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The Structure of State Debt in the Long-Term Perspective

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The author is a member of the Economic Expert Group. Table of contents omitted.

1. Brief summary of contents

State debt does not exceed 65% of the GDP for the majority of the most highly developed countries, with Italy and Belgium the exceptions among the countries of Western Europe. The component of state debt in foreign currency for the countries of Western Europe that have the maximum credit ratings is insignificant. The existence of debt denominated in foreign currencies entails exchange rate risks. Most European governments are planning to limit budgetary financing to euro borrowings in the next 5--10 years, while making insignificant currency borrowings in order to preserve access to markets oriented toward the dollar and the yen.

The state debt of the RF government as of January 1, 2000 totaled 105% of the GDP, of which ruble debt was just 13% of the GDP and foreign (currency) debt was 92% of the GDP. This structure was the result of the real devaluation of the ruble in 1998, which increased the ruble equivalent of foreign debt by a factor of 4.5, along with the inflation that devalued domestic debt and the sweeping foreign borrowings in 1998. Domestic debt totaled 20.2% of the GDP before the crisis at the end of 1997, while debt in foreign currency was 32.4% of the GDP.

The defining factor for changes in the structure of state domestic debt in the RF was the move away from emission financing of the deficits to borrowings in the securities market. Whereas in 1993 Central Bank lending to the government made up 80% of state domestic debt, that percentage had declined to 16% in 1996 as a result of the devaluation of old debt and new borrowings, while in 1997 it dropped to zero as a result of the sequestering of the debt to the Central Bank. The percentage of securities in the domestic debt of the RF rose from 2% in 1993 to 90% in 1997, and did not decline afterward.

The tight monetary and credit policy in 1995 resulted in a drastic decline in inflation and a rise in real interest rates. The inefficiency of the Russian banking system and the high levels of budget deficits also facilitated the preservation of interest rates at a high level, and the short-term nature of the borrowings. And even though the amount of domestic debt was not excessive -- the debt on the GKO-OFZs [state short-term bonds/federal loan bonds] was just 17.6% of the GDP -- the maturity structure of the domestic debt was characterized by a concentration of significant amounts of repayment in less than one

year. The payment schedule at the beginning of 1997 already envisioned spending for servicing and repayment of GKO-OFZs at a level comparable to budget revenues.

The novation of the GKO-OFZs radically improved the maturities structure of RF domestic debt and reduced interest expenses starting in 1999; the correlation of securities and other components of domestic debt remained virtually unchanged therein.

The foreign debt of the former Soviet Union inherited by the Russian Federation exceeded \$90 billion; moreover, that Soviet debt was by and large medium- and short-term. In 1991-92, the Russian Federation started negotiations with the London and Paris clubs of lenders on a restructuring of the foreign debts of the former Soviet Union. The maturity structure of state foreign debt improved markedly as a result of the restructuring. Just roughly 20% of foreign debt for the next five year had been repaid as of the start of 1998. The problem in the case of Russia's foreign debt was not the payment schedule, but rather the excessive amounts of the debt. Despite the fact that the currency debt of the RF was just 32% of the GDP at the end of 1997, the ratio of all state debt to federal budget revenues exceeded 500% for 1997.

The percentage of domestic debt made up of new debt of the RF increased as a result of the new foreign borrowings. The percentage of RF debt and all foreign debt increased sharply in 1998, when the government pursued a policy of replacing domestic debt with foreign owing to the high interest rates in the domestic market. Foreign debt rose by more than \$20 billion in 1998, including due to the placement of Eurobonds in the market, the conversion of some of the GKO into Eurobonds, and borrowings from MFOs [international financial organizations]. The debts of the RF were approximately 1/3 of all foreign debt as of January 1, 2000, with Eurobonds rising to 10% of foreign debt therein.

In order to get an idea of the subsequent dynamic of RF state debt, we made illustrative calculations using the long-term forecasting model developed by the Economic Expert Group. Four variations for borrowing strategy were done -- domestic borrowing alone, foreign borrowing from international financial organizations alone, foreign borrowing in international capital markets alone, and limited foreign borrowing while raising the rest of the financing in the domestic market. It was assumed that the budget would remain balanced in 2001--2020 (with a surplus in the years of significant debt repayment burdens from 2003 to 2005). The growth rate of the GDP (endogenous) was an average of 3.5--3.6% over that period. There was a gradual rise in the real exchange rate of the ruble to approximately 85--89% of the 1997 level up to the year 2015 in all the variations, and then a slight decline in the real exchange rate of the ruble to roughly 82--83% of the 1997 level.

The calculations showed that when the budget was executed with a zero net balance and with a surplus in the years of peak debt repayment burdens, and with GDP growth of 3.5% a year, the state debt of the Russian Federation is on a steady trajectory under any borrowing strategy.

