

Macroeconomics in Russia

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Abstract

Russia faces *macroeconomic* problems, an apparently calamitous fall in output and high and variable inflation, along with the *microeconomic* problems of reform and transition to a market economy. We survey the numbers, and conclude that the fall in output, though real, is much less than often supposed. We find reasons for the fall in output in disruptions to the credit and payment systems as they were partially liberalized, exacerbated by a shock to inter-republic trade. The fall in output from these sources is *not* a necessary part of the transition to market economy, it was avoidable, and steps can be taken to make sure it is not repeated. We stress the link between inflation and the present-value government budget. Declining tax revenues and increasing arrears make us suspicious that the current declines in inflation may not last. Finally, we discuss the conundrum of making policies like a hardening of budget constraints *believable*, so that firms will act on them.

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1 Introduction

Imagine for a moment that the Federal reserve imposed the following policies in the United States: Every company must pay for all its inputs before they are shipped, and taxes must also be prepaid. But there is no trade credit, and banks do not make working capital loans to purchase inputs. Checks take 90 days to clear, and companies cannot pay with cash to speed things up.

Chaos would result. The fall in output would dwarf the Great Depression. As symptoms, we would see desperate companies finding illicit ways to make and receive cash payments and circumvent regulations; we would see barter or “countertrade” deals; regulations aside, companies would have to tolerate massive unpaid bills.

This is roughly what happened in Russia during the summer of 1992. The story, elaborated below, points to the importance of *macroeconomic* policies, and the unintended macroeconomic effects of policy, in understanding developments in Russia and the Former Soviet Union. It also suggests that many macroeconomic problems are *not* inevitable consequences of the transition to a market economy, but rather that they are *avoidable* unintended effects of partial liberalizations.

The rest of this volume addresses the *microeconomics* of reform—how to replace a system of centralized control with markets. This transformation requires price liberalization, the introduction of property rights, privatization of state assets, revamping of the legal system, study of appropriate social welfare policies, etc. This focus may seem to suggest that macroeconomic stabilization is less important.

We focus on macroeconomics for two reasons. First, the microeconomic, institutional changes are unlikely to be implemented if the economy is in a state of macroeconomic

chaos—plummeting production, widespread unemployment and hyperinflation.

Second, and perhaps most important, there are constructive analyses and policy recommendations that one can make that do *not* just reiterate the advantages of completely free markets, and do not require microeconomic liberalization, private property, a new legal system, the end of corruption, and the usual litany of unlikely prerequisites. Macroeconomic stabilization *must* and *can* precede the more fundamental microeconomic, institutional transformation.

However, the conventional kind of macroeconomic analysis doesn't apply to the current Russian situation, and standard macroeconomic advice—tighten money, run a balanced budget, etc.—is just as obvious and unlikely to be heeded as the standard microeconomic advice to free all markets as quickly as possible. We emphasize three different and often ignored aspects of macroeconomic policy: the dynamics of inflation and present value government budget balance, the insidious reach of disturbances to the financial and payments system, and the difficulties of making *time-consistent* policy plans.

A macroeconomic observer looking at Russia notices high inflation and an apparent calamitous fall in output. High inflation is easily understood: it is a sign of a government budget that is out of control. Most observers seem to think that lowering inflation is a matter of will, of finding a sufficiently surly director of the central bank. Instead, we emphasize the link of inflation to present and future budget deficits. The surliest minister in the world will have to inflate when the government runs out of money.

The fall in output is more puzzling. Commentators often take for granted that liberalization will imply a period of falling output and living standards before the advantages of markets kick in, but there is little in *economics* to buttress this opinion. Aside from technical counterexamples, economics teaches us that the more freedom the better, so

that an economy that liberalizes should do *better* right away. Thus, we have to think about how much of the fall in output is real, and then figure out what caused the part that is real. Was it avoidable? What policies can the government take to keep output from falling further?

We start by looking critically at the numbers. We conclude that the actual fall is much less than is apparent. Yet output has fallen, and certainly has not *risen* as we would expect it to. We review some basic but often forgotten macroeconomics on the source of inflation and we review the fact that inflation per se is not a reason for falling output either. Thus, we search for economically intelligible *reasons* why output fell. We find those reasons in the havoc remaining in the still heavily controlled and underdeveloped financial system. These reasons are *avoidable*, they are not a necessary part of the transition from planning to free markets.

A financial system is critical in market economies, so that payments can be made effectively, the state of enterprises can be easily evaluated, and to give the right incentives for investment (or dis-investment) and output choices. Despite this central importance of the financial system for economic reform, development of the financial system has not received a high priority in reform plans. We present a brief review of the development of the financial system in Russia, as it has evolved since the breakup of the Soviet Union.

We tell a story of haphazard partial changes with massive unintended consequences. Starting from a roughly coherent and tightly controlled system, a few parts are liberalized in a first round of ‘reform’. But a half-liberalized system is often worse than either a fully-controlled or a fully liberalized system: the liberalization allows people to scheme the remaining controls, and the reform plan breaks down. A new set of policies is enacted, which break down in the same way. New plans are less and less credible, yet credibility

is exactly what a financial system requires to function.

To conclude, we offer some tentative prognostication of the future. Here we are much less optimistic than most commentators who extrapolate current trends. We also offer some comments on possible policy actions.

2 Recent macroeconomic history: A look at the numbers

One must take great care when interpreting Russian macroeconomic data. Numbers with the same names may have entirely different meanings than their western counterparts; and data collection methods are quite different. Moreover, Russia is experiencing an unprecedented amount of structural change, while as macroeconomists we are used to interpreting aggregate data under the assumption that any underlying structural change can be safely ignored. These are not trivial technical matters: they can lead to a fundamental misunderstanding of the situation.

2.1 Inflation

Inflation in Russia has been dramatic since price controls were lifted in January 1992. The price level shock—a 245% increase in the first month—was initially followed by declining inflation rates, confirming the predictions by many observers (including ourselves, Cochrane and Ickes 1992) that price liberalization need not kick off a bout of inflation. But inflation then increased. From the summer of 1992 until the winter of 1994 inflation hovered above 20% per month (see figure 1). Most recently, monthly inflation has fallen below 10% per month, but it remains to be seen whether this reduction can be sustained.

