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Financing the Storm

Macroeconomic Crisis in Russia, 1992–93

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Stabilization of inflation during Russia's macroeconomic crisis will be a race between the authorities' willingness and ability to tighten monetary and fiscal policy and the adjustment of enterprises and households to existing inflation.

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Summary findings

Easterly and da Cunha examine Russia's macroeconomic crisis in 1992 and 1993, focusing on fiscal and monetary policies. They show how the large transfers from the government to the enterprise sector exacerbated the crisis.

Money creation did not finance the narrow (cash) budget deficit of the government. Rather, money creation financed the huge directed credit programs aimed at specific sectors and enterprises, including assistance to other economies of the former Soviet Union to sustain Russian exports. During 1992 enterprises and households financed this effort with their large flow of savings, but while enterprises largely avoided the inflation tax, households did not.

Enterprises benefited most from the loose fiscal and monetary policies of the Russian government in 1992–93. The enterprises were net recipients of transfers from the budget and the main beneficiaries of the inflation tax (which nearly offset their own inflation tax payments).

The main losers from high inflation were households.

As many have noted, inflation in Russia correlates well with past money growth. Real money and the real exchange rate are also closely correlated.

Money demand in Russia is well above international comparisons, controlling for inflation and negative interest rates. But the trend of money demand is obviously down. Current levels of monetary financing cannot be maintained without an increase in inflation. Even if the government takes no actions that lower money demand, *it will fall anyway* as the financial system and households and enterprises adjust to inflation. Banks and enterprises are finding ways to reduce the float and excess reserves with the central bank.

Stabilization of inflation will thus be a race between the authorities' willingness and ability to tighten monetary and fiscal policy and the adjustment of enterprises and households to existing inflation.

This paper — a joint product of the Macroeconomics and Growth Division, Policy Research Department, and Country Operations Division II, Europe and Central Asia, Country Department III — is part of a larger effort in the Bank to study the macroeconomics of transition. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rebecca Martin, room N11-043, extension 39026 (51 pages). January 1994.

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**FINANCING THE STORM:
MACROECONOMIC CRISIS IN RUSSIA, 1992-93**

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Russia has been in macroeconomic crisis since the collapse of the communist economic system at the end of 1991. At the same time, major reforms have been undertaken, most notably an unprecedented privatization effort and an initial, if incomplete, outburst of price and trade liberalization. Russia now faces the issue of how to accelerate structural change that will advance the conversion to a market economy while dealing with the macroeconomic crisis. This paper addresses the dimensions of the macroeconomic crisis.

Although some have argued that macroeconomic stabilization is a matter of indifference compared to the building of a new economic system, it is doubtful that the one is possible without the other. The output loss from diversion of real resources to speculative activity and trading (because of the uncertainty and relative price variability associated with high inflation) is probably severe (Ball and Cecchetti (1990)). Private investors do not find the uncertain environment of extreme inflation very conducive to new ventures (Pindyck and Solimano (1993)). Common sense tells you that you shouldn't plant crops during hurricanes.

As elsewhere, inflation in Russia has re-drawn the boundaries of interests among conflicting (or potentially conflicting) groups. We will show that depositions at the savings bank (Sberbank) and households with fixed income have been the main losers. It is more difficult to identify those who have gained. Because price variability has remained extreme, the inflationary process has been somewhat erratic in the apportioning of gains and losses among sectors. Inflation, however, has been fundamentally linked to access to privileged funding from the state. At a minimum, therefore, it is possible to identify those who had an interest in continuing the state's inflationary policies, and fear the consequences of specific disinflationary methods. There is growing tension between two groups whose interests are diverging diametrically over the timing and pace of stabilization (it would be helpful but wrong to characterize them as reformers and reactionaries). There are those who see the *process* of stabilization as essential for reform. For if it is to be successful stabilization can only be achieved by reducing, if not severing, the ties between enterprises and the state, by eliminating special regimes and dispensations, by diminishing the access of entrenched interests to the state (and reducing corruption). Others favor stabilization but fear its instruments. Though they may not have gained systematically from inflation, and though they agree on the ultimate unsustainability of high inflation, many have existing claims which are fundamentally threatened by stabilization through price and trade liberalization, deregulation and loss of directed credits.

We examine the macroeconomic crisis in 1992 and 1993, focusing on fiscal and monetary policies. We will see how the enterprise sector exacerbated the macroeconomic crisis by receiving large transfers from the government. In contrast to other episodes of high inflation, money creation did not finance the government's external obligations; its financing of the narrow (cash) budget deficit was minimal. Instead, money creation financed the huge directed credit programs aimed at specific sectors and enterprises, including assistance to other FSU economies to sustain Russian exports. During 1992 enterprises and households financed this effort with their large flow of savings, but while enterprises largely avoided the inflation tax, households did not. Enterprises and households, however, are increasingly moving away from ruble financial savings in the banking system, which implies that maintaining the current government use of money creation will require rising rates of inflation. The threat of hyperinflation is not necessarily greater today than it has been in the last few months. The government has many levers to pull because there are still many controls and centralized directives. But the clock is ticking. The spread of market relations has transformed stabilization into a race between effective fiscal and monetary tightening and the adjustment of enterprises and households to the existing inflation.

The plan of the paper is as follows: in section I we will summarize fiscal and monetary policies and the flows of financing between the government, enterprises, and households that they engendered. In section II, we will discuss the monetary roots of inflation, including the distribution of the inflation tax. We will examine the likely future behavior of money demand, and thus, inflation. In section III, we will discuss the implications of our analysis for policy.

SECTION I: ENTERPRISE AND GOVERNMENT FINANCING, 1992-93

In this section, we will show the loss of control in fiscal and monetary policies. We will look what that implied for the financing from the enterprises and households to the government and vice versa.

FISCAL AND MONETARY ACCOUNTS

Monetary flows. Table 1 shows monetary flows quarter by quarter in the Russian economy. The story shown by the table is well known: after initially tight monetary policy (relatively speaking) in the first quarter of 1992, credit was loosened for the rest of the year.¹ The floodgates truly opened in the third quarter, with a remarkable 71 percent of GDP in new money creation, fueled by huge credits to enterprises with the scheme for unraveling enterprise arrears. The flow of new credits to government also reached large-scale proportions in the second half of 1992. Credits to other republics to finance their deficit in trade with Russia played a reinforcing role, especially in the second quarter of 1992. The credit expansion in the second half of 1992 soon showed up in accelerated inflation and currency depreciation.

A part of the expansion of M2 was accounted for by the accumulation of foreign exchange deposits, reflecting the progressive dollarization of the economy (more on this below). Table 1 shows that this was usually matched one for one with accumulation of foreign assets by banks. In other words, banks took the foreign currency deposits received from enterprises and deposited them abroad. In effect, these resources were lost to the system for credit creation. Increasingly, the central bank funded the banking system directly, through on-lending arrangements for the various directed credit programs.² Currency substitution with rapid money growth -- and inflation -- made the "inflation tax" on the remaining ruble assets in the monetary system all the more severe.

1/ The severity of the tight money in the first quarter may have been worsened by a severe shortage of currency, a common phenomenon in high inflations (Fischer and Lee 1993). The cash constraint resulted in substantial wage arrears. This cash constraint was resolved in a few months with the printing of high denomination bills. The tight money is also alleged to have contributed to the problem of interenterprise arrears, but this is just as likely to have been the attractiveness of arrears under highly negative real interest rates.

2/ In 1992, the various directed credit programs to sectors and enterprises summed to R3.7 trillion or 22 percent of GDP (using the new GDP estimate of R17 trillion). This includes the programs administered by the CBR (using the commercial banks) and disbursed through the Ministry of Finance. See World Bank (1993), especially Annex 2, for a detailed analysis of the programs and magnitudes. Credits to other republics summed to R1.7 trillion or 10 percent of GDP.

At the end of 1992 and beginning of 1993, as the economy approached hyperinflation, there was a modest tightening of monetary policy. Domestic credit to the government was especially sharply reduced, while credit to the rest of the economy and to other republics was modestly decelerated. Directed credits were also reduced sharply. The monetary tightening was cemented by a formal agreement between the Ministry of Finance and the Central Bank of Russia on credit targets, and by an agreement of the authorities with the IMF under the Systemic Transformation Facility.

The agreement was short-lived. As the summer harvest season approached, the CBR initiated a new wave of agricultural credits to finance *Rosskhleboprodukt's* centralized procurement of grain. The scheme is highly inefficient and detrimental to the development of a competitive grain market, yet in 1992, it alone consumed nearly 4 percent of GDP in highly subsidized resources. So far in 1993, R2.3 trillion have been allocated to this program, mainly in the third quarter and all at very low nominal interest rates. Another R1.5 trillion were granted (at half the CBR's discount rate) to finance subsidized procurement of goods to the Northern Territories. And, once again, the Credit Policy Commission -- which had been the watchdog of credit policy early in 1993 -- approved large concessionary credits to favored enterprises under the conversion and public investment programs. Though the CBR managed to slowdown the pace of credit expansions to the banking system (to a monthly average of 14 percent in the second and third quarters of 1993) central bank credits to the Government grew rapidly--notably in the third quarter.