In the next few years, state debt will decline as a percentage of the GDP due to the real strengthening of the ruble and GDP growth, provided the government follows a balanced budget policy.

The percentage of state debt in foreign currency will decline as a result of the strengthening of the ruble. But even in the event of zero foreign borrowings from 2001 through 2015, foreign debt will not decline to less than 50% of state debt.

In the event of financing through the placement of Eurobonds, the adjusted cost of debt servicing will be 20% higher than in the event of borrowings from MFOs.

Finally, sweeping foreign borrowings will lead to an accelerated strengthening of the ruble exchange rate through the increased supply of foreign currency.

According to the results of the calculations, the optimal strategy from the standpoint of minimizing the ratio of state debt to the GDP in the long run is the refinancing of debt through domestic borrowings, while from the standpoint of minimizing the costs of debt servicing, it is refinancing the debt through borrowings from international financial organizations. It is obvious that the second strategy is hardly feasible in pure form. What is more, the results of the calculations, aside from everything else, were predicated upon assumptions regarding interest rates in the domestic securities market and the Eurobond market. So the better of the possible borrowing strategies presumes moderate foreign borrowings, primarily from international financial organizations, while raising the rest of the funds necessary to refinance the debt in the domestic market.

The policy of a balanced budget and borrowings in the domestic market just to cover cash shortfalls will lead to an increase in the percentage of securities with a reduction in such components as state guarantees, notes and debts of the Soviet Union and RSFSR through their repayment. The settlement of the problem of the accounts payable of the federal budget through their reformulation into securities could lead to a one-time increase in domestic debt and a rise in the percentage of securities. The increased scale of borrowings in the domestic market will lead to growth in the short-term portion of the debt, although this factor will not pose any danger given the existing amount of domestic debt.

As a result of the repeated restructuring of debt to the London Club and the restructuring of indebtedness on the third installment of OVVZs [domestic currency bonds], the amounts of RF Eurobonds in circulation could double, and their percentage of foreign debt could increase to 25% by the end of the year 2001, and will increase through new borrowings.

2. The state debt of developed countries

[insert Table 1, pages 7-8]

Information regarding the amounts of state debt and the breakdown of that debt into foreign and domestic for the most developed countries of the world is given at the beginning of the paper in order to provide a point of reference when analyzing the state debt of the RF. The amounts of state debt do not exceed 65% of the GDP for the majority of the most highly developed countries, with Italy and Belgium the exceptions among the Western European countries. The governments of the European countries have set state debt of an expanded government not to exceed 60% of the GDP as one of the criteria for accession to the European Monetary Union. Nevertheless, by the beginning of the year 2000 there were only five countries in the euro zone that explicitly met these expanded government debt criteria -- Luxembourg, Finland, Ireland, Portugal, and France.

[insert Table 2, page 9]

It can be seen from Table 1 that certain countries divide state debt into foreign and domestic depending on the currency in which the debt is denominated (national or foreign), while others do so depending on who owns the debt -- residents or non-residents. Foreign debt in this paper will be understood to mean debt denominated in foreign currency, which corresponds to the practice in the RF.

The component of state debt in foreign currency is insignificant for the countries of Western Europe with the maximum credit rating (AAA according to the Fitch-IBCA agency scale). Finland is an exception, with currency debt of the central government totaling 28% of the GDP in mid-1997, as is Belgium, where the currency debt of the central government totaled 9% of the GDP in 1998.

The debt of the United States is denominated entirely in dollars, which gives that country a fundamental opportunity to pay off its debt in any amount through emissions. Such countries as Canada, France, Germany, Luxembourg, Netherlands, Japan, Australia, and Great Britain also hardly ever resort to borrowing in foreign currency to finance their budgets. The existence of debt denominated in foreign currencies entails exchange rate risks. Most European governments are planning to limit budget financing to borrowings in euros in the next 5--10 years, making insignificant currency borrowings to preserve access to markets oriented toward the dollar and the yen.

3. The basic risks of debt management

3.1. The choice between domestic and foreign borrowings

The choice between borrowings in foreign currency and domestic borrowing in the national currency is determined by the following factors as a whole:

[insert Table (3), page 11]

After the conversion of an overwhelming number of the European countries to the system of the European Monetary Union, the number of hard currencies in which Russian debt is

denominated and in which new borrowings are possible has declined significantly. In the future, Russia will have to consider the possibility of borrowings and debt servicing in U.S. dollars, euros, and SDRs. The principal portion of Russia's foreign debt falls to the first two currencies, so Russia carries basic exchange rate risks against the dollar and the euro.

Two approaches exist to the management of currency risk when making new foreign borrowings -- those being strategic borrowings, and *ad hoc* borrowings in currencies that are "cheap" at a given moment (from the standpoint of interest rates), with a subsequent swap into the national currency. The practice of Germany, France, and the Netherlands of borrowing only in euros (with small exceptions predicated upon the requirements of foreign trading) is one example of a strategic approach to currency risk. However, this approach is essentially equivalent to borrowing in the national currency as discussed above.