The initial price shock was so large because price controls were lifted following long

suppressed excess demand. During the late Gorbachev period, the Government increasingly resorted to money-financed deficit spending. In 1991 the fiscal deficit for the Soviet Union exceeded 19% of GNP¹, almost entirely financed by monetization. At the same time, prices in official markets were controlled. Inflation was not zero—even official, controlled prices, more than doubled during 1991—but money creation far outstripped the rise in prices. Hence, when price controls were lifted on January 2, 1992, the jump in the price level was the inevitable response. For this reason, the initial jump in prices is really the last gasp of Soviet inflation.

Prices were liberalized for most goods, although some staples, milk and bread, and some basic inputs, such as energy prices remained controlled. Subsequent to March 1992 most remaining price controls were lifted, save for energy, although some prices remained controlled by the decision of anti-monopoly committees².

[Insert Figure 1]

After the initial price shock, prices continued to rise, but the inflation rate began to decelerate. The proximate causes of inflation are, of course, increases in the stock of money and central bank credits³, and monetary policy was rather tight in early 1992. Figure 2 plots money and credit growth along with inflation.

[Insert Figure 2]

Figures 1 and 2 suggest three phases. The first period, from the initial price shock to the end of June 1992, was the period of (relatively) tight money. As can be seen in figure 2, both inflation and money growth were declining in this period⁴.

¹IMF (1992) p.67.

²See Koen and Phillips, 1992, for a discussion of what happened to prices after liberalization.

³The central bank of Russia provides direct credit to industries, often via commercial banks. Increases in these credits are one of the most important sources of increasing money stock in Russia. We discuss this mechanism in detail below.

⁴The relationship between inflation and lagged money growth in Russia has been noted by Fischer

[Figure 3]

However, one important consequence of tight credit in this period was an explosion of inter-enterprise debt⁵ from R39 billion in January 1992 to R3.2 trillion six months later. The mechanisms of this explosion are complex, and we deal with them below. Suffice it to say here that enterprises found themselves unable to cover their expenditures; unable to get official government credits, they simply let unpaid bills pile up. As a result of the explosion in arrears, the attempt to maintain a tight credit policy was overturned, and Viktor Gerashchenko, the last head of Gosbank, was brought back to lead the Central Bank of Russia.

The second phase, from July 1992 through December of 1993, is a period of relatively high money growth and high inflation. Although fluctuations are apparent, it is evident from figure that inflation during this period was typically above 20% per month. During this period, credit was rather loose, although it is apparent from figure 3 that credit growth slowed during 1993. The interenterprise debts that had accumulated in the first period were basically monetized (paid with newly printed money/new credit) in this period. Moreover, relatively easy money financed continuing losses of many enterprises and postponed a recurrence of inter-enterprise arrears.

In the current, third, phase, inflation has fallen significantly. Monthly inflation has fallen below single digits in 1994. The recent figures for June 1994 have inflation below 6% per month. The primary reason why inflation has fallen is a dramatic reduction in credit growth, as is evident in figure 3.

However, inter-enterprise arrears have returned. The total volume of arrears⁶ on (1993), Easterly and Vieira da Cunha (1994), and Sachs (1994).

⁵The causes and consequences of the arrears crisis are discussed at length in Ickes and Ryterman 1992, 1993, and below.

⁶One of the policy changes that took place in July 1992 was the elimination of file number 2, *Kartoteka*

March 1, 1994 was estimated at R30.9 trillion. Russia's March GNP was R36.9 trillion, so the arrears are about 10% of annual GNP. Arrears were R3.8 trillion at the height of the arrears crisis in 1992, estimated variously at 20-40% of GNP (See Ickes and Ryterman 1992, 1993), or R62 trillion in today's Rubles. Thus, the March 1994 arrears were at least 1/4-1/2 their level at the height of the crisis. Ominously, arrears now include wage and tax arrears, and are more concentrated in lossmaking industries.

Until very recently, interest rates were hundreds of percentage points less than inflation rates. The discount rate of the Central Bank, for example, averaged around 175% per annum during 1993, while monthly inflation was over 20% (800% per year). This means that obtaining credit was tantamount to obtaining a gift; naturally connections rather than the price allocated such "credit." As a result, the level of interest rates was a poor indicator of the stringency of monetary policy. Interest rates in 1994 have fallen slightly in nominal terms, but due to the fall in inflation they are positive in real terms for the first time. The implied monthly rates are now in the 15% range, substantially above monthly inflation that is less than 10%. This may not reflect conscious policy as much as slow adjustment of nominal rates to the decline in inflation. However, inflation is so volatile, that the actual real return on a three month loan is quite uncertain.

2.2 Output

[Figure 4]

Statistics on the fall in output are literally so large as to be unbelievable. Figure 4 presents GDP, industrial output and gross fixed investment since 1991. During 1992, Russian GDP fell 19% in 1992, and another 12% during 1993. The first quarter of 1994

Dva, the central record of arrears. Hence, the magnitude of arrears is now just an estimate. Of course, even before 1992 the R3.2 trillion was a lower bound, because some enterprises made deals (technically illegal) with suppliers to bypass the official payments system altogether.

was down again 15% over the first quarter of 1993, or down at a 20% annual against the last quarter of 1993. Even the government forecasts 1994 GDP will be 16-18% below the 1993 level. The cumulative fall in GDP since 1990 is over 40%. Compared to the 2-3% cumulative falls in GDP in even severe US recessions, these figures would seem to indicate a total collapse⁷.

Industrial production has fallen as much or more than GDP. Industrial output fell 16.2% in 1993, it dropped nearly 26% in the first half of 1994, and as we write, the Government forecasts 1994 industrial production to be 25% below even the 1993 level. Investment has fallen even more steeply, to 30-40% of its 1990 level.

The differences between industrial output, GDP and investment reflect a deeper sense in which output declines are not spread evenly. For example, the first quarter 1994/first quarter 1993 output decline was 30-40% or more in chemicals, engineering, construction and machine-building; but less than 10% in fuels, electricity, metallurgy. Production of some consumer durables have even increased—TV's are up 8%, and refrigerators up 9%.