It is clear that the temporary restraint in CBR credit expansion had little effect on inflation in 1993, despite the rather strong association (discussed below) between the rate of growth in monetary aggregates (M2) and the rate of inflation. Two other effects are important. First, base money continued to grow at a rapid clip as the CBR monetized a large gain in net foreign assets. A contraction in imports (which fell in the first half of 1993 to half their level a year earlier) coincided with a dramatic improvement in official export earnings. (The government raised tariffs and reduced sharply import subsidies; it tightened controls on exports mainly by re-introducing centralized procedures for the export of oil.) The surplus in recorded external trade soared to nearly \$10 billion in the first half of 1993 and a far greater share of recorded foreign earnings transacted through the official exchange markets.³ Beginning in July, as the CBR allowed all foreign exchange surrender requirements to be paid through the commercial banking system, the volume of foreign exchange supplied to the Moscow Interbank Foreign Currency Exchange (MIFCE) increased rapidly. The CBR's position in the market changed from supplier to buyer of dollars.

Second, there is an important shift in the composition of base money in the period. Banks ran down excess reserves with the CBR, resulting in a sharp increase in the money multiplier. In June 1993 excess reserves held at the CBR had fallen to 39 percent of the ruble deposit base from 46 percent in June of 1992. Banks used these resources to expand ruble credit with the result that the rate of growth of total credit remained fairly high through 1993.⁴ Of course, the volume of excess reserves is still extraordinarily large -- and it cannot fall significantly until there are marked improvements in the

^{3/} Deficiencies in the Russian balance of payments statistics are notorious. It is very likely that imports are grossly underestimated in 1993 as importers found ways to escape higher tariffs and other hazards of registering imports.

^{4/} Banks also bought eagerly the newly created supply of Treasury Bills. Though yields are low (the Ministry of Finance has limited the amounts supplied at the auctions and bids are open to all commercial banks, including *Sberbank*) they are the only kind of remunerated reserves in the system.

payments system. But the large volume of excess reserves is a time-bomb for future inflation and it greatly complicates the management of monetary policy.

In short, for a combination of reasons the flow of resources to Russian enterprises has remained stubbornly high practically since the onset of price liberalization. In sharp contrast to either the classical or the recent Latin American and Israel hyperinflations, neither the financing of the narrow budget deficit nor the financing of external obligations has played the predominant role during the Russian inflation process, amounting to less than a quarter of total credit issue. Rather, monetary growth has been fueled by extending credits to the publicly owned enterprises and by voluntary credits to the other FSU countries aimed at stabilizing export demand for Russian enterprises.

Fiscal developments. Table 2 shows the quarterly fiscal accounts. The fiscal pressure in 1992 was unremitting. The deficit in the first quarter exceeded 23 percent of GDP and it remained at about this level for the following three quarters.⁵ Though it is difficult to compare, the fiscal deficit, excluding the operations of the Central Bank, was apparently larger in 1992 than in 1991.⁶ There are, however, important differences in the composition and financing of the deficit in 1991 and 1992. These differences are crucial for understanding the sources of inflationary pressures in the economy.

Two striking facts emerge from a closer look at the composition and financing of the deficit in 1992. First, import subsidies were almost completely financed externally and thus did not increase the (current) domestic credit to the government -- this explains the seeming contradiction between huge fiscal deficits and relatively small volumes of domestic credit to the government. Second, the excess of expenditures over revenues roughly equals the sum of domestic subsidies, the costs of replenishing the working capital of state owned enterprises and the costs of subsidizing imports.⁷

The time path of the fiscal variables matches that of monetary policy. Domestic revenues more than covered domestic expenditures in the first quarter of 1992. As the arrears "crisis" orchestrated by the organized (large) enterprise sector led to its intended result of an increase in fiscal transfers to enterprises, the Government's cash position swung from a surplus into increasingly larger deficits. The deficit widened from 8.6 percent of GDP in the second quarter to 15.9 percent of GDP in the third. The size of the combined credit and fiscal transfers to enterprises in the third quarter is truly impressive. The fiscal stimulus was matched by a doubling of the credit flow from 21 percent of GDP in the second quarter to 43 percent of GDP in the third (see Table 1). The result was the already noted explosion in

5/ See Appendix 1 on measurement of the fiscal variables.

6/ See Nagy (1993).

7/ Import subsidies mushroomed in early 1992. The budget had no mechanism to reflect the rapidly changing value of the market exchange rate. Official imports through budgetary organizations were essentially sold at the prevailing mid-1991 exchange rate. The severely depreciated ruble expanded the ruble counterpart flows to foreign financing, but the Government gave away nearly all the counterpart flows through import subsidies. Without import subsidies the fiscal accounts for the first quarter of 1992 show a surplus of nearly 1 percent of GDP. At the time, the Government was unaware of the extent of subsidization. The cash deficit of the Government reflects the intended contractionary fiscal stance, designed to counteract the inflationary impetus of price liberalization in the presence of a huge monetary overhang. See World Bank (1992), Chapter 1 for a review of macroeconomic policy early in 1992.

money growth -- in the third quarter of 1992 net domestic assets of the CBR grew at an average monthly rate of 33 percent. Hence the astonishing growth of broad money, even excluding the endogenous effects of the depreciation of the exchange rate.⁸

Fiscal policy tightened somewhat in the fourth quarter of 1992, with the domestic cash deficit declining to 9.4 percent of quarterly GDP.⁹ The narrowing of the deficit is due entirely to an extraordinary if partially spurious revenue performance. As indicated in Table 2, VAT revenues jumped to 17 percent of GDP in the quarter. Partly this is the result of a parallel expansion in directed credit from the CBR to settle remaining inter-enterprise arrears (including arrears within the FSU). Upon payment, the VAT obligation on past transaction was due, and collected.¹⁰ Also the revenue expansion in the fourth quarter is due to once-and-for-all gains from changes in the tax legislation: to a system of pre-payment of the VAT. The same regime was introduced for the profits tax early in 1993.

Revenues remained stable at around 40 percent of GDP in the first quarter of 1993, some 8 percent short of expenditures. Increases in revenues from the profit tax (pre-payment of the tax due in 1993 and settlement of the tax due in 1992) and from export taxes (following the re-centralization of oil exports) offset the fall in VAT revenue prompted by a politically mandated decrease in the VAT tax rate from 32 to 28 percent. Both revenues and expenditures fell in the second quarter. However, the trend in expenditures was artificial -- it was partly the result of a buildup in budgetary arrears. It also reflects a temporary and unsustainable sequestering of expenditures for mandated fiscal programs (e.g. payments of salary increases to civil servants). Preliminary evidence points to a deteriorating fiscal picture in the third quarter of 1993.

Arguably, the tightening in early 1993, though transitory, avoided the onset of hyperinflation. Indeed, the initial implementation of the May 1993 agreement between the MoF and the CBR raised hopes of a more lasting turnaround in macroeconomic policy which were quickly reflected in the foreign exchange markets if not in short-run rates on inflation. By August, however, the fiscal outlook changed for the worse yet again, pressed by mounting arrears on government payments. In July and August 1993, substantial deficits were recorded, clearly beyond the ceilings established in the May agreement.

As in 1992, the 1993 budget was caught in the political fight between Parliament and the administration. The budgetary confusion led to slippages and mismanagement. But the outcomes in the summer of 1993 are also a reminder of the limits of voluntaristic policy statements. The revised draft 1993 budget (submitted by the Government to the Supreme Soviet on June 30) implied an overall deficit for 1993 in excess of 12 percent of GDP, about 2.5 percent of GDP above the target agreed in May. The revisions merely incorporated political decisions which had been taken in the campaign leading to the Referendum and that could not be reversed (e.g. an increase in minimum wages and pensions). As expected, the Supreme Soviet approved a budget with an even larger expenditure envelope -- and with

8/ Including the effects of exchange rate changes on the valuation of foreign exchange deposits, the increase in M2 was 92 percent of quarterly GDP in the third quarter of 1992, compared to 71 percent of GDP in that quarter if one excludes the exchange rate effects.

9/ Alexashenko (1992) provides details on the evolution of the fiscal system.

10/ This is one of several instances where the distinction between fiscal and monetary policy is blurred. In effect, CBR lending to enterprises was used to fund the budget deficit in a pattern not uncommon in other transition economies. For a fuller discussion see Tanzi (1993).

a projected deficit of more than 20 percent of GDP. The Government rejected the proposal but did not adjust its own fiscal stance. The deepening political crisis, which prompted the President's dissolution of Parliament and subsequent events, has dominated policy.

Reducing the fiscal imbalances is clearly a necessary condition for sustained disinflation. There is a sense in which the amount of foreign financing, import subsidies, and consolidated general government deficit are all exaggerated as a share of GDP (see Appendix 1). Nevertheless, fiscal deficits which generate nominal financing requirements of about 20 percent of GDP for three years running are not sustainably financeable, not even in the special circumstances of transition economies. Though there is much confusion and uncertainty about the budgetary numbers, in 1993 the Government's fiscal deficit could be as large as in 1992. There will be some reduction in the quasi-fiscal pressures emanating from the central bank but this will not be enough by itself.