With regard to the management of the currency debt of the Russian Federation, it would be theoretically correct to hedge the risks of a strengthening of the currencies in which Russian foreign debt is denominated relative to the ruble with the aid of swaps and options. However, the market for derivative instruments in operations with the Russian ruble is not developed enough, either in Russia or abroad, to provide sufficient amounts for dealings. The sole instrument for managing the currency structure of Russian debt and hedging currency risks is still the choice of the currencies for new borrowings.

The problem of the presence of non-residents in the Russian securities market

The Russian domestic securities market is characterized by one more specific risk associated with the less than full convertibility of the ruble. This is a factor of the presence of non-residents in the Russian market. Non-residents had more than 1/3 of the market portfolio of ruble securities (more than 15% of domestic debt) in the first half of 2000, and conducted about 40% of the operations in the domestic securities market. The percentage of non-residents before the financial crisis of 1998 was approximately the same, and non-residents (after the complete liberalization of the conversion terms of investments) played a leading role in the development of the crisis in the GKO-OFZ market.

The experience of prior years has shown that the percentage of non-residents in the Russian market cannot be regulated. The opportunities for repatriation are currently limiting the removal of funds of non-residents by the placement of special issues of GKO-OFZs. Under the conditions of the practical impossibility of converting and repatriating funds, the presence of a significant, non-hedged portfolio of non-residents automatically stabilizes both the GKO-OFZ market and the currency market. However, the situation cannot stay that way for an indefinite time, and the government, under pressure from foreign investors, will have to acquiesce sooner or later to a liberalization of the rules for the repatriation of investments in GKO-OFZs. Then both the refinancing and interest rate risks and the risks of a ruble devaluation will increase many times over.

3.2. The interest rate risk

The National Bank of Denmark uses the Cost-at-Risk method for the management of interest rate risk. Cost-at-Risk estimates "the maximum expected increase in the cost of debt servicing of the central government with a prescribed probability for a certain period of time." This methodology estimates the likelihood that interest rates will be higher or lower than the current market level over a certain time period (one year, for example). A probability distribution of interest expenses is then created. It is compared to the existing level of expenditures for debt servicing, so as to assess the maximum expected level of expenditures for debt servicing and the corresponding increase in interest. Debt managers are supposed utilize this information, along with estimates of changes in duration, in order to obtain an idea of the risk associated with a certain portfolio.

This method is used both to assess the risks for debts with variable interest rates, and to assess the risk of a possible increase in the cost of servicing debt with zero or fixed-rate coupons.

After the determination of interest rate risk, that risk is hedged using swaps (the exchange of flows in various instruments, not affecting the principal amount of the debt). As a rule, a national lending organization usually acts as the partner of the government in swap operations. This entails the appearance of a new risk -- partner risk. Governments try to reduce this risk by limiting the circle of possible partners in debt operations to banks with a certain rating (A or AA) and by establishing limits on operations with certain banks (for example, not more than 20% of the amount of a swap).

The Russian banking system is still not efficient enough to act as a partner to the Ministry of Finance for swap operations. So the Ministry of Finance has tried to reduce interest rate risk in the domestic market by increasing the share of bonds with fixed interest rates (OFZ-PDs) and reducing the share of bonds with floating interest rates and discount bonds -- this policy was pursued in 1997, when the most favorable conditions had taken shape in the market. Only fixed-rate instruments are placed in the Eurobond market. This strategic line will obviously continue to the extent confidence in Russian securities is restored.

3.2. The risk of refinancing

The turnover periods of the bonds are extended in order to minimize the refinancing risk. At the same time, reducing the cost of debt servicing -- the interest rate -- is most often the priority when borrowing. The yield curve has a positive slope when there is a well-developed secondary securities market. Interest rates on short-term debt prove much more attractive, but at the same time short-term debt is more vulnerable to fluctuations in interest rates. So the goal of reducing refinancing risk could come into contradiction with the minimization of interest expense in the short run.

[insert Table 4, page 15]

The duration of the foreign debt of Russia according to our estimates is ten years, the duration of domestic debt (not counting the Central Bank portfolio) is about three years, and the overall duration of Russia's debt is about nine years. Russia is ahead of all the European countries in this indicator, information regarding which is given in the table. Such significant duration is the result of several restructurings of various parts of state debt. The restructuring of the debt to the Paris Club of lenders in 1996 in particular made it possible to stretch out the repayment of debts to the official lenders to the former Soviet Union to the year 2020, and the repeated restructuring of the debt to the London Club in 2000 increased the maximum maturity for the repayment of that portion of the debt to 2030. The novation of the GKO-OFZs, and the reformulation of the government debt to the Central Bank into long-term OFZs that preceded it in 1997, significantly increased the duration of domestic debt. At the same time, the refinancing of debt through market borrowing would not have made such a long duration of the payment schedule possible. The maximum borrowing term in the domestic market was three years and the maximum term of borrowing in the Eurobond market was 20 years, but only \$500 million was placed in Eurobonds on those terms. The average term of the Eurobonds that were placed was about seven years.