These facts suggest that the actual situation is not as catastrophic as the GDP or industrial production numbers suggest. The Soviet economy had a vastly overblown industrial sector, dominated by the military-industrial complex, and far too *much*, largely unproductive, investment, reported as high as 40% of GDP. At a more micro level, as Cliff Gaddy points out, "...the real problem of the Soviet economy was not that it produced too little, too inefficiently, or with too much waste. The problem was that it produced *the wrong things*." (Gaddy 1993: 1). To a large extent, the rapid decline in industrial output and investment, especially construction, in old state industries represents a *positive* development.

⁷Sources for the data in this section are primarily the RFE/RL Daily report July 13, 1994, Economist intelligence unit first and second quarter 1994, PlanEcon report, April 28, 1994 and Interfax July 5, 1994.

Furthermore, the statistical system in Russia was designed to collect data from state-owned enterprises. The system is far less able to monitor developments in the new private sector. New firms tend to be concentrated in retail trade and services, where it is inherently more difficult to monitor than, say, machine tools. Furthermore, where there was once a strong incentive to report, even over-report, output, both state-owned and privatized firms now have a strong incentive to under-report output, to evade taxes. Under reporting is an inevitable consequence of a statistical system that is not sharply cordoned off from the tax authorities and very high tax rates. Thus, reports on the fall in industrial output largely reflect the healthy decline in parts of the former state-owned sector. They under report output in any profit-making enterprise and ignore the rapid development of private businesses.

Finally, the statistical system is geared to the measurement of *raw output*, not *value added*. The plan specified output, and it is very hard to measure value added in a command economy without prices. While the statistical system is now geared to measure value added, many Russians still think in terms of industrial production. It is still difficult for many Russians, and many policymakers, to think of services as productive of value.

Value added calculations are even harder in a high inflation environment. If costs are incurred two months before output is sold, and inflation is 20% per month, then even a break-even proposition will show a 40% profit. Indeed, a recent World Bank survey of Russian enterprises found that all enterprises surveyed were profitable for this reason, even though many were actually on the verge of bankruptcy! On the other hand, given delays in payments, delays in paying wages, long floats in clearing checks, etc. it is not always clear which direction the bias goes. Certainly, the interaction of accounting and inflation is responsible for the fact that measured real GDP always seems to change the most, and change the most relative to industrial production, when there are big changes

in inflation. (See Figure 4.)

Industrial production measures are based on raw output, as always. In the US, we are used to the idea that industrial production moves closely with GNP, but this is much less true in Russia. *Raw output* figures are a misleading guide to *value added*, or GNP. If a steel plant loses 100,000 Rubles on every ton of steel it sells, every ton decline in its industrial production is a 100,000 Ruble *increase* in value added, or national income. Declines in industrial output can be a good thing.

Employment data also indicate a shift in employment away from the state sector and towards the private sector. Much of this is due to privatization of state enterprises rather than actual job changing. Of total employment of 71 million, employment in the state sector fell 6.5 million to 41.5 million in 1993. The share of employment in the state sector fell from 67% in 1992 to 59% in 1993.

It is surprising how big the state sector still *is*. The privatization program is often regarded as a great success, and observers cite the huge number of enterprises that have been privatized. But the state sector still accounts for half of all employment.

Furthermore, “privatized” is another of those words that conjure up misleading images to western observers. A “privatized” state firm most often has the same management and workers; typically they are now the nominal owners; it still receives subsidies, and may receive state orders for output; it still uses the dual-monetary system as outlined below, and expects to be insulated from bankruptcy. Many of these firms have not changed what they produce, their sources of supply or their customers. Thus, many “privatized” firms *behave* as if nothing has changed.

In summary, much of the apparently disastrous decline in output and industrial production reflects mismeasurement, a healthy decline of the state sector, and leaves out

important increases in output in the new private and privatized sector.

2.3 Consumption and living standards

A 50% decline in industrial production in the US would imply a roughly 50% decline in personal income and hence a catastrophic decline in living standards. A direct look at living standards might confirm our hunch that the declines in reported Russian output are overstated.

[Figure 5]

Figure 5 presents estimates of real wages and living standards in Russia. The huge measured decline in living standards during the price liberalization of January 1, 1992 stands out. This measurement, or the equivalent observation that nominal wages rose much less than prices, forms the conventional view that living standards have fallen by 50% or more.

Of course, nothing of the sort happened. The overall standard of living in Russia—the level of goods produced and consumed—did not drop from an index of 160 to an index of 40 overnight! Rather, low prices and unavailable goods were replaced by higher prices and much more available goods. The true cost of obtaining goods—waiting in line, etc.—is not included in the pre-1992 statistics.

Similarly, Soviet, officially measured, industrial real wages increased by 79% from 1985 to December 1991.(Lipton and Sachs 1992: 220). Increasingly autonomous enterprises raised wages, while official prices remained fixed or rose slowly, shortages intensified and queues lengthened. Prices were much higher in unmeasured parallel markets. The total supply of consumer goods did not increase, so this was no more a period of rising living standards than January of 1992 was a dramatic fall.

Moreover, excessive focus on what has happened to these measures of living standards ignores the dramatic increase in choice that price liberalization has brought. With a broader range of choice, consumers can achieve much higher levels of welfare at the same level of expenditure, and without the constant waste of time spent waiting in line.

Ignoring the price-induced blips, the trend, or absence thereof, in Figure 5 is informative. Despite the apparently calamitous decline in industrial production, these measures of living standard appear not to have changed much at all since January 1992. In fact, the most recent figures show that consumption increased in 1993, real wages rose 11% in the first five months of 1994, and the population's savings doubled.

The same picture emerges in retail sales numbers. For example, despite roughly 20% declines in output measures, retail sales in constant prices for Jan-May 1994 are down only 2.4% from the same period a year ago. Similarly, household income at constant prices and private consumption, are both up in 1994 over 1993.

Unemployment, at the end of 1993, was 1.1% officially, up from 0.8% at the end of 1992. This rate rose to 1.3% by March of 1994. Alternative measures that use survey evidence, give a higher unemployment rate, 5.1% up from 4.9% a year earlier. Still, these are tiny rates for an economy that has supposedly suffered a 50% or more output drop. Other chapters in this volume discuss the employment situation in more detail—i.e. whether the “employed” are really working, and how much private sector employment there is.