Nor is the tax burden unusually low, especially when consideration is taken of the extrabudgetary funds which are not properly reflected in the budget. Admittedly the gap between statutory rates and actual collections is large and growing—and tax buoyancy is falling as inflation continues. But overall, the tax performance has been good. The problem is that fiscal expenditures grew faster than revenues. They increased from 19 percent of GDP in the first quarter of 1992 to 50 percent in the last quarter, and they have remained broadly stable since.¹¹ In contrast to other economies in transition (Cf. McKinnon (1992) and Bruno (1993)), price liberalization and inflation produced an increase in the revenue base (at least vis-a-vis the dismal performance at end-1991). Again in contrast to other transitional economies, the VAT generated surprisingly large revenues in its initial implementation. Revenue developments in 1992 were dominated by the VAT and the profits tax. Both taxes displayed rapid yield growth, raising the revenue to GDP ratio from 17 percent in the first quarter to 41 percent in the last quarter (although increase was partly due to peculiar one-time factors). It would be wrong to blame a poor revenue performance for the fiscal outcomes in 1992 and 1993.

OVERVIEW OF FINANCING FLOWS, 1992-93

It is useful at this point to step back to see how the fiscal and monetary policies described in the previous section affected the whole economy. Despite some remarkable achievements, Russia's reform is mired in extreme instability. The problem is not entirely or even mainly macroeconomic, but the addressing the macroeconomic issues would surely reduce uncertainty. Judged by the usual standards, the macroeconomic situation has essentially remained unchanged since 1991, the last year of the old system. The comparison is superficial and misses the tremendous change in economic relations from a system where money didn't matter, not even as a unit of account, to one where it most definitely does.¹² There are, however, some striking similarities: Then, as now, a large flow of saving from households and enterprises financed a large government deficit. The only difference is that the resulting inflation was repressed in 1991 (leading to a remarkable increase in the monetary overhang), while the inflation in 1992-93 is open.

A useful device to give a summary of the financing flows in 1992 is a flow of funds table, shown in Table 3. The summary is complete in that the total income, expenditure, and financing flows are

^{11/} Alexashenko (1992) provides details on the evolution of the fiscal system.

^{12/} This point is most convincingly argued in Blejer (1993).

shown for all the participants in the economy, broken down into six sectors: households, enterprises, government, the rest of the world outside the former Soviet Union ("external"), the republics of the former Soviet Union ("FSU"), and the consolidated monetary system of the Central Bank of Russia and commercial banks ("monetary"). All flows are shown from the point of view of both the spender and the recipient, with income received recorded as a plus and expenditure recorded with a minus.

In the case of income originating from participation in production, the spender is said to be "GDP", and the recipient is the respective wage-earner or profit-maker. Thus, the first part of table 3 shows the income side of GDP, following the conventional breakdown, $GDP = \text{wages} + \text{profits} + \text{indirect taxes} - \text{subsidies}$.

There is another item special to Russia, "other income", which is the huge amount of income unaccounted for in the conventional statistics. It is tempting to conclude that this figure represents value added in new private enterprises, as well as under-reporting and diversion of incomes in state enterprises. While there are doubtless many unmeasured private activities, they are unlikely to already account for 27 percent of GDP. We must look elsewhere to explain the magnitude of the residual. In fact, there are also good reasons to suspect that official statistics exaggerate value added in state enterprises. The main problem is that enterprises (and the official statistics) account output at current prices but account inputs at the cost of acquisition. This means that a lag of only a couple of months between purchasing the inputs and using them in production can lead to artificially inflated "profits", which include a couple of months of capital gains on the inputs. At the high rates of inflation experienced by Russia in 1992, the bias introduced into total value added (GDP) was probably substantial.¹³

The next section of Table 3 shows direct transfers between sectors, which do not directly generate any value added.

The third section of Table 3 shows the expenditure side of GDP, i.e. $GDP = \text{Net exports} + \text{Investment} + \text{Consumption} + \text{Inventory Accumulation}$. In this section, in the mirror image of the income side, the recipient of the flow is "GDP" and the spender is the respective household, enterprise, etc. making the expenditure. Note that a surplus of net exports (positive under GDP) is a net expenditure for the other former Soviet republics (a negative under FSU, offsetting the slight deficit of Russia vis a vis the non-Soviet rest of the world.) Again, there is a large residual item measuring expenditure that are unaccounted for in the official statistics, reflecting the gap between the probably inflated official figure for value added and the more accurately measured expenditure flows.

The excess of expenditure over income must equal the financing obtained for each sector. The bottom part of Table 3 shows financing flows between sectors. The flow is recorded both from the point of view of the lender and borrower, analogously to the treatment of income and expenditure. Borrowing is shown as a plus and lending as a minus. The monetary system (including both the commercial banks and the Central Bank of Russia) is the intermediary for much of the financing flows.

Table 3 makes clear the following points about the flows of financing in 1992:

- (1) The large budget deficit did not spill into an external deficit for the economy as a whole. External financing to the government was offset

^{13/} We are indebted to Mark Schaffer for this point.

by foreign asset accumulation by the monetary system (i.e.: the growth in foreign exchange deposits and in deposits of the banking system abroad). The counterpart to the budget deficit was a surplus of domestic saving over investment for enterprises and households, a good deal of which was the inflation tax.

- (2) Households, at least according to official statistics, continued to be squeezed in 1992 (as they were in 1991). The need to maintain ruble balances to keep up with inflation took a large amount of their resources (12 percent of GDP), which helped to finance the budget deficit. Their consumption was thus a remarkably low 31 percent of GDP.¹⁴
- (3) Enterprises were flush with resources in 1992, despite all of the dire notices of impending bankruptcies. The outcome may be due to their successful campaign against the financial squeeze imposed at the start of the reform program but, in the end, the aggregate enterprise surplus is estimated at 15 percent of GDP. Profits were healthy and investment continued at a surprisingly fast pace. Enterprises were actually net lenders to the financial system.

RICH ENTERPRISES, POOR ECONOMY

Table 4 gives more detail summarizing enterprise interactions with the rest of the economy in 1992. We see first of all that enterprises were net recipients of resources from the budget.¹⁵ While profit taxes exceeded expectations, collection of taxes on exports and oil and gas were far below targets. The enterprises' receipts of capital transfers, net lending, and producer and import subsidies were greater than the amount of taxes paid.¹⁶ Although the enterprises justified their appeals for subsidies from the

^{14/} Several caveats are needed to compare this figure to other countries. First, many items that are part of private consumption in other countries are still publically provided in Russia. Second, some goods and services provided by the private sector probably went unrecorded. Third, many if not most enterprises pay wages in kind and distribute bonuses out of gross profits. This tendency was reinforced in 1992 as workers looked to ways to index consumption and managers sought to avoid the additional profit tax paid on wages in excess of 4 minimum wages. These payments could have inflated measured profits (see below) but, more likely, they were recorded as "other expenditure" partly accounting for the large residual shown in Table 3. Fourth, GDP is probably exaggerated, as discussed elsewhere in this paper.

^{15/} The links between enterprises and the state (which nominally still owns most of the enterprises) are complex, opaque, and on the whole have deterred rather than fostered enterprise adjustment. Transfers to enterprises include a host of special tax allowances, state procurement arrangements, export quota dispensations, import subsidies and alike, in addition to explicit budgetary items and CBR credits. See World Bank (1993a).

^{16/} The import subsidies accruing to enterprises were imputed on the basis of the share of intermediate inputs versus consumer goods in subsidized imports. It is important to note that the budget, as defined, excludes the operations of the so-called industrial extrabudgetary funds (EBFs). These funds collected revenues of 5.1 percent of GDP in 1992; however, more than half of the "revenue" remained on the balances of enterprises for their own use and another unknown amount was transferred back to selected enterprises. These EBFs are used to subsidize selected enterprises from profits generated by other enterprises typically in the same branch. They are only one of the remaining instruments for cross-subsidization which were prevalent in the Soviet past. See Freinkman and Delyagin (1993).

budget by the allegedly desperate straits they were in, all of the other indicators show a healthy financial condition for enterprises in 1992. The aggregate data demonstrates clearly that the enterprise sector (mainly manufacturing) did not face a hard budget constraint; and there is ample evidence to indicate that, as expected, the resource flow delayed adjustment. There were however important differences among enterprises (for example, military enterprises obviously were harder hit than others) -- and some adjustment did occur.

The available evidence indicates that the pace of adjustment was faster in the smaller and medium-sized enterprises. Privatization, or the prospect of privatization was a strong inducement for change.¹⁷ Though reported unemployment remains low (and may have even fallen in 1993) there is considerable turnover in the labor market. Hours of work have fallen; some estimates point to a reduction of up to 10-15 percent in effective work hours.¹⁸ The main problem appears to be in agriculture and in the larger, especially the largest state-owned enterprises. These are the sectors which have received most of the government-induced financial transfers. The decisions were often political and capricious and it is perfectly plausible for an enterprise to have received large transfers while enjoying a healthy financial position.

While enterprises clamored for credits, they actually accumulated more in banking system assets than they received in loans. Part of the ruble credits they received they used to increase their ruble deposits to keep up with inflation. Part they transferred to workers as higher wages, bonuses and in-kind payments. They also had some of their resources tied up in "float", ruble-denominated items pending settlement in the banking system, which were in essence an interest-free loan to the banking system. Since interest rates on both ruble deposits and loans were very low relative to inflation, the enterprises were both recipients and payers of the inflation tax (see below). However, the ruble flow of credit exceeded the ruble flow of deposit accumulation and float by about 3 percent of GDP. They used this gift to help finance the accumulation of inflation-protected foreign exchange deposits.