3.4. The creation of new instruments

Aside from traditional coupon and zero coupon bonds, another two types of instruments are widespread in the European financial markets, one of which has not yet been used by Russia -- strips and indexed bonds.

Strips are bonds that permit the separation of the coupons and the debt principal on the bonds. The advantage of this type of bonds is that they expand the spectrum of possible interest rate parameters (maturity date, minimum amounts) and increase market liquidity. The governments of Germany and Great Britain provide incentives for the separation of state bonds into coupon payments and debt principal by combining the coupon periods. At the same time, these bonds have limited dissemination compared to traditional discount and coupon bonds.

Indexed bonds have become widespread, and are even used in countries with low inflation. The terms of issue of these bonds can assume the indexing of coupons and/or debt principal according to the rate of inflation, the exchange rate of a foreign currency, or the price of some good. Corporate bonds that are indexed to the exchange rate of the dollar have been issued in Russia since 1999, and indexed state bonds (state non-market loan bonds) even earlier, although it is true they were placed and continue to be placed privately. The advantage of this type of bonds from the standpoint of the issuer is in the determination of the real cost of borrowing, while from the standpoint of the holder, it is the absence of inflation or exchange rate risk.

The idea of expanding the issue of indexed bonds has been discussed in Russia for many years. The circle of potential holders of indexed state bonds includes both the population and corporate entities that prefer reliability and long duration for their investments, such as insurance companies and pension funds. The issue of market state bonds indexed to

consumer prices could provide an impetus for the development of non-state pension funds [NPFs], since up until recently the development of NPFs has been held back by the lack of long-term low-risk investments. As a whole, the issue of indexed bonds is desirable for the development of the sector of non-bank financial organizations due to structural considerations. At the same time, indexed bonds are inferior to traditional bonds denominated in the national currency from the standpoint of the issuer, since the entire inflation or exchange rate risk lies with that issuer. In this sense, indexed bonds can be equated to foreign currency debt, and should likewise be taken into account when determining the risk of a credit portfolio.

3.5. State debt and the pension system

Many Western economists are expressing concern regarding the aging of the population as reflected in the increased percentage of retirees among the population, leading to an increase in the obligations of the pension system, a decline in savings, and a decline in labor productivity on a national scale accordingly. So a review of state debt along with the obligations of the pension system is proposed quite often, since both the one and the other are cumulative obligations. The principal risk is the fact that the peaks of pension payment expenditures and debt refinancing could coincide in time, causing a sharp rise in interest rates. State debt and pension system obligations should be considered together in order to devise an even schedule for the repayment of those obligations, and to avoid short-term borrowings where possible.

4. **The amount and structure of state debt of the RF**

[insert Fig. 1, page 18]

The state debt of the government of the RF as of January 1, 2000 was 105% of the GDP, of which domestic (ruble) debt was just 13% of the GDP, while foreign (currency) debt was 92% of the GDP. The ratio of foreign state debt to the GDP had increased sharply therein, both owing to the real devaluation of the ruble and the contraction of the GDP as well as due to extensive foreign borrowing. The domestic debt (not counting OVVZs) totaled 20.2% of the GDP at the end of 1997, while debt in foreign currency was 32.4% of the GDP.

4.1. The evolution of the structure of state domestic (ruble) debt

[insert Fig. 2, page 18]

The two historically largest components of the domestic debt of the RF are indebtedness to the RF Central Bank and securities.

Indebtedness -- this category included the indebtedness of enterprises to banks on centralized credit that has not been restructured into notes. However, the bulk of this category in 1992-96 was made up of the indebtedness of the RF Government on Central Bank credit to cover the budget deficits sustained in 1991-94.

Securities -- these are the GKO, OFZ, savings loan bonds, non-market loan bonds, state lottery loan of 1992, and gold certificates and treasury obligations.

The debt of the Soviet Union and RSFSR includes all ruble loans placed before 1992.

Guarantees are state guarantees on bank credit to enterprises and organizations.

Notes are notes of the RF Ministry of Finance issued as a result of the restructuring into state obligations of the indebtedness of enterprises on centralized credit for the support of the agro-industrial complex and the Northern Plant, indebtedness on the formation of a mobilization reserve, and other types of indebtedness. They have thus been relegated to a separate category, rather than being included among securities. These obligations were included in domestic debt only at the time the indebtedness was reformulated.