We don't want to imply that everything is rosy. It seems that the overall standard of living is staying even at best, where it should be increasing quickly. The *distribution* of wealth is a big problem in Russia. Pensioners' savings were wiped out, and pensions have not been fully indexed. The army and workers in out of the way, one- (dying) industry

cities are in real trouble, while others are prospering tremendously. These are serious problems, but not to be confused with the *macroeconomic* problem of a precipitously falling *overall* living standard.

2.4 Trade

Russia has lately been running trade *surpluses*. \$17.5 billion in 1993, and a forecast of \$16 billion forecast for 1994. Most analysts like trade surpluses, but it reflects very bad news in Russia's case. Russia ought to be the focus of massive investment—investment in the *right places*, of course, not dying state industries. But investment from abroad is a capital account surplus, which corresponds to a trade *deficit*. Russia should be borrowing or selling equity and other assets abroad and *importing* vast amounts of capital goods. That it is running trade *surpluses* is an indication of capital flight and the woeful lack of investment by Russians as well as foreigners. With this investment occurring, Russia should even be running trade deficits of consumer goods—borrowing from abroad against the higher future income that successful reform will bring⁸. On the other hand, the trade surplus may be much lower than reported. Importers have a large incentive to avoid full reporting, to evade taxes.

Breakdowns inter-republican trade played a critical role in the actual fall in output since 1992. The demise of the Soviet Union did not change the high degree of economic interdependence within the region. The Soviet Union placed greater emphasis on industry rather than region in planning, it concentrated industries in search of ephemeral economies of scale, and it may even have encouraged economic interdependence for political reasons. The typical state firm received inputs from many different republics, and has

⁸The trade surplus also reflects concern over external debt. Russia inherited the Soviet Union's external debt (\$65 billion at the end of 1991), and has pledged to meet its obligations. Debt-service obligations concentrate attention on the balance of trade.

traditional customers throughout the former USSR. Since the summer of 1992 many of these links have been broken, and enterprise directors have scrambled for new customers and suppliers.

The disruption of inter-republic trade accounts for a large, and we think avoidable, part of the real decline in output. The reasons for the breakdown require a careful analysis of the monetary and payments system, which we undertake below.

2.5 Government finances

The success of the stabilization program in Russia ultimately depends on what happens to the fiscal deficit. The deterioration of the fiscal regime in the Gorbachev period was one of the most important causes of that system's demise. Revenues collapsed as the authority of the center declined. The fiscal deficit of the Soviet Union was some 20% of GNP in 1991. It is not surprising then that cutting the budget deficit was a top priority of the first Gaidar government.

The extent to which the Russian government succeeded in reducing the budget deficit in 1992 is a matter of dispute, since budget accounting in Russia is even more obscure than in Western countries. Import subsidies are a particularly controversial item. The IMF estimates them to have been 13.8% of GDP in 1992. Including this item takes the budget deficit from 7.8% to 21.8% of GDP on a cash basis, and even more on a commitment basis because the government restrained spending below appropriated levels. A recent survey by the Russian Ministry of Finance (1994) gives much higher numbers for the consolidated budget deficit when measured on an internationally comparable basis. According to this source, the budget deficit was 35.9% of GDP in 1992, about one-half of which was financed by foreign credits⁹. But Sachs (1994) argues that inclusion of foreign

⁹See Hanson 1994 for a discussion of this article.

financed import subsidies presents an inaccurate picture of the budget situation, since that component of the deficit required no monetization. On the other hand, the IMF includes them in their estimates of the Russian budget deficit, since these credits are claims on future revenue: Forward looking agents presumably can calculate that these credits will have to be paid off in the future¹⁰, and consequently their current inflation expectations are affected.

In addition, many funds are off-budget—pension, social insurance, employment, and research and development, among others—and are in the hands of government agencies (Delyagin and Freinkman 1993). Although large, these funds seem to be roughly in balance with off- budget expenditures, so their inclusion does not change the overall balance by much (Hanson 1994: 18).

It *is* clear that the Russian government succeeded in cutting expenditures, much of this in the defense complex. All measures show that expenditures declined as a share of GDP in 1993, an impressive achievement when we recall that GDP fell by some 12% over 1992. Another indicator is the slowdown in Central Bank credits in 1993 (see Figure 3), about a third of which are provided to the Finance ministry (industry via commercial banks and other republics each get about a third as well). In March 1994, of the Russian government and the IMF agreed on a stand-by agreement, based on the pledge of the former to keep the deficit to 8.6% of GDP in 1994. The pledge is certain to be broken, but this is a much lower level than previously.

But revenues have also fallen since 1992, and this trend is increasing in 1994. A recent report by the Ministry of Finance, for example, noted that revenues in the first quarter of 1994 were 65% of anticipated levels, upon which the budget was formed. This might not be a problem if it were due to a decline in tax rates, leaving room to raise revenue

¹⁰Sachs (1994: 26) notes that repayments will be close to \$4 billion in 1994.

by raising tax rates, but precisely the opposite is true.

Russian enterprises are subject to a 28% value added tax, a profits tax with an average effective rate of 34% ,and a wage tax, among many others. These taxes leave little revenue for restructuring, and are a healthy encouragement to tax evasion. The decline in government revenues is primarily the result of the fall in output and a decline in the quality of tax collection, despite some of the highest tax rates in the world.

Tax rates, and the rules under which they are applied have changed frequently. In July of 1992, for example, the rules for the VAT were changed, dropping the invoice system, so that enterprises could no longer buy inputs for inventories now and claim credits against future tax payments. This change made the VAT more like a sales tax than a value added tax, so it applies to loss-making enterprises as much as to profit-making ones. Moreover, this change was retroactive to the beginning of the year. The arbitrary variation in tax structure is important for some of the economic stories we tell below. In particular, it is certainly understandable if enterprise managers are reluctant to invest based on even today's heavy tax rules, figuring that the government will change the rules ex-post again and wipe out any profit.