Enterprise flows with the real economy also seem to imply a relatively healthy bottom line. Gross profits (including depreciation) were 40 percent of GDP for all enterprises. Fixed investment is estimated at 21 percent of GDP, not a catastrophic low by comparison with past years or international standards. There are no official figures yet on inventory accumulation for 1992, but the Russian Government's Center for Economic Analysis and Forecasting makes a guess-estimate of 9 percent of GDP. Inventory accumulation could be interpreted as the piling up of unsalable output; however, it is just as plausible that enterprises found inventory accumulation attractive as an inflation hedge.

Enterprises also benefitted from the receipt of subsidized interest on directed credits during 1992 (that is, subsidized even by comparison with the puzzlingly low "market" loan interest rate).¹⁹ If we use the inflation rate as a rough estimate of the equilibrium nominal opportunity cost of funds, enterprises

^{17/} See Boyko, Shleifer and Vishny (1993).

^{18/} See Commander, McHale and Yemtsov (1993); Fan and Schaeffer (1993).

^{19/} Throughout 1992 and the first half of 1993 lending rates in the Moscow inter-bank market were significantly negative in real terms. Partly this reflected massive CBR funding of the banks at equally low interest rates. As the CBR moved to increase its lending rate to near parity with the interbank rate (beginning in mid-1993), lending rates have edged upwards to -3 to -6 percent per month in real terms in the third quarter of 1993, (using the observed inflation rate in the month as a proxy for expected inflation).

received interest rate subsidies of 4.6 percent of GDP in 1992 on directed credits, of which only 0.7 percent of GDP was included in the budget. The amount of interest subsidies would have been even higher except that virtually all of the directed credits were received late in the year.

SECTION II: THE MONETARY ROOTS OF INFLATION

How the government resorted to money creation to finance a significant portion of its large budget deficit and extension of credit. Enterprises and households provided this financing through their large flow of savings, but while enterprises largely avoided the inflation tax, households did not. Enterprises and households are increasingly moving away from ruble financial savings in the banking system, which implies that maintaining the current government use of money creation will require rising rates of inflation.

THE LINK BETWEEN MONEY GROWTH AND INFLATION: 1992-1993

The monetary roots of inflation in Russia since price liberalization are fairly clear. Figure 1 shows the correlation between growth of M2 lagged by 4 months and contemporaneous monthly inflation from July 1992 to July 1993. As others have pointed out (similar graphs appear in Sachs (1993), Fischer (1993), and in IMF (1993), although in those sources with a 3-month lag), this close correlation points to monetary sources of inflation (admittedly based on a short period).²⁰ In particular, the acceleration of inflation in the last quarter of 1992 corresponds closely to the acceleration in money growth about a quarter earlier with the loosening of the reins by the Central Bank. The mild deceleration of inflation in 1993 corresponds to monetary tightening at the end of 1992 and beginning of 1993.

The link between money growth and inflation raises the question of the transmission mechanism. Does past inflation (with indexation) lead to wage increases in enterprises, which is then transmitted cost-push into current inflation? It is very hard to resolve these dynamics with the short time series available, and the simple correlations are underwhelming. Figure 2 shows the contemporaneous association between wage growth and inflation. The correlation in the figure is .40. Wage growth has a correlation of only .11 with lagged CPI inflation, while CPI inflation has a correlation of .33 with lagged wage growth.²¹

In survey data (Commander (1993)), consumer prices were cited as a benchmark for wage determination by 53 percent of enterprises, while "available resources" (presumably meaning both credits and own resources) were cited as a benchmark by 93 percent (multiple answers were permitted).

^{20/}

For the reasons explained in Koen (1993), the CPI is the preferred measure of inflation in Russia. The Producer Price Index (PPI) measures prices at the factory gate and thus excludes imported goods. Moreover, "for reasons that remain unclear, cumulative price increases derived by chaining 12 successive monthly PPI inflation rates vastly exceed the corresponding 12-month reported increases" (p. 6); the PPI also exceeds the increases in the implicit deflator for industrial output. The large jumps in the average wage reported for July and December result from the inclusion of payments of bonuses and other profit sharing instruments.

Commander, McHale, and Yemtsov (1993) found a correlation of wage growth and profit growth across regions. Wolf (1993) finds some correlation between lagged credit growth to enterprises and wage growth. A plausible transmission mechanism from credit to inflation would be that an increase in the credit extended to the enterprise sector finds its reflection in higher wages, with a lag of two to three months. Wage growth in turn could be positively correlated with inflation in the following month, if enterprises follow cost-plus pricing rules at least to some degree. Demand-pull inflation would thus be augmented by cost-push inflation.²² While appealing, the evidence for this transmission mechanism is tenuous.

The evidence is far clearer for the link between monetary policy and the foreign exchange market. Figure 3 shows the close correlation between the ratio of ruble M2 to GDP (the inverse of velocity) and the real exchange rate. We show the correlation since July 1992, when the unification of the foreign exchange market made the free exchange rate a more meaningful indicator than it had been in the previously thin market.

Since the domestic price index appears in the denominator of both M2/GDP and the real exchange rate, what figure 3 is really showing is the correlation between nominal ruble M2 and the nominal exchange rate. We see that the exchange rate responds quickly to ruble M2, with a lag of less than a month (the money supply is measured at the end of the previous month, and the exchange rate at mid-month, so the lag is about 2 weeks). Dividing both M2 and the exchange rate by the domestic price index is just a way of removing the strong nominal trend common to both. To say it another way, of the three critical nominal magnitudes -- M2, the exchange rate, and the price level -- the (nearly) contemporaneous association between money and the exchange rate is much stronger than that between money and prices, or that between prices and the exchange rate.²³

The positive association between the exchange rate and ruble money balances is theoretically plausible in the increasingly dollarized Russian economy: monetary expansion helps finance the purchase of foreign exchange almost immediately. While unloading of unwanted monetary balances to buy goods (the traditional workhorse of the monetarist theory of inflation) is not instantaneous, it is clear that buying dollars could be.

Transmission mechanisms from exchange rates (increase in the price of importables) to prices are less clear. There is no simple correlation between lagged devaluation and inflation. One possibility is that the exchange rate adjusts in expectation of the higher inflation. So far these expectations (based on current and future money growth, which in turn depends on such indicators as the fiscal deficit and the extent of directed credits) have been validated a few months later. The associations between lagged money growth and inflation, and between contemporaneous money and the exchange rate, together imply complicated dynamics that we cannot begin to sort out with the short time series available.

^{22/} This point is further elaborated in Wolf (1993).

^{23/} Note that we are excluding the foreign exchange denominated component of M2 to avoid any spurious correlation due to valuation effects.

The lack of direct effect between changes in the exchange rate and price formation can be traced to remaining institutional rigidities, notably the still highly distorted foreign trading system and the thinness of the foreign currency markets outside the main metropolitan areas. Especially in 1992 the huge volume of import subsidies effectively insulated vast segments of the economy from changes in the exchange rate.

Though emphasized by Zhuravlyov and others (see Zhuravlyov, ed (1993)), there is also little systematic evidence of the use of the exchange rate as a unit of account, i.e., quoting prices in foreign currency terms even if payment takes place in domestic currency. While common in the recent Latin hyperinflations as well as in the interwar episodes, it remains difficult to detect a major shift to dollar-based pricing in Russia up to this moment. The evidence on both (i) contemporaneous correlation of inflation rates and the movements in the exchange rate (Wolf (1993)) and (ii) regional variability of inflation rates across markets (Gardner and Brooks, 1993) and Koen and Phillips (1993)) do not indicate either a direct pegging to the exchange rate or increased indexation on a common variable such as the exchange rate.

The reasons for this are obvious. Russia is not a well developed market economy. There are many imperfections and administrative controls in product and factor markets (Cf. Wolf (1993b)). Lack of effective competition and contestability in relevant product markets, pervasive segmentation of factor markets, incomplete price and trade liberalization, and the reliance on barter-based pricing arrangements which are opaque and idiosyncratic. There have been radical changes in relative prices and they are likely to continue. The relative prices for oil, gasoline and diesel fuel were in the range of 30 to 40 percent of world prices in the beginning of 1993, up from about 7 to 9 percent of world prices in 1991. On the other hand, the prices of wood (rough), wool, cotton, copper, zinc and several other intermediate imports declined relative to world prices in the period from 1991 to 1993. In the recent Russian experience it is not the case that prices are uniformly approaching world prices; nor is it the case that the variance in relative prices increases with the average rate of inflation: It is high throughout the post-price liberalization period.

THE INFLATION TAX

Inflation in the presence of low nominal interest rates redistributes wealth from ruble asset-holders to ruble borrowers. The decline in real value of financial assets because of negative real interest rates could be thought of as payment of an "inflation tax" in the broadest sense. The base for the inflation tax in this sense is all of ruble M2. The decline in real value of loans due to negative real interest rates is a boon to the borrower, who can be thought of as the recipient of the inflation tax paid by the asset-holder.

Overall, a remarkably high inflation tax of 30.9 percent of GDP was paid in 1992, as shown in Table 5.²⁴ The Russian inflation tax on financial assets in 1992 is higher than any inflation tax on

^{24/} Note that we have shifted "1992" by one month to avoid the anomalous month of January 1992 when the monetary overhang was eliminated. The table explains the method for calculating the inflation tax. Note that as a first approximation, we have assumed in effect that the inflation rate is the relevant nominal opportunity cost of funds (continued...)

financial assets recorded in surveys of country experiences.²⁵ Note that the inflation tax is actually higher than the stock of ruble M2 to annual GDP at any point during 1992 (see figure 3 with real exchange rate and ruble M2/GDP). This is because the stock of M2 could be -- and was -- melted down by inflation more than once during the year. Because of the strength of transactions demand, holders of M2 chose to rebuild their real balances each time they were wiped out by inflation.