The change in the structure of domestic debt reflects the colossal change in the policy for financing the state budget and monetary and credit policy that occurred in 1994-97. Before 1994, the budget deficit was financed by and large through Central Bank credit. Before 1995, government indebtedness to the Central Bank constituted a large portion of state debt, and the percentage of indebtedness on Central Bank credit for the financing of the budget deficit dropped from 80% of state domestic debt in 1992 to 67% in 1994. A further decrease in this component of state domestic debt was also a condition of the devaluation of the old debt as a result of inflation, and aside from that an increase in the borrowing in the GKO-OFZ market and the reformulation of the remaining Central Bank debt and interest on it into federal loan bonds in 1997.

New instruments were introduced concurrently with this, and the old credit indebtedness was reformulated into state obligations and paid off. In 1994 the Ministry of Finance started to issue ruble bonds for the public, and in 1995, coupon bonds with a variable coupon. The indebtedness to the Pension Fund to compensate for expenditures on pension and benefit payments was paid off in 1995, and the indebtedness on the Kamaz AO [joint stock company] was reformulated into Ministry of Finance notes in 1996. It may be said as a whole that the Ministry of Finance had gone to normal borrowing practices, relying on market instruments, by 1997.

A drastic decline in inflation and rise in interest rates in real terms was a consequence of the tight monetary and credit policy in 1995. The ineffectiveness of the Russian banking system also facilitated the preservation of interest rates at a high level, and the short-term nature of the borrowing. Borrowings at real interest rates in 1995-97 led to the rapid augmentation of domestic debt. The increase in state spending in 1996, on the eve of the presidential elections, played a particularly ruinous role. As a result, even though the domestic debt was not excessive even by the standards of the European Monetary Union (the GKO-OFZ debt totaled just 17.6% of the GDP), the maturity structure of domestic debt was characterized by a concentration of significant amounts of repayment within one year. The payment schedule as of the beginning of 1997 already envisioned the servicing and repayment of the GKO-OFZ at a level comparable to budget revenues.

The Ministry of Finance realized the threats associated with the short-term nature of domestic debt, and in 1997 made efforts to extend the terms of borrowing. The market placement of two- and three-year bonds with fixed interest rates was begun in July of 1997. The average term of the ruble securities (OFZs) that were placed in 1997 increased from eight months in December 1996 to 16 months in July 1997. Interest rates in the GKO-OFZ market declined to an absolute minimum in July-September 1997, with the average yields of ruble obligations during this period less than 19%.

The start of the world financial crisis significantly reduced the freedom of maneuver in managing domestic debt. Demand for GKOs and OFZs declined, while the volumes of repayment per month were comparable to budget revenues. The first response of the government and Central Bank to the changed market conditions was a reduction in the maturities and amounts of borrowing in the market, an increase in the placement of long-term securities to the Sberbank [Savings Bank] and Central Bank, and the replacement of domestic borrowing with foreign. Those measures made it possible to postpone a default on domestic debt right up until the summer of 1998, when interest rates in the domestic market reached 60% and continued to go up.

In order to ease the payment schedule on GKOs in July 1998, the Ministry of Finance came out with an offer for the holders of short-term GKOs and OFZs to exchange those securities for Eurobonds with maturities of 2005 and 2018. GKOs with a nominal value of 27.5 billion rubles were exchanged for Eurobonds with a nominal value of \$5.9 billion as a result of this operation. There were GKO issues totaling 282 billion rubles at nominal value in circulation as of July 1, 1998; that is, investors had exchanged less than 10% of the GKOs on hand for Eurobonds. About half of those operations went to the Sberbank therein.

The logic of exchanging GKOs for Eurobonds is clear -- in July of 1998, the government and the Bank of Russia still believed it would be possible to avoid a ruble devaluation by reducing the short-term debt burden and raising sweeping currency credit from the IMF. This can also explain by the high price that was paid to exchange the short-term GKO debt for Eurobonds. At the same time, this means that even the minimal likelihood of a possible devaluation was not taken into account when carrying out the exchange.

The amount and structure of domestic debt changed insignificantly as a result of the exchange -- debt declined (from this operation) by 5%, and the percentage of GKOs in domestic debt dropped from 50% to 45%. Foreign debt also increased by approximately 5%, but the amount of Eurobonds in circulation increased immediately by 70% therein.

The decline in payments on domestic debt in August and September was insignificant, and the suspension of payments on GKO-OFZs with maturities through December 31, 1999 was announced on August 17, 1998. This decision was predicated upon the drop in currency reserves of the Central Bank resulting from the conversion of funds from the weekly redemption of GKOs and OFZs into currency by both residents and non-

residents. The secondary auctions on GKO and OFZ were halted at the direction of the Central Bank.

A very great deal has been written regarding the restructuring (novation) of the GKO and OFZ with maturities through December 31, 1999. It should be noted that this measure radically improved the time structure of domestic debt in the RF, and reduced interest expenditures starting in 1999, while leaving the ratio of securities and other components of domestic debt virtually unchanged. Debt with an average maturity of less than six months was reformulated into three- to five-year bonds.