With inter-enterprise debt and tax arrears mounting, little room to increase tax revenue, and a continuing implicit commitment to provide credits for enterprises in distress, one questions whether the government will be able to continue to reduce the deficit.

2.6 Summary

Inflation is of course real and substantial. Its uneven pace and uneven nature across goods induces a huge and spurious variation in relative prices, it distorts the tax system and any accounting, and it increases payment system and credit disruptions.

Despite the enormous decline in industrial output, measures of personal income seem flat. Thus, it seems that we are primarily seeing the healthy disappearance of the state industrial sector. However, payments and credit problems, the difficulty of trade across republics of the FSU and incredibly high tax rates are keeping even well-measured output much lower than it could be.

The government's finances are the most ominous warning for the future. There is a growing stock of interenterprise debt that enterprises expect to be bailed out of; tax revenues are falling, and the government is already behind on many payments.

3 Macroeconomic frameworks

It is universally assumed that tighter money and credit policies required to reduce inflation will cause output drops. For a recent example, the Economist Intelligence unit (1994) says that “the decline in industrial production *resulting from the clampdown on money growth* have proven more alarming..” (our emphasis) and “the alarming figures on falling output – the price paid for declining inflation–...” Clearly, whether there *is* a tradeoff between output and inflation, what that tradeoff is, and by what mechanism it operates is one of the most pressing macroeconomic questions for the Russian economy.

3.1 Monetary and fiscal policy

Much macroeconomic policy discussion in western economies focuses on monetary and fiscal policies that governments undertake to affect business-cycle changes in output, employment, inflation, and exchange rates. It is less commonly realized that most of this framework is irrelevant to the situation in Russia. The *mechanisms* by which monetary and fiscal contractions are thought to cause output declines in western economies do not

operate in Russia's situation.

3.1.1 Fiscal policy

Fiscal policy—deficit spending—was once thought to have a direct stimulative power, but few economists think much of this channel anymore. It is clear that if the government raises taxes and spends the money, there will be no expansionary effect: taking money from us and then giving it back can't help. The idea behind fiscal policy was that if the government *borrow*s money from us and then spends it, we will be fooled into thinking we are richer, ignoring the fact that the government will have to raise taxes later on to pay the money back.

Now, economists concentrate on the *distortions* induced by taxes—the fact that people avoid activities like working and saving when the government taxes those activities too much. Borrowing and deficit spending serves a useful purpose in this framework. Borrowing can finance temporarily high government expenditures (like a war), or it can finance expenditures through a temporary change in the tax system. By borrowing temporarily, tax rates can be kept low and steady. If the government could not borrow, it would have to temporarily raise tax rates to exorbitant levels, which would hurt the economy as people avoided the taxed activities. In the Russian context, we have a great deal to say about the distortions of the tax system.

3.1.2 Monetary policy

Contemporary analysis of monetary policy focuses on the possibility that money creation can also fool people into producing more than they would otherwise. Some economists think prices are “sticky” so that more money leads to more output, rather than just higher prices for the same output. Other economists think that *surprise* increases in

money and all prices can fool companies into thinking the *relative* prices of their goods have risen, and hence into producing more.

There are big arguments over which of the two stories is correct. But one thing is clear: Monetary policy cannot possibly affect output through either channel in Russia today. No economy with inflation at 10-20% per month and equally variable has any sticky prices left, nor is anyone likely to be fooled by a spurt of inflation into thinking that the *relative* prices for what he has to sell has risen. Empirical research has long documented that real effects of monetary policies disappear in high inflation economies (For example, Lucas 1972.)

In summary, whether these business cycle effects of monetary and fiscal policy exist, and if so, whether governments can successfully employ them to stabilize fluctuations is a fascinating and ongoing controversy. But it is largely irrelevant to the situation in Russia. The declines in Russian output are hardly attributable to a lack of monetary or fiscal stimulus! Conversely, a sudden monetary or fiscal *tightening* cannot produce a further decline in output *through these usual channels*.

Perverse macroeconomic policies *can* lead to further economic calamities through different channels. Understanding these channels is important to designing or recommending policies to reduce inflation and deficits without further damaging the economy.

First, many industries hang on only by receiving government credits; a reduction in credits must certainly lead to lower output from those companies. However, these credits represent real resources, transferred to money-losing enterprises from elsewhere. Though output in the affected industries will certainly decline, overall, properly measured output and income will rise. It's a fair bet that any other use of the resources transferred to

dying state industries will be more productive.

However, firms that would make profits in a free market face severe capital market constraints and heavy taxation in Russia. They face great difficulty in borrowing to finance working capital and more to finance investment. As a result, they operate more in a *cash-flow* constraint, in which each period's expenditures have to be financed by that period's revenues than a conventional *present value constraint*. (We discuss this financial system and the constraints in detail below.) A credit crunch can drag these firms down along with the losers. *This* is the mechanism to be concerned about in Russia.

This is *not* a problems to be understood as traditional monetary and fiscal policy innovations. Just studying the path of money and credit aggregates or deficit figures will not tell us whether or when Russia's macroeconomic troubles are likely to happen. In addition, it means that credit can be tightened in Russia without macroeconomic consequences, *if* the rudimentary financial system is fixed first.

3.2 High inflation is always and everywhere a *fiscal* problem.

The most obvious symptom of macroeconomic problems in Russia is high or hyper-inflation. Hence, a few basic facts about high inflation are in order.

Governments print excessive amounts of money when they are spending more than they can borrow or receive in direct taxes. In a sense, the budget is always balanced: the *inflation tax* replaces other sources of taxation. Suppose the government doubles the money stock, and people are only willing to hold the same real amount of money (say, two month's income). Prices double, so the private sector's money balances are worth half of what they were. The government can purchase one month's income with the newly printed money. In this way, the government has transferred real resources –

one month's income – from the private sector to itself. It is exactly as if it had assessed a tax on holding money. As we saw above, the government of Russia is raising substantial portions of its revenues from this inflation tax.