Nor was the government the sole recipient of the inflation tax, as shown in Table 5. Of the enormous inflation tax collected, the government only received about 4 percent of GDP after netting out the government's own deposits. This was only twice as large as what *other* governments in the former Soviet Union received from the Russian inflation tax.

A large part of the inflation tax was received back by enterprises in the form of highly negative real interest rates on subsidized credits, not to mention the negative real interest rates that were determined by the supposedly free financial "market". On balance, the enterprises had most of their inflation tax payments offset by inflation tax receipts, although there was probably massive redistribution between enterprises. The volumes involved are truly amazing. Enterprises lost an equivalent of 19 percent of GDP on deposits held in the banking system. They gained more than 16 percent of GDP in subsidized and low-interest banking credits. The inflation tax received by enterprises may be lower in reality because of the presence of up-front fees for loans that increase the effective loan interest rates. Unfortunately, we have no information on the size or prevalence of these fees beyond anecdotal reports that they are present.²⁶

There is a large residual of 8 percent of GDP unaccounted for in the distribution of inflation tax proceeds. Aside from statistical inconsistencies, this residual must reflect the profits of the monetary system (including the CBR) from receiving a positive spread between loan and deposit rates, as well as itself being a net borrower in rubles. Given the close links (including ownership links) between large enterprises and banks a pattern emerges where large enterprises and financial conglomerates are the main

²⁴/(...continued)

for both loans and deposits. A more careful analysis would use some benchmark real rates on deposits and on loans, and allow some spread between the two.

²⁵/ Easterly (1989), Giovannini and de Melo (1990), and Chamley and Honohan (1991). Easterly found a maximum inflation tax on financial assets of 29 percent in Argentina in 1983 in a sample of 12 middle income developing countries. The maximum observation in Giovannini and de Melo's calculation of financial repression tax revenue for 24 developing countries over 15 years was 18 percent of GDP in Costa Rica in 1981. Chamley and Honohan's maximum inflation tax on financial assets out of 5 African economies in the 1980s is 19 percent of GDP in Zambia in 1988.

²⁶/ Aslund (1993) reports that: "[I]n the spring of 1993, the going bribe from a commercial bank to people in or around the Central Bank for a three-month credit was 13 percent of the credit. By summer, this rate appears to have fallen to 5 percent, since the official refinance rate had risen above the rate of inflation." (p.16). Considering that in the summer of 1993 the *de facto* official rate in the inter-bank market had risen to 360 percent per year, a payment of a 5 percent upfront fee would have pushed the rate to 15 percent per month in a one year loan; still below inflation but considerably higher than the quoted rate of about 160 percent p.a.. Note that according to CBR instructions, quoted interest rates do not take account the effects of compounding. Thus, for monthly interest payments, the amount of interest due is equal to one-twelfth of the quoted annual rate.

gainer from the current state of affairs; they gain disproportionately more subsidies and credits and they lose less by benefiting indirectly from the profits of the financial institutions they partly control.

INCIDENCE OF THE INFLATION TAX

Inflationary credit creation to enterprises and government is often justified by the need to avoid the undesirable social consequences of layoffs of workers. It is doubtful that subsidizing loss-making enterprises is the most efficacious way of avoiding these social consequences. Since wages (even including bonuses, social payments and payments in kind) account for well under half of firm costs, it would be a lot cheaper for the government to grant social support to workers directly (Sachs (1993)).²⁷ Moreover, the inflation tax falls on the very households whose welfare is allegedly being protected by credit to enterprises.

Figure 4 shows the evolution of monthly household income since February 1992, and the calculation of the share of the inflation tax in income. The inflation tax fell very heavily on households in the early months of 1992 (even excluding the one-time jump of prices in January that eliminated the monetary overhang). Households adjusted by reducing sharply their deposits in Sberbank, as we will see, which enabled them to avoid the inflation tax that had fallen on deposits. However, the inflation tax on currency and on the remaining deposits still appropriated around a quarter of household income, depressing household expenditure even lower.

Although little data exists on this point, the inflation tax in Russia is likely to have been highly regressive one, as argued in general for high inflations by Dornbusch, Sturzenegger, and Wolf (1990). Movement into dollars or real assets usually involves a minimum scale of transaction that would exclude lower-income households. The average household in Russia at the current exchange rate makes less than two dollars a day, which means attempts to accumulate savings in dollars could be eaten up even by small fixed transactions costs (this point was made by Holger Wolf). Larger enterprises are likely to find it easier than smaller ones to convert assets into dollars.²⁸ It also is likely that regions of Russia with more foreign visitors and contacts will find it easier to obtain dollars than will more remote regions.

THE SHRINKING BASE OF THE "INFLATION TAX": THE EVOLUTION OF MONEY DEMAND

For the government to continue relying on the inflation tax without increasing the inflation rate, the "tax base" for that tax must remain stable. The base for the inflation tax is all of ruble M2: since

^{27/} A case in point is the coal industry which is in urgent need of restructuring. The share of wages in total costs of producing coal has fallen sharply since 1992. Data for selected mining associations show that material costs have increased much more rapidly than total costs—and subsidies (which are estimated at 2 percent of GDP in 1993 for the industry as a whole) could be sharply reduced if they were used to pay worker severance, training and placement instead of maintaining uneconomic mines in production. Of course, the political difficulties of making workers accept these proposals cannot be underestimated; see, for example, Aghion and Blanchard (1993).

^{28/} Legally, other than retained earnings from exports, foreign exchange can be purchased only with approved documents for imports. Many large enterprises have foreign subsidiaries or correspondents which can issue this documentation quite readily -- for real or imaginary imports.

interest rates on ruble deposits remain far below any plausible estimate of the expected rate of inflation, deposits as well as currency are being taxed by inflation, as we saw in Table 5.

Trends already indicate that this tax base is falling. Not surprisingly, enterprises are availing themselves of the opportunity to hold foreign currency deposits to protect themselves against inflation. Households are shedding deposits and reducing their ruble assets to a core of currency holdings necessary for transactions.

Domestic-currency-denominated financial holdings are still higher than in other comparable high-inflation, low-interest-rate economies, suggesting that ruble money demand has not yet reached bottom. Only the inefficiency of the payments system has kept ruble money demand as high it still is (and helped avoid hyperinflation so far). But banks, enterprises, and households are going to the school of high inflation and learning fast.

Figure 5 shows the progressive dollarization of the money supply. Foreign exchange deposits, virtually all held by enterprises, accounted for half of the money supply by June 1993. Currency holdings maintained their share, so that ruble deposits declined one for one with the increase in foreign currency deposits.

Figure 6 shows the evolution of household money demand. Sberbank deposits have virtually vanished as a component of household money demand, while currency has remained fairly stable as a ratio to household income. Households no longer hold ruble assets as a store of value, but they find it necessary (so far) to hold currency for transactions.²⁹ Although there is no data on what households are holding to replace ruble deposits as a store of value, the natural supposition would be that they are holding dollar currency and goods inventories (the latter would be recorded under consumption).

Table 6 compares the currency holdings in Russia to representative other countries at the end of 1992. The ratio of currency to GDP is like that of industrial countries and middle-income countries *with moderate or low inflation*. Brazil is the most relevant case for what awaits Russia if *high* inflation continues. After years of high inflation in Brazil and extensive indexation of liquid financial instruments, currency demand at the end of 1992 was less than 1 percent of GDP.

Table 7 shows a similar kind of comparison for Russia's ratio of M2/GDP. We identified episodes of severely negative real interest rates (less than -20 percent) on deposits, like those in Russia in 1992-93. We also show comparators with positive or only moderately negative real interest rates (above minus 5 percent), whose median M2/GDP is far above all of the countries with severely negative real interest rates.

The list of comparators with severely negative real interest rates illustrates three points. *First*, most of these countries had domestic-currency M2/GDP ratios below that of Russia during their episodes

^{29/} The monetary reform in July 1993 certainly did not help matters on the demand for ruble currency. While the demonetization of old rubles in the end did not produce large losses for households, it must have increased uncertainty about the future behavior of the monetary authorities.

of severely negative real interest rates. Of the two countries with M2/GDP ratios higher than Russia, Yugoslavia in 1982-84 is an obvious case of pre-reform monetary overhang, while Turkey appears to be a genuine outlier (perhaps reflecting low inflation prior to 1979-80). Of those countries with real interest rates nearly as negative as Russia's, Bolivia and Chile had M2/GDP as low as 5-6 percent of GDP. (Argentina in 1976 had a higher ratio of M2 to GDP but the ratio was probably elevated by domestic price controls.) *Demand for M2 still has some way to fall in Russia.*

Second, several countries with highly negative real interest rates, like Russia, permitted substantial foreign currency deposits in their domestic banking system. However, the combination of highly negative real interest rates with foreign currency deposits did not last long in any of these cases. Chile's real interest rates turned positive in 1975, Peru discontinued foreign currency deposits in 1985, and Poland stabilized in 1990. *Negative real interest rates together with foreign currency deposits are an unstable combination.*

Third, and most ominously for Russia, several of these countries shown here later went into extreme inflation (defining extreme inflation as 2000 percent or higher, which is more stringent than the 1000 percent suggested by Dornbusch, Sturznegger, and Wolf (1990)). Argentina in 1989, Bolivia in 1985, Peru in 1990, and Yugoslavia in 1989 all had inflation rates exceeding 2000 percent per year. Another recent extreme inflation, Nicaragua in 1989 and again in 1991 also followed several years of negative real interest rates and dollarization of the financial system (Taylor et al. (1989), Gibson (1993)), but did not have sufficient data to put in the table.³⁰ *Financial systems weakened by highly negative real interest rates are vulnerable to enter extreme inflation.*

SUSTAINABLE AND UNSUSTAINABLE DOMESTIC FINANCING: TWO SCENARIOS

Monetary financing of enterprises and the government cannot be continued at the current level without a dangerous increase in inflation. In this section, we generate some illustrative simulations to illustrate this conclusion.