[insert Figure, page 22]

The graph does not reflect payments in cash in the course of the novation, while the repayment of securities issued within the context of restructuring the Central Bank portfolio pertained to later terms.

4.2. The structure of foreign (currency) debt

[insert Figure, page 23]

After the break-up of the Soviet Union, the Russian Federation as its legal successor assumed the foreign debt of the former Soviet Union abroad and the debts of the other countries of the Soviet Union. The foreign debt of the former Soviet Union exceeded \$90 billion at the end of 1991; even though the obligations of the Soviet debtors -- primarily poor developing countries -- were formally even more, in practice the recoverability of those debts was very low, and the Russian Federation entered the phase of economic reforms burdened by significant foreign debt. In 1992 the foreign debt of the RF, including the debt of the former Soviet Union, totaled more than 200% of the GDP, with the Soviet debt by and large medium- and short-term therein. That level of foreign debt could not be serviced. The Russian Federation started negotiations in 1991-92 with the commercial and official creditors of the former Soviet Union -- the London and Paris clubs of lenders -- regarding the restructuring of foreign debts. The negotiations with the London Club concluded in October of 1997 with the signing of a set of documents regarding a long-term restructuring by the Vneshekonombank [Foreign Economic Bank] and the Banking Consultative Committee of the London Club.

The PRIN debt instruments with maturities through December 2, 2020 were issued in the amount of \$22.1 billion in the context of restructuring the debt principal. The repayment of principal was to have been made twice a year starting in 2002. The indebtedness on interest payments to the London Club was reformulated into IAN bonds worth \$6.1 billion with maturities through December 2, 2015. Payments on the debt principal also started in 2002. The overdue interest payments to the London Club in the amount of \$3 billion were repaid after the deal was completed.

The other significant portion of the debt of the former USSR -- the indebtedness to the Paris Club -- was ultimately restructured in April of 1996. According to the terms of the

restructuring, the repayment of the principal, which totaled about \$42 billion, was stretched out to 2020, and the repayments in 1996-98 were insignificant therein.

As a result of the restructuring of the greater portion of the debt of the former USSR, the time structure of state foreign debt was radically improved. Just about 20% of foreign debt for the next five years had been repaid as of the beginning of 1998.

[insert Table 5, page 24]

The problem in the case of Russia's foreign debt is not the payment schedule (which was valid for domestic debt), but rather the excessive amount of debt. Despite the fact that the currency debt of the RF had not declined in nominal terms before 1999, its ratio to the GDP had declined to 74% by the end of 1994, 39% by the end of 1995, and 32% by the end of 1997 as a result of the strengthening of the ruble in real terms. The state debt of the RF was close to the criterion for countries of the European Monetary Union at the end of 1997 -- the debt of the federal government was 52.5% of the GDP (while the criterion from Maastricht is not more than 60% of the GDP for expanded government debt), of which 32.4% of the GDP fell to foreign debt. The two-fold real devaluation of the ruble in 1998 threw Russia back to the 1993 level for that indicator. Before the crisis, the indicator of the foreign debt to exports ratio was also average by world standards -- the ratio was about 150% in 1997. By way of comparison, the analogous indicator for developing markets is an average of about 170%. At the same time, the ratio of state debt to federal budget revenues for 1997 exceeded 500%. Now it is obvious that the full servicing of such debt was impossible, but in 1997 both investors and representatives of the executive authorities in the RF were expecting growth in the GDP and the increased collectibility of taxes, and did not consider the debt burden to be excessive.

The percentage of the debts of the former USSR in the foreign debt of the RF has declined consistently as a result of new borrowings by the Russian Federation. The share of RF debt and all foreign debt increased in 1998 in particular, when the government was pursuing a policy of replacing domestic debt with foreign due to the high interest rates in the domestic market. Foreign debt rose by more than \$20 billion over 1998, including by \$11.3 billion from the placement of Eurobonds in the market and the conversion of some of the GKO's into Eurobonds, while borrowings from the IMF were \$6.7 billion.

The borrowings of the Russian Federation in 1993-98 could be relegated to the category of medium- and long-term. The maturities of the IMF credit for most type of credit were not more than five years, with the average circulation of the Eurobonds placed in 1996-98 at about eight years. The percentage of state foreign debt in Eurobonds exceeded 10% at the beginning of 1999. The Eurobond debt has higher status than other types of foreign debt. Eurobond operations are governed by international legislation, and the possibility of a cross-default -- the presentation of all issues of Eurobonds for repayment in the event of a delay in payments on one of them -- does exist. What is more, the interest rate on Eurobonds was higher than on the IMF credit and the restructured debt of the former USSR.