Again, inflation in Russia is completely different from that in typical industrialized western economies. Seignorage revenue—government revenue from printing money or expanding cash-equivalent credit—is trivial in most western economies. In addition, most credit expansion is *inside* credit, between private parties, not expansion of the monetary base or other government credit. Only a small fraction of the expansion of the money stock represents government revenue. Finally, most western governments *can* raise more revenue from taxation. Hence, governments typically *can* lower inflation by willfully lowering the rate of money growth, and very slightly increasing taxes or borrowing to make up the small loss of seignorage revenue. The source of persistent inflation in western economies is typically the fear on the part of governments that lowering inflation might lead to a recession, through one of the monetary channels described above.

In this context, we are used to treating inflation by moral suasion: persuading governments or central banks that they should risk recessions in order to lower inflation. Much policy advice directed at Russia and the FSU is of this nature. But the situation is different. Money growth cannot be simply lowered by decision of the central bank or other authorities, The constraint is not fear of a recession, but the lost seignorage revenue.

High inflation only ends when the government either finds other sources of (current or future) revenue, or lowers expenditures. Without resolving the *fiscal* problem, advocating monetary restraint is pointless. At best, the government can reduce money growth temporarily, financing a part of expenditures by borrowing at home or abroad, by delaying

payments (many state workers have not been paid in months) or some expenditures, by getting advance and usually discounted payment of taxes or other revenue, or selling assets sooner. But unless the underlying level of tax collections and expenditures changes, these expedients merely postpone inflation. Eventually, the borrowed money has to be paid back, the delayed payments must be made, etc. Then, the government has to print even more money leading to even higher inflation. In fact people may understand that the temporary slowdown in money growth must be reversed. Anticipating higher future inflation, they try harder to lower money holdings now, and so inflation can perversely increase right away! (Sargent 198x presents careful analysis of this situation.)

The bottom line: moral suasion to reduce money or credit creation is pointless. Save the moral suasion for stabilizing the *fiscal* situation and lower money creation must follow.

3.3 Inflation *per se* isn't so bad.

Many discussions of events in Russia and the FSU presume that inflation is one of the most serious economic problem, and hence needs urgently to be corrected. But inflation *per se* is not that bad. Most importantly, the vast majority of *cures* for inflation are worse than the disease.

What's bad about inflation? First, people spend too much time taking trips to the bank or money changer. Since cash depreciates fast, people want to hold as little of it as possible. Instead of (say) receiving pay in cash at the beginning of the month and spending it slowly over the month, they will try to convert their cash wages to foreign currency, bank accounts, durables, or anything else that does not depreciate, and then convert it back to cash as the need arises. Firms will waste time and energy on cash-

management activities, avoiding check float, trying to delay payments, etc. rather than on productive activities. Both people and firms waste time looking for ways to arrange transactions without money, by using foreign currency, barter, etc.

There is a second effect, on which economists have speculated, but have less quantitative evidence. Inflation is seldom steady, but varies from month to month. In this environment, it may be harder for consumers and producers to distinguish *relative* price changes (good or bad deals) from changes in the price *level* (inflation). The economy is obviously less efficient in this circumstance.

These effects –the ‘welfare costs of inflation’ in the economics literature—are real, but they are not that big—a few percentage points of GNP at most. This is an interesting cost to examine in western economies, but does not account for output declines of Russian magnitude.

Furthermore, people in inflationary economies devise all sorts of methods to avoid holding money, and to send good price signals. Prices can be quoted in dollars, or one can even pay in dollars. (Some Latin American economies “dollarized” in this way during periods of high inflation.) If that is impractical or illegal, prices can be quoted in dollars and then paid in Rubles at that day’s exchange rate. People can hold dollars, only converting to Rubles at the last moment. Many stores in Russia now have internal currency exchanges for just this purpose! Brazilians adapted to inflation by the widespread use of checks that clear in one day (something you can’t do in the US!). As people make these adaptations to inflation, its costs decline still further.

In the end, inflation *per se* in an economy with no constraints on foreign currency holdings and transactions can only take away the certainly minor advantages of using a national currency rather than a foreign currency.

Inflation is not a reason why economies stop dead in their tracks. In a hyperinflation, workers take home their wages in a wheelbarrow full of money at end of day; they rush out to shop, bank, or exchange the money so they don't have to hold it overnight. They might be late for dinner, but they *did* spend the day at work, and they *do* eat dinner when they get home. The German hyperinflation at the end of the first world war, inflation in Israel in the 70's and 80's and some of the Latin American inflations conform to this picture.

3.4 The problem: anti-inflation measures and financial regulation.

It is the wide range of government policies taken to *combat* inflation, without addressing the underlying deficit, that cause trouble. Further, inflation can wreak havoc with taxes, the payment system and financial regulations, especially in economies where the financial system is underdeveloped. We conclude that one can substantially improve the Russian economy *without* necessarily stopping inflation. It suffices to allow the financial system to adapt to inflation.

While inflation per se isn't that bad for the *economy*, it is very bad for the government's finances. If prices did not rise when the government spent newly printed money, it could raise any amount of real resources by money creation. Even if prices rose, but people held the same real quantity of money—be it a month's worth of income, a half year's worth or whatever—the government could still raise any amount of real resources by raising the rate of money growth and inflation. But as inflation rises, people hold less real money. As anything is taxed more, people use less of it, and money is no exception. Then, a given percentage increase in the money stock results in an even larger percentage increase in inflation. Eventually, a point is reached at which the government raises

less real resources if it increases the money growth rate. This is the point of explosive hyperinflation.

Governments naturally respond by trying to force people to hold more money. Examples of such policies are limitations on foreign exchange transactions, capital controls, bans on the use of foreign currency for transactions, legal requirements that prices must be quoted in domestic currency, limited or suspended convertibility (if the money was ever convertible in the first place), limitations on the ability to transfer bank accounts to cash, interest rate limitations on bank accounts (so people will be more willing to hold money instead of accounts), and limitations on cash-efficient check, wire, or credit card transactions. Strapped governments also frequently resort to price controls. Price controls hold down the appearance of inflation, which may be useful for political purposes. More directly, when price controls are in place, *money* does not depreciate, so people are more willing to hold it. (If a tomato costs 10 Rubles and an hour in line today, and 10 Rubles and *two* hours in line tomorrow, then there is no pressing need to change Rubles into Dollars overnight.)