Previous sections highlighted the softness of money demand: even if inflation remained unchanged at its present level, households and enterprises will continue to reduce their holdings of ruble assets as they learn to avoid the inflation tax. In Figure 7, we simulate a continuing decline in the ratio of ruble M2 to GDP. Specifically, we assume that the ratio declines by 5 percent each quarter, which would bring it down from its level of .14 in June 1993 to .08 in 12 quarters. We then assume for illustration that inflation continues unchanged at its current level; we also assume a zero rate of economic growth. Then the amount of monetary financing each quarter can be calculated as equal to the inflation tax rate (which is given by the inflation rate divided by one plus the inflation rate) times the initial ratio of M2 to

^{30/} There were also 4 African countries that had severely negative real interest rates: Ghana in 1976-81, Sierra Leone in 1983-87 and 1989-90, Zaire in 1976-79, and Zambia in 1987-88. They had ratios of M2/GDP ranging from 13 percent in Ghana to 28 percent in Zambia. Zaire later went into extreme inflation. We exclude from the analysis for two reasons: (1) their low level of income makes them less relevant for comparison with Russia; (2) extensive price controls and huge second economies (sometimes accounting for most of the economy) makes the measurement of M2/GDP problematic. The "excessive" amount of M2 relative to officially measured GDP is in fact sometimes used to measure the second economy in Africa (May (1983), Jones et al. (1988)).

quarterly GDP for each quarter. This monetary financing is what is available for financing the government deficit, for financing the enterprises, and for financing foreign reserve accumulation.

Under these assumptions, the total amount of monetary financing declines from 21 percent of GDP in the first quarter to 12 percent of GDP in three years, as shown in Figure 7. This decline in financing is the natural consequence of the decline in households' and enterprises' money demands as they evade more and more of the inflation tax. The decline in financing would require reductions in budget deficits and/or reductions in available financing to enterprises.

If adjustments are not made in budget deficits or enterprise financing requirements, then the other option is for monetary financing to be maintained at current levels. This will require higher and higher inflation rates to compensate for the fall in money demand. To use the tax metaphor again, to compensate for the fall in the *base* of the inflation tax, one must raise the inflation tax *rate* to achieve the same level of inflation tax *revenues*.

The rise in inflation itself would accelerate the fall in money demand. If we assume an elasticity of money demand with respect to inflation of 0.1, then there will be an *additional* fall in the money demand to GDP ratio of 0.1 times the increase in inflation. Taking into account this feedback, we generate the path for inflation shown in the second panel in Figure 7. Within two years the economy would go into hyperinflation by the Cagan definition (more than 50 percent per month). Attempting to maintain current levels of monetary financing in the face of declining money demand leads to a dangerous acceleration of inflation.

The other option is to stabilize the economy and end inflation. The third panel in figure 7 shows the cut in monetary financing that would have to accompany a stabilization of the price level within 5 quarters. The flow of monetary financing must go from 27 percent of GDP to 5 percent of GDP over that period. After stabilization, monetary financing can begin to increase with rising money demand, as the fall in inflation allows the economy to be re-monetized.

SECTION III: CONCLUSIONS FOR POLICY

Successful stabilization requires effective tools for monetary and fiscal policy. They are lacking in Russia today. Although the central bank now follows a policy of pairing its discount rate to the market driven rate at the interbank market, changes in the volume of directed credits have been *de facto* the main tool for implementing monetary policy. In practice, the discount window serves as a channel for the directed credit programs. It is clearly important for the CBR to discontinue these programs, transferring the fiscal responsibility of assistance and support to targeted areas directly to the budget. It would promote faster change in the commercial banking system, since lending under the directed credit programs encourage neither credit assessment nor the development of a competitive deposit base, let alone a stronger monetary authority. Moving to a straight discount window (preferably with credit auctions) would free the CBR to focus primarily on liquidity not on the particular financing demands of the real sectors. Without a reform of the credit and subsidy systems there is no fundamental change. The only choice left to the authorities would be to finance the budget or the banking system -- as the example of

the working capital loans used in 1992 well exemplifies. The program was initiated and administered by the MoF with CBR resources.

The link between nominally state-owned enterprises and the State is increasingly confused and arbitrary. It is aggravated by policy pressures to use the largest enterprises as buffers against continuing output declines, and to cast them as linchpins of the new post-communist industrial structure. Gross subsidies, as shown in Table 3, are huge and they are even larger if one were to take account of implicit subsidies such as that on domestic energy consumption. But there are many redundancies in the system. Some subsidies (and directed credit programs which have a large subsidy component) compensate enterprises (and/or sectors) for the subsidies they grant to others. There are explicit subsidies to consumption (e.g.: on public utilities, medicaments, etc); to protect specific sectors or regions (e.g.: agriculture and agroprocessing, the Northern Territories); and to benefit specific enterprises. Yet nearly all enterprises provide subsidies to their workforces and to their local administration. There are also important cross-subsidies within government programs and between regions; and there are many subsidies and implicit taxes imbedded in trade restrictions.

Resolving this opaque and complex system will take years. However, because directed credits may account for over half of public expenditure, and nearly all of the Central Bank's financing of the banking system in 1992, it is essential to downsize the volume and to begin to target the recipients of directed credit programs. The CBR should also discontinue its funding of the ruble zone. Only then would monetary policy be minimally independent to focus on inflation. This is clearly recognized. Measures to downsize the directed credit programs (including the MoF's own investment and conversion programs) were incorporated into the May 1993 agreement between the CBR and the MoF. The Credit Policy Commission was granted decision making capacity in all governmental credit programs. This approach should be tried again, reinforced by more specific measures aimed at the largest of the recipient enterprises and the outright elimination of interest rate subsidies. Similarly, the institutional arrangements to limit funding of other FSU states is in place and has been partially implemented. Again, the approach is to transfer international debt agreements to the fiscal authority liberating the central bank from the onus of funding structural deficits among the trading partners. Nevertheless, it is clear that for some considerable time fiscal and monetary policy will not be truly independent or entirely focused on the inflationary problem.

The policy problems are aggravated by profound institutional deficiencies and a lack of appropriate instruments for conducting fiscal policy. The budgetary process, which was never adequate for a fiscal system based on the separation between funding and expenditure decisions, has broken down. Partly this is a reflection of inflation itself which causes havoc with budgetary allocations. It leads to ineffective surrogates for fiscal adjustment such as the temporary sequestering of expenditures. More fundamentally, the budgetary chaos is caused by growing tensions within an ill-defined and uncertain fiscal-federalist regime. There are the well known problems of regionalism. But there are also lesser known, perhaps equally important, pressures to create and sustain separate fiscal fiefdoms at all levels of government. There is a multiplicity of extrabudgetary funds, many of which are not only outside the budget but literally outside the control of the fiscal authorities. Many of these fiscal problems can be alleviated if not solved by a determined effort at fiscal adjustment, although this is admittedly easier said than done:

All the extrabudgetary funds (with the exception of the main "social funds")³¹ could either be abolished or incorporated into the budget. This is proposed for 1994 and is a major step in the right direction. The public investment program could be reduced and reoriented to the provision of infrastructure and public goods. Investments financed by the budget or by the extrabudgetary funds could be screened and, when appropriate, eliminated.

Remaining price and trade restrictions on domestic and foreign trade (including limitations on profit and trade margins) and import subsidies could be abolished. All centralized exports and imports could be abolished and a new regime of taxation of oil and gas revenues could be put in place. Targeted subsidy programs can be designed to assist vulnerable groups and to ease adjustment in especially hard-hit sectors temporarily (e.g., coal).

The multitude of tax exemptions and tax expenditures could be eliminated with a view to reinforce the tax regime and broaden the tax base. The budget could integrate all external transactions fully including the use of counterpart funds from foreign borrowing and assistance. Similarly, all credit operations and on-lending from the Government could be included in the budget.

A complicating factor is that some desirable reforms pose even greater threats to macroeconomic stability. A clear case is reform in the payments system and in commercial banking. Clearly, the disorganized state of the payments system and the financial system cramps the transition to a smoothly functioning market economy.³² But at the same time, reforming the system will kick away some of the props holding up money demand and preventing hyperinflation.

However, this is not a case for forgoing financial reforms. Even if the government takes no actions that lower money demand, *it will fall anyway as the financial system and households and enterprises adjust to the present inflation.* We have seen how banks and enterprises are finding ways to reduce the float and excess reserves with the central bank. One important mechanism for evading inflation tax was the enterprise practice of paying a substantial part of wages as payments in kind (see flow of funds Table 3). This allows the household wage recipients to reduce their currency holdings at no cost to the enterprises. Enterprises are also widely reported to engage in barter transactions to avoid the inefficient payments system with its attendant inflation tax. ***Stabilization of inflation will thus be a race between the willingness/ability of the authorities to tighten monetary and fiscal policy and the adjustment of enterprises and households to the existing inflation.***

^{31/} Namely, the Pension Fund, the Fund for Social Insurance, the Employment and Social Protection Funds which in 1992 accounted for 64 percent of revenues and 67 percent of expenditures of all EBFs. In 1972, the estimated gross revenues of the federal extrabudgetary funds summed to R3.3 trillion (19 percent of GDP). Budgetary revenues (federal and local) summed to R5.3 trillion or about 30 percent of GDP.

^{32/} King and Levine (1993) and many others are eloquent about the crucial role of the financial system in allocating capital and fostering entrepreneurship in market economies. Bruno (1993) discusses the deplorable state of financial systems in the former socialist economies.

As Anders Aslund has observed there is another more complicated race unfolding in Russia. In his view (Aslund (1993), p 8),

The state of reform in Russia can be summarized as a race between privatization and market development, on the one hand, and the rise of criminality and the transformation of the old elite into a new privileged group, on the other, while the inflation rate is a measurement of how the struggle proceeds. The higher it is, the better the old rent-seeking elite is doing.

Reformers who emphasize the primacy of privatization see it as the main means of strengthening the competitiveness of Russian enterprises.³³ In this view, the state—especially the bureaucratic "apparat"—is incapable of articulating effective enterprise or industrial policies, in part because of incompetence, but mainly because of its susceptibility to interest groups pressure and to corruption. Systemic changes in ownership, such as are taking place in Russia today, place these erstwhile apparatchiks in an unparalleled position to appropriate not only enterprises as physical assets, but streams of rents to keep them running. The same apparatus had in the past endowed Russia with a technological and industrial structure whose capacity was not only vastly exaggerated, but highly distorted. Policy, therefore, should operate primarily through the privatization process to introduce new managerial and marketing skills and to engender smaller, more aggressive enterprises which would seek opportunities in the unexploited domestic market for consumer goods and services and in the international market for natural resource-intensive products. This will dictate the pace of other essential reforms in the financial and legal systems. The functions of the liberal State are few and, though difficult to implement, they do not lead to large financing requirements. Stabilization is essential both as a process (to cut off entrenched reactionary interests and liberate resources for the emerging privatized and private sectors) and as an end in itself to make markets work effectively in guiding price and investment decisions.

After the dissolution of Parliament, the remaining anti-reform group is made up most prominently by state enterprise managers. This group does not oppose privatization per se. It also supports stabilization. It seeks instead to guide privatization, so that its benefits accrue to those who are already in place to receive them. It only opposes privatization when it threatens to open up the game too broadly. Its advocates therefore gain from emphasizing the damage done to Russian enterprises by the disruption of former production and trade ties, and claims great potential for rebuilding intra-sector and intra-industry ties on a new and globally competitive basis. In the anti-reform view the state would encourage—perhaps directly supervise—the formation of large industrial-financial groups as the engines of future economic growth. Japan and Korea are often cited as exemplars of this approach. Such a development—already discernible in the policy debate and to some extent in the strategic role emerging for some industry associations—contains the danger of contaminating the privatization process by an admixture of state monopoly capitalism.³⁴ In the present circumstances of political irresolution and unreconstructed state institutions, it may also intensify the danger of insider dealing and corruption on a large scale.

^{33/} This and the following paragraph borrow heavily from notes prepared by Geoffrey Lamb.

^{34/} See Horne (1993).

In the anti-reform perspective, control of state financial sources is essential. Stabilization through decontrol, deregulation and the abolition of directed credit lines threatens the continued viability of the enterprises that have just been wrested from state ownership by the managers. Of course stabilization is desirable even to the anti-reform group, but only when it does not drastically devalue the assets that have just been handed over. The real debate, therefore, is about the instruments and the costs of postponing stabilization, including the threat of hyperinflation and heightened political instability. Even as the debate rages, however, the collapsing economy is steadily eroding the stakes being fought for.

APPENDIX 1: HOW CURRENCY UNDERVALUATION AND INFLATION AFFECT MEASURES OF FISCAL AND MONETARY FLOWS

The severe undervaluation of the ruble and the high rates of inflation of ruble prices complicate the measurement of the normal indicators of fiscal and monetary policies. The undervaluation of the ruble tends to exaggerate budget deficits as a percent of GDP, while high inflation tends to skew the measurement of budget deficits as a percent of GDP (and other flows) toward the latter part of the year.

Let us take first the exaggeration of the budget deficit/GDP ratio. GDP is evaluated largely at the low domestic prices, which reflect both the import subsidies and the severely undervalued exchange rate. The implied per capita GDP at the free market exchange rate would make the Russian standard of living comparable to that in low income Africa, which is clearly absurd. In the medium run, after macroeconomic stabilization, the real exchange rate would appreciate towards its purchasing-power-parity level. The external debt would thus be repaid at a more appreciated exchange rate (if the economy is not stabilized and the real exchange rate does not appreciate, then the debt would not be repaid in any case). Evaluating the flow of foreign financing at the current undervalued exchange rate thus exaggerates its weight in GDP. The weights of the import subsidies and the consolidated deficit in GDP are similarly exaggerated, by the amount to which the real exchange rate is more depreciated than its long-run PPP value.

The very high rates of inflation complicate the measurement of the flows of financing in other ways. We typically show flows of financing, income, and expenditure as ratios to GDP, adding up nominal ruble amounts during the year and dividing them by nominal GDP. This procedure gives a picture of what has occurred during the year which reflects heavily the last part of the year, when the nominal values of both the numerator and denominator are much larger than at the beginning. The correct procedure for getting a summary of the entire year is to deflate both the relevant flow and GDP each month or quarter by the CPI, then divide the sum of the real flows by the sum of real GDP. For example, total government expenditure shows the following pattern across quarters in 1992 as a percent of GDP from the fiscal accounts shown in Table 2: 18.9, 29.6, 43.5, and 50.1. Following the conventional procedure of dividing nominal expenditures by nominal GDP, we would get a ratio to GDP for the whole year that heavily reflects the expenditure increase at the end of the year: 40.8 percent. If we use the deflated method, we get 34.6 percent (note that this is close to a simple average of the quarterly expenditure/GDP ratios, although simple averaging is not algebraically correct). Using the conventional procedure for summing up the year's public expenditure/GDP ratio exaggerates that ratio by 6.2 percentage points of GDP.

In Table 3, which summarizes the flows of financing between different agents in the economy, we used the deflated quarterly method wherever possible. We have done so, for example, for both the balance of payments, monetary, and fiscal accounts, where there are large fluctuations in the quarterly ratios to GDP of the component flows. Unfortunately, we do not have quarterly data on the national accounts, so that national account measures of income and expenditure of households and enterprises are potentially subject to the distortion of reflecting more heavily the latter part of the year. There also is a possible inconsistency in the flows of financing table between those flows that are deflated quarterly and those that are deflated annually. A hopefully redeeming factor for rough consistency is that the national income flows are probably roughly stable across quarters. In any case, we prefer to have an

accurate picture of the financial, monetary, and balance of payments flows in 1992 even if it introduces some inconsistency into the table.

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Figure 1: Inflation and Money Growth, Russia 1992-93

Figure 2: Inflation and Wage Growth

Figure 3: Ruble M2/GDP and the real exchange rate

Figure 4: Real level of household income per capita by month (rubles in constant July 1993 prices)

Figure 5: Composition of Money Holdings, 1992-93

Figure 6: Ratios of household monetary holdings to household income

Figure 7: Inflation scenarios: simulations of inflation and money demand

Fixed inflation target at current level, adjustment in monetary financing

Flexible inflation, fixed monetary financing

Stabilization

Table 1: Monetary survey, flows as percent of GDP

	Quarter ending in:					
	Mar92	Jun92	Sep92	Dec92	Mar93	Jun93
Broad Money	21%	32%	71%	48%	23%	40%
Currency	4%	7%	12%	10%	7%	12%
Ruble deposits	12%	14%	43%	24%	16%	16%
FX deposits (Valuation adjusted)	6%	11%	16%	14%	0%	12%
Domestic Credit	22%	35%	53%	50%	29%	32%
To government	-4%	5%	8%	10%	-1%	2%
To rest of economy (valuation adjusted for FX credits)	24%	21%	43%	34%	26%	29%
Credits to other republics	2%	9%	2%	6%	3%	1%
Net foreign assets	11%	7%	4%	19%	4%	21%
Net international reserves (valuation adjusted)	-1%	-1%	2%	5%	3%	9%
Net banking system foreign exchange	12%	8%	2%	14%	0%	11%
Net other items (liability)	12%	10%	-13%	21%	9%	12%
Float	5%	-3%	-2%	16%	2%	#N/A
Other	6%	14%	-12%	5%	7%	#N/A
Memo: foreign exchange stocks in billion US dollars, end of quarter						
	<u>Dec 91</u>					
Foreign exchange deposits in US\$	2.03	3.19	5.92	9.98	12.47	12.56
Foreign exchange credits in US\$	1.61	2.30	2.31	1.92	1.93	2.18
Net banking system foreign exchange in US\$	1.93	4.32	6.28	6.78	9.27	9.37
Foreign exchange reserves of CBR (net international reserves) in US\$	2.47	2.26	2.06	2.54	3.52	4.26

Table 2: General Government Accounts, 1992-93 (Percent of GDP)

	1992				1993	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter (prel.)	Second Quarter (proj.)
Revenue	17.4	21.0	27.6	40.7	40.1	37.6
<i>VAT</i>	4.9	5.9	10.2	17.2	12.0	11.6
<i>Profit tax</i>	5.0	9.3	8.7	10.7	14.5	12.1
<i>Trade taxes</i>	1.0	0.8	2.3	2.8	4.5	6.1
<i>Other</i>	6.5	5.0	6.4	10.0	9.1	7.8
Expenditure, cash	18.9	29.6	43.5	50.1	47.9	44.2
<i>Wage bill</i>	4.1	4.9	6.2	7.2	9.5	11.1
<i>Producer and consumer subsidies</i>	2.9	4.2	8.1	11.4	8.0	5.9
<i>Foreign expenditure</i>	3.5	3.6	2.5	4.1	5.0	8.4
<i>Defense</i>	2.8	5.0	6.2	5.0	7.6	6.2
<i>Other</i>	5.6	11.9	20.5	22.4	17.8	12.6
Extrabudgetary funds' surplus and statistical discrepancy	2.3	1.4	2.5	3.4	5.0	3.2
Government balance, excluding import subsidies	0.8	(7.2)	(13.4)	(6.0)	(2.8)	(3.4)
Unbudgeted import subsidies	24.1	11.6	6.5	13.6	5.1	7.4
General government balance, cash	(23.3)	(18.8)	(19.9)	(19.6)	(7.9)	(10.8)
Financing	23.3	18.8	19.9	19.6	7.9	10.8
<i>Foreign</i>	24.3	12.1	6.8	13.7	5.4	9
<i>Domestic</i>	(1.0)	6.7	13.1	5.9	2.5	1.8
Domestic bank finance	(2.2)	5.8	12.3	4.4	2.5	5
Other domestic financing	1.2	0.9	0.8	1.5	0.0	(3.2)

Table 3: 1992 income, expenditure, and financing flows as percent of GDP

(- indicates expenditure, + indicates income)

GDP	Households	Enterprises	Government	External	FSU	Monetary
<i>Income side of GDP</i>						
Wages	-38%	38%				
Gross Profits	-40%	40%				
Indirect Taxes	-15%		15%			
Subsidies	21%		-21%			
Other income	-27%	27%				
Direct transfers from government (pensions, etc.)		3%	6%	-14%		
Direct taxes		-11%	-10%	21%		
Direct transfers from enterprises to Households		2%	-2%			
Transfers from abroad				2%	-2%	
Foreign interest payments				-2%	2%	
<i>Expenditure side of GDP</i>						
Net exports of goods and services	1%			1%	-2%	
Total investment	21%	-21%				
Total consumption	53%	-31%	-23%			
Changes in stocks	9%	-9%				
Other expenditure	16%	-16%				
Income less expenditure	0%	1%	15%	-20%	0%	0%
<i>Financing (- indicates asset accumulation, + indicates borrowing)</i>						
Total financing	0%	-1%	-15%	20%	0%	2%
Domestic Credit		1%	32%	5%		-37%
Ruble M2		-10%	-21%			31%
Float			-4%			4%
Foreign exchange deposits			-13%			13%
Net foreign credits				15%	-15%	
Net foreign assets					11%	5%
Other		3%	-9%	1%	3%	-3%

Notes: (1) Table shows each flow as expenditure (-) for one sector and income (+) for another. Financing flows as shown as lending (-) for one sector and borrowing (+) for another. Total financing equals each sector's deficit of expenditure over income.

(2) GDP in 1992 is estimated at 17 trillion rubles.

Table 4: Enterprise accounts 1992

Financial flows of enterprise with budget	Percent of GDP
Transfers to budget (Direct taxes)	10%
<i>Profit tax</i>	8%
<i>Domestic tax on oil and gas</i>	0%
<i>Export tax</i>	1%
Transfers from budget	15%
<i>Net lending to enterprises (working capital allocation)</i>	2%
<i>Investment (capital transfer)</i>	2%
<i>Producer subsidies</i>	5%
<i>Import subsidies received by enterprises</i>	6%
Net transfer to enterprises from budget	5%
Financial flows of monetary system with enterprises	
Enterprise assets (monetary system liabilities)	38%
<i>Currency</i>	0%
<i>Ruble deposits</i>	21%
<i>Foreign exchange deposits</i>	13%
<i>Float</i>	4%
Enterprise liabilities (monetary system assets)	31%
<i>Ruble credits to rest of economy less household credits</i>	28%
<i>Foreign exchange credits to enterprises</i>	4%
Net enterprise borrowing from monetary system	-7%
<i>Net ruble borrowing</i>	3%
<i>Net foreign exchange borrowing</i>	-10%
Enterprise flows with real economy	
Gross Profits	40%
<i>Profits</i>	33%
<i>Depreciation</i>	7%
Gross Investment	30%
<i>Investment</i>	21%
<i>Changes in stocks (rough estimate)</i>	9%
Total enterprise income less expenditure (see flow of funds table)	
Aggregate enterprise surplus (rough estimate)	15%

**Table 5: Inflation tax paid and received on ruble financial assets and liabilities,
February 1992-January 1993 (percent of GDP)**

	<u>Inflation tax paid</u>	<u>Inflation tax received</u>
Total	30.90%	30.90%
Households	12.04 %	
Enterprises (including float)	18.86 %	16.31 %
Other republics		2.19 %
Government (net)		4.07 %
<i>on loans (+)</i>		7.19 %
<i>on deposits (-)</i>		3.13 %
Residual (notional monetary system profits)		8.34 %

Notes: (1) inflation tax paid calculated each month as (monthly inflation rate - monthly interest rate)/(1 + monthly inflation rate) times (the stock of each financial balance at end of preceding month).

(2) Interest rate is that appropriate to each type of deposit (zero for currency, float, and demand deposits). Sum over entire period calculated by deflating each month's inflation tax by the CPI index, summing the real inflation taxes paid over period.

(3) Ratio to GDP calculated by dividing sum of real inflation taxes paid by sum of real monthly GDP's, using CPI index also to deflate monthly GDP

(4) Household inflation tax includes that paid on currency, individual demand deposits in Sberbank, time deposits in Sberbank, and commercial bank deposits

(5) Enterprise inflation tax includes ruble current accounts and commercial bank deposits, as well as float.

(6) Inflation tax received is the decline in real value of loans after accounting for interest payments. It is calculated each month with the same formula as in (1), substituting loan for deposit balances in (1), and the loan for the deposit rate.

(7) Inflation taxes received by enterprises include those on both subsidized and "unsubsidized" credits. The appropriate subsidized interest rates are used for each type of subsidized credit individually.

(8) data sources: currency and household, enterprise, and government deposits from CBR data; float and credit data from IMF staff calculations.

Table 6: Ratios of Currency to GDP, Russia and Comparators, 1992

	End-1992 Ratio of currency/GDP	Inflation within 1992
Russia (inflation measured January 1992 to January 1993)	4.26%	865%
<i>Middle income, high inflation</i>		
Brazil	0.91%	1156%
<i>Middle income, moderate to low inflation</i>		
Chile	3.29%	13%
Israel	2.48%	9%
Mexico	3.52%	12%
Philippines	5.39%	8%
Singapore	10.94%	2%
Venezuela	2.29%	32%
<i>Industrial countries</i>		
Austria	5.91%	4%
Denmark	2.90%	1%
Germany	7.13%	4%
Sweden	4.43%	2%
Switzerland	9.15%	3%

Source: Russia from World Bank and IMF staff estimates; others from International Financial Statistics, IMF.
GDP evaluated at end-year CPI.

Table 7: Comparison of Russia in 1992 with episodes of severely negative real interest rates

Country	Years	Average real interest rate during episode	Ratio of domestic- currency-denominated M2 to GDP in last year of episode	Ratio of foreign currency deposits to M2 in last year of episode	Episodes of subsequent extreme inflation (> 2000%)	
					Year of later extreme inflation, if any	Rate of extreme inflation
Russia (a)	1992	-78	17%	43%	?	?
Episodes with severely negative real interest rates (< -20 for two or more consecutive years)						
<i>Developing countries:</i>						
Argentina	1975-76	-69	13%	0%		
Argentina	1982-84	-32	9%	0%	1989	4923%
Bolivia	1982-84	-75	6%	0%	1985	8170%
Chile	1972-74	-61	5%	42%		
Peru	1978-79	-22	13%	23%		
Peru	1983-84	-28	9%	50%	1990	7650%
Turkey	1979-80	-35	19%	0%		
<i>Eastern Europe:</i>						
Poland	1988-89	-46	9%	63%		
Yugoslavia	1982-84	-23	31%	42%		
Yugoslavia	1986-88	-24	15%	58%	1989	2685%
Comparators with positive or only moderately negative real interest rates (above minus 5 percent over 1980-88)						
Median of 38 countries (b)	1980-88		47%			

(a) real interest rate for Russia calculated for second half of 1992; M2/GDP for Russia and all comparators calculated at end year prices.

(b) we have no information on foreign currency deposits in the comparators with positive or only moderately negative real interest rates

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