The two-fold real devaluation of the ruble, drop in production, and decline in the collectibility of taxes in 1998 and the beginning of 1999 made the servicing of foreign debt impossible. The government selected the course of restructuring the foreign debt of the former USSR. The reason for that choice are analyzed in detail in the Survey of Economic Policy in Russia for 1999, in the chapter on "Foreign Debt" written by EEG experts O. Dynnikova and E. Gurvich. The negotiations with the London and Paris clubs of lenders led to the achievement of agreements -- a final one with the London club of lenders, and an interim one with the Paris club. By agreement with the Paris Club of lenders, the 1999-2000 payments (by and large interest), totaling \$8 billion according to the schedule, were reduced to \$620 million. A final resolution of the restructuring of payments by the Russian Federation to the Paris Club was postponed until the second half of 2000.

The terms of the secondary restructuring to the London Club, made public on February 27 of this year, have already been discussed repeatedly, for example in a publication by the Bureau of Economic Analysis and in an article by E. Mitrofanova² in the journal *Rynok tsennykh bumag [The Securities Market]*. The PRIN and IAN bonds are being exchanged for 30-year Eurobonds with discounts of 37.5% and 33%. The volume of the bond issue is \$18.4 billion, with a nominal average weighted circulation period of 17.5 years and a nominal average weighted interest rate of 6.4%. The adjusted value of payments on the debt to the London Club decreases by 51% (in the estimation of E. Mitrofanova), which is being provided not only through the write-off of 36.5% of the debt, but also through a significant reduction in payments in 2001-05 and the shifting of a large portion of the payments on the debt principal to 2015-24.

Almost simultaneously with the signing of the agreement with the London Club, the Ministry of Finance published the terms of a restructuring of the third installment of the OVVZ. The bonds, at the option of the owner, are exchanged at face value for 1999 state currency bond loan bonds [OVGVZ] with an average maturity of eight years and a coupon rate of 3%, and/or for federal loan bonds with a circulation period of four years and coupon rate of 15% annually the first year and 10% annually subsequently. The nominal value of the currency bonds in an exchange of the bonds from the third installment of the OVVZ for OFZ-FDs is being converted at the average official exchange rate of the U.S. dollar for the first work week in November 1999, which was 26.2 rubles to the dollar.

The Ministry of Finance had received applications totaling \$470 million for the restructuring of the third installment of OVVZs by the end of the first quarter of 2000. About 94% of the third-installment OGVVZs that were accepted for the novation were exchanged for 1999 state currency loan bonds, and on the order of 6% for federal loan bonds with fixed coupon yields.

5. Results of modeling the dynamic of state debt in the long term

In the preceding two sections, the conclusions relative to the structure of state debt and the policy of state borrowing that have now become generally known were set forth. It is

much more complicated to give a forecast and recommendations for the future. In order to get an idea of the further evolution of the structure of state debt in the RF, we have done some scenario calculations using a model developed by the EEG.

Four variations were made for borrowing strategy -- domestic borrowing alone, foreign borrowing from international financial organizations alone, foreign borrowing in international capital markets alone, and limited foreign borrowing while raising the rest of the financing in the domestic market. It was assumed in all variations that the budget would remain balanced in 2001-20 (and have a surplus during the years of significant debt repayment burdens in 2003-05). The growth rate of the GDP (endogenous) in all of the variations calculated was an average of 3.5--3.6% over this period. There was a gradual rise in the real exchange rate of the ruble to 85-89% of the 1997 level by 2015 in all calculation variations, and then a slight decline in the real exchange rate of the ruble to approximately 82-83% of the 1997 level. In all computational variations, revenues from privatization of one billion dollars annually were inherent as a source of financing (non-debt financing). Also of no small importance is the fact that the average world price of oil is about \$19 per barrel in all of the computational variations.

[insert Table 6, page 29]

Calculations have shown that under these conditions, the state debt of the RF is on a steady trajectory (sustainable path) under any borrowing strategy. True, the model seriously fails to take into account the dependence between the amounts of borrowing and the level of interest rates in the domestic market, which displaces the results of the calculations somewhat toward a favorable outcome. At the same time, the following conclusions can be drawn from these hypothetical results.

In the next few years, state debt to the GDP will decline in percentage terms thanks to the real strengthening of the ruble and GDP growth. This conclusion seems quite well-founded, provided that the government follows a balanced budget policy. It is interesting that this finding remains valid provided there is a low GDP growth rate (at a level of 3% a year) and higher interests in the domestic market in the next five years, but debt in terms of a percentage of the GDP will naturally decline more slowly therein.

The percentage of state debt in foreign currency will decline as a result of the increased strength of the ruble and the possible borrowing strategy. Given a balanced budget, the refinancing of foreign and domestic debt through external sources alone is theoretically possible. But this scenario will require annual gross foreign borrowings on average equal to \$15.3 billion in the years of 2001-15. The amounts of borrowing will rise throughout that entire period. Such a level of borrowing does not seem possible for Russia, and significantly increases the refinancing risk. So we can consider as possible scenarios only those with limited or zero foreign financing. But even in the case of zero foreign borrowings from 2001 through 2015, foreign debt does not drop below 50% of state debt.