The Soviet Union already maintained most of these policies, and to great effect: Soviet consumers held as much as half a year's income as cash, where cash + checking accounts are less than one sixth of US annual income, and even tinier fractions in economies with Russian inflation rates, like Brazil. A good part of the cumbersome Soviet financial system can be attributed to the government's desire to maintain demand for its currency, and hence raise revenue from money creation. Many of these policies are still in effect.

These policies, rather than inflation per se, can stop economies in their tracks. They not only force people to hold rapidly depreciating money, but they destroy the payments and credit systems. The ultimate sign is when people and companies resort to barter,

counter-trade and other deals to avoid using money. We see all of these in Russia, and (especially) in inter-republic trade.

Further, inflation can cause havoc with the tax, credit and payments systems. When payments are not indexed, or when interest is not routinely charged on delayed payments, a delayed payment is a payment not made. Hence, there is a large incentive to delay the payment of bills and especially of taxes. In Russia, payments can take three months to clear—three months between when the payers' account is debited and the payee's account is credited. Inter-republic payments can be much worse. With 20% inflation, this amounts to a 60% tax on all transactions. Such a tax destroys the payments system. But the root cause of trouble is not *inflation*, it is the rudimentary tax, credit and payments systems.

Of course, there is a flip side to this. Inflation not only represents a direct tax on money holding, but can be used as above to introduce many hidden taxes and reduce many expenditures. Pensions are only slowly indexed, so the inflation amounted to a default on much of Russia's pension obligations. The Russian government actually seems to be pretty good at demanding immediate tax payment, but endlessly delaying (nominal) payments, again improving its fiscal situation. In this way, Russian inflation is a device for surreptitiously raising taxes and lowering revenue, as it is in the United States.

We are not arguing for the virtues of inflation. Other things equal, it is not desirable. However, it is important to think clearly about *why* one dislikes inflation. It is not *necessary* that inflation cause great economic dislocation, a well-indexed and dollarized economy can handle very high inflation without great damage. Given that Russia is likely to have high inflation for some time, attention might be better spent on removing

the intrusions that interact inflation to cause harm.

4 The Russian financial system.

We have argued that inflation *per se* does not account for the drop in output. Rather, problems with the financial system, some induced or exacerbated by inflation, are the proximate cause of the output drop. This view suggests a closer look at the Russian financial system.

Any financial system serves three functions. It arranges payments between enterprises, it monitors enterprise performance, and allocates credit for investment. Any one of these functions can go wrong, and problems in one area can spill over into the other. We find that lagging, sporadic and haphazard reform of the financial system, while rapid changes were taking place in the rest of the economy, has been the primary source of macroeconomic difficulty.

In describing the financial system through various reforms, we focus on the payments system and the nature of enterprise constraints. The latter needs a little explanation. The transformation of state-owned enterprises into independent capitalist firms is one of the essential aspects of Russian economic reforms. The financial constraints faced by enterprises is the critical difference. State owned enterprises get directives from the government, and face what Janos Kornai called “soft budget constraints”—the government bails out any losses. We call this regime a *solvency guarantee* regime. Capitalist firms make autonomous decisions, but are forced to make correct investment, output and other decisions, by hard budget constraints. Hence economic reform is the *twin* process of moving control from central planners to enterprise managers *and* hardening budget constraints. Clearly, either without the other is disastrous.

In an ideal world, enterprises can borrow or sell equity to finance worthy projects, working capital, or other temporary variations in cash flow. In an ideal world, then, the “hard budget constraint” is a *present-value constraint*: a firm’s present value or net worth must be positive, but it can undergo periods of negative cash flow so long as future prospects are brighter. As we will see, Russian firms are (supposed to) operate in much more stringent *cash-flow constraint*, or *self-finance* regimes.

Our discussion relates primarily to the state sector, and privatized ex-state enterprises. New enterprises do not suffer from many of the problems we outline. However they still account for a small fraction of GDP. In the near term, the performance of the Russian economy still depends on what happens to the ex-state sector. Hence our task is to understand why output is falling here and how further falls can be avoided.

4.1 The Soviet financial system.

The financial system of the Soviet Union was organized to meet the needs of centralized planning. One might suppose that a central planning system would not need a financial system, and in fact a detailed plan containing various targets were received from central authorities—the *techpromfinplan*, referring to technology, production, and finance—rather than financial information, played the central role in deciding what enterprises would produce, at what level, where inputs would come from and to whom output would be delivered, what technology to use, how many workers to employ and how much to pay them, and how much the enterprise should invest.

Even under planning, however, a role for finance emerged. The plan could never be implemented as written. Consequently, enterprise directors had to act with discretion. This discretion in turn, necessitated a means of monitoring their behavior, and this

provided the basic role for the financial system under the previous regime¹¹. By keeping financial records of the transactions made by enterprises, planners could use the bottom line as a monitoring device (*kontrol' rublyom*).

The *techpromfinplan* specified the major financial flows for the enterprise, including profits, loans incurred and repaid, working capital funds, and reserves. When each plan was constructed, the planners decided on the amount of working capital that would be required to produce the plan's target output, and provided it in the enterprises' account with its Gosbank branch. But the financial plan served to *support* the production plan. Gosbank's job was to make sure that no enterprise failed to fulfill its plan due to a lack of available funds.

When an enterprise delivered goods to another enterprise, the seller immediately delivered a payment order to its branch of Gosbank. The seller's Gosbank branch then credited the seller's account. It did not wait for payment to arrive, or even check whether sufficient funds were available in the buyer's account. Importantly for subsequent events, *sellers* rather than purchasers initiated payment. The payment order was then delivered to the Gosbank branch of the enterprise that received the goods. If sufficient funds to purchase the goods were available, the Gosbank account of the purchaser was automatically debited.

There were times, however, when the purchaser's account contained insufficient funds to pay for the delivered goods. In such an event, the payment order was then placed in "file number 2" (*Kartoteka Dva*). At the end of the production cycle, Gosbank provided each enterprise account with the net funds necessary to bring it into balance. This action implemented the *solvency guarantee* or soft budget constraint.

¹¹See Grossman (1963). The remainder of this section follows Ickes and Ryterman (1992).

This system only worked because all transactions flowed within the single bank (monobank). Gosbank could carry enterprise account deficits on its books with no immediate need to settle. Transactions between enterprises could be recorded at the time of transaction, in accounts at different branches of Gosbank, without worrying about payment. No one branch of Gosbank needed to hold reserves to settle imbalances in enterprise accounts. Thus, temporary imbalances in enterprise accounts had no real effects on the flow of production or investment.

The weakness in this system is, of course, the incentive for enterprises to run up losses, knowing they will be bailed out in the end. Worse, directors could easily divert funds to their own uses. Of course, enterprise directors faced many personal and political incentives not to run up too many losses. But, in addition, many puzzling aspects of the Soviet financial system can be understood as useful safeguards against these and other temptations it offered.

The foremost example is the dual-money system. The Soviet financial system strictly distinguished between cash rubles, or *nalichnyye*, and non-cash rubles, or *beznaichnyye*. Cash rubles were used to pay wages, while non-cash rubles were used to pay for inputs. Consumer goods purchases required cash rubles. The incentive rationale for the system is obvious: there's not much point in racking up debts in money that can't be spent on consumption, while, at the same time, production should never be jeopardized for something as unessential as a lack of funds¹². In addition, there was less need to monitor managers' employment decisions than their purchases.

There was a macroeconomic justification as well. The government created sufficient

¹²Keep in mind that these flows were measured in fixed prices that bore no relationship to opportunity costs. Many important inputs were assigned very low prices. Hence, there was no necessary correspondence between the bottom line and performance in this system. Still it was a good way to force enterprise directors to economize as best they could.

cash rubles to pay wages, while at the same time setting the aggregate wage bill to be in (rough) balance with the nominal value of retail goods. It was therefore believed that credit extension to finance production, and the possibility of large ex-post bailouts, would have no inflationary consequences. Of course, Russians were and are very creative at transforming non-cash to cash rubles, so *beznalichnyye* credits lead to (at least repressed) inflation. In addition, only recently have discounts for cash payment appeared: the two currencies would not carry the same price unless it was possible to transform one into the other.

In summary, the Soviet financial system was roughly coherent, with many controls (such as the dual-monetary system, and only very limited autonomy on the part of managers) in place to stop undesirable gaming of other aspects (such as the freedom to rack up debts). Clearly, liberalizing *one* aspect of the system without reforming the others could be disastrous.

4.2 First reforms: January-July 1992

This system got in trouble as it and the economy were partially liberalized. The collapse of central planning and early reforms following the collapse of the Soviet Union in the Fall of 1991, along with the price liberalization of January 1992 gave more autonomy for enterprise directors. The former branches of Gosbank became independent, leading to a proliferation of commercial banks¹³. At the same time, the government said that bailouts were not to be expected, nor would it provide working capital as before. Budget constraints were to be hardened and enterprises were to keep positive account balances.

Yet the actual system of payments was not much changed. When a seller shipped

¹³One should again beware of familiar sounding terms. These banks took very few if any deposits, mostly obtaining funds from the State Savings Bank, *Sberbank*, and receiving credits from the Central Bank of Russia. And many had close relations with some enterprises in a particular region or industry.

goods, he submitted a payment order as before. The order followed the same path, from local branch (now typically an independent bank) to a collection center, to the Central Bank of Russia, to another collection center, and finally to the account in the bank of the purchaser. If sufficient funds were available, the payment followed the entire reverse path. The one crucial change is that the seller's account was only credited at the end of this long process. Payments typically worked through the public mail, so the lag between when a payment order was issued, and when the funds arrived in the seller's account could exceed several months. Payment problems were especially acute when suppliers or customers were located in other republics. And as a result of the dual-money system and the absence of checking accounts or any other financial system, one could not simply short-circuit the cumbersome system, even by so crude and dangerous a means as sending an employee with a suitcase full of cash¹⁴.

This partial liberalization had several unintended and disastrous effects. First, the long lag between payment and receipt was not a problem when all enterprises and banks were owned by the central government, since accounts could be credited before the funds actually arrived. But independent banks can only make payments when there were sufficient funds in the accounts. The lag between payment and receipt suddenly became important, since the seller could not use the funds until they were received. Enterprises too far in debt—possibly through no fault of their own—could not pay wages or obtain supplies. Worse, from the government's point of view, they were unable to pay taxes.

Second, payment was still initiated by the *seller* upon shipment of goods, whether

¹⁴An anecdotal exception may prove the rule: An electronics enterprise in western Siberia had an important supplier in Armenia which, in turn, depended on an important supplier in Azerbaijan. The Siberian enterprise would load one of its planes (it was a large enterprise) with *nalichnyye* and fly to Baku. Delivering the rubles it would fill the plane with components for the Armenian enterprise. Due to the war between Armenia and Azerbaijan, however, the plane could not fly directly to Yerevan, having instead to detour into Russian airspace. Then the components would be exchanged for the Siberian firms inputs.

the purchaser wanted them or not. Managers could just ship supplies, submit payment orders, and force debts on customers that took years to clear up, if they ever were.

Third, high inflation had a dramatic effect in this environment. Enterprises had no options but to hold working capital in non-interest paying enterprise accounts. Money-market accounts paying positive real interest rates were unavailable, and the dual-monetary system prevents enterprises from simply holding foreign currency or other non-depreciating assets. Of course, many enterprises held foreign currency, *offshore*, but as these deposits were illegal, they were of little help in solving internal payments problems. Thus, enterprises were major victims of the inflation tax¹⁵. Also, during a period of high inflation, delayed payments were devalued. 20% inflation per month and two to three months to receive payment adds up to 50% or more lost revenue in the payments system! This alone could bankrupt enterprises that should be solvent.

Given the combination of slow payments and the fact that one could no longer use funds until they actually arrived, the need for liquid working capital exploded. But the central bank, in a “tight credit” period, didn’t provide working capital. Enterprises could try to borrow from commercial banks, but an independent commercial bank will only lend to an enterprise whose present and expected future solvency is clear, or one that can provide easily appropriated and sold collateral. When payments can take two months to clear, it is almost impossible to distinguