 2 — Fiscal Policy Instruments at the Federal Level (percentage of GDP)
1993-1999*

Source: Goskomstat; own calculations.

Graph 3 — Tax Arrears (percentage change on previous period) 1996-2000

Sources: Goskomstat; own calculations.