The variations for foreign borrowing from international financial organizations and foreign borrowing in international capital markets alone were calculated for comparison

of the value of debt servicing. In the event of financing through the placement of Eurobonds, the adjusted value of the debt servicing proves to be 20% higher than in the case of borrowing from the IMF. That is quite a big difference, which illustrates the fact that we should not forego financial credit from the IMF voluntarily.

Finally, a last assertion, which could be illustrated by the results of the calculations (although it is a property of the model). Sweeping foreign borrowings will lead to the accelerated strengthening of the ruble exchange rate, by increasing the supply of foreign currency. Thus, in the scenario with zero domestic borrowing, the average real ruble exchange rate for 2001-15 is from 76 to 79% of the 1997 level, while with zero foreign borrowing the ruble exchange rate is approximately 72% of the 1997 level. This is quite a big difference from the standpoint of the competitiveness of domestic industry. It should also be noted, for the sake of fairness, that the model effectively does not take into account the impact from the displacement of investments by state borrowings in the domestic market.

According to the results of the calculations, the optimal strategy from the standpoint of minimizing the ratio of state debt to the GDP in the long run is the refinancing of debt through domestic borrowing, while from the standpoint of minimizing the costs of debt servicing, it is the refinancing of debt through borrowing from international financial organizations. The second strategy obviously is hardly feasible in its pure form. What is more, the results of calculations were predicated, aside from everything else, on assumptions regarding interest rates in the domestic securities market and the market for Eurobonds. So the better of the possible borrowing strategies presumes moderate foreign borrowing, primarily from international financial organizations, while raising the rest of the funds necessary to refinance the debt on the domestic market.

In the medium term, the government of the RF intends to pursue a policy of a balanced budget, and to make borrowings in the domestic market only to cover cash gaps. This will lead to an increase in the percentage of securities in the face of a decrease in such components as state guarantees, notes, and debts of the Soviet Union and RSFSR thanks to their repayment. Two factors that could affect the structure of domestic debt in the future are a resumption of borrowing in the domestic market, and the settlement of the problem of the accounts payable of the federal budget.

The Ministry of Finance did not need to resort to borrowing in the domestic market for budget financing in 2000 -- the significant surplus, a result of the high oil prices, growth in the monetization of the economy, and improvements in the collectibility of taxes, covered the requirements for refinancing domestic and foreign debt. The placements of GKO in 2000 were aimed at tying up the excess liquidity of the banking system. The most long-term of the issues of GKOs for residents that were placed at auction in the first half of 2000 had maturities of four months. Before the placement of medium-term ruble securities becomes possible, the stages of placing semi-annual, ten-month, and annual GKO issues are inevitable. This will increase the percentage of short-term debt. The duration of the already existing debt will decline with time. Thus, by the time the real borrowing starts for financing the budget in the domestic market, the maturity breakdown

of domestic debt will again be characterized by a large share of short-term debt, although given the existing amounts of domestic debt, that factor will not pose any danger.

A significant portion of the accounts payable of the government remains unsettled as of today. The accounts payable of the government were up until recently included in state debt only as of the moment of official recognition or reformulation (we included them either in the category of notes or the category of indebtedness). In the future, if the problem of accounts payable of the federal budget is resolved through their reformulation into securities, it will change both the structure of domestic debt and the amount of it. The indicator of domestic debt itself considered apart from accounts payable is somewhat hypothetical.

The following may be said with regard to changes in the structure of the foreign debt of the RF. The supply of RF Eurobonds will increase significantly as a result of the repeated restructuring of debt to the London Club and the restructuring of indebtedness on the third installment of the OVVZ. The cost of servicing will be 7.5% and 8.25% for Eurobonds issued to reformulate the debts to the London Club, and 3% for Eurobonds issued in exchange for the third installation of the OVVZ. Proceeding from the terms of the restructuring, the amounts of RF Eurobonds in circulation could double, and their share of foreign debt will increase to 25% by the end of 2001. According to statements of representatives of the government, Russia will gain access to the Eurobond market not later than the end of 2001. Taking into account the increased share of Eurobonds in the foreign debt of the RF as a result of the restructuring and the results of the modeling, additional borrowings in the Eurobond market seem to pose more risk than the domestic financing of borrowing from international organizations.

Footnotes

1. This forecast is not a payment schedule, since it includes assumptions regarding new borrowings.

2. E. Mitrofanova, B. Nazdratenko, A. Kuzmenko. *Pereformlenie zadolzhennosti RF Londonskomu klubu kreditorov v tsifrakh [The Reformulation of the Indebtedness of the RF to the London Club of Lenders in Figures]*. -- *Rynok tsennykh bumag*, No. 11, 2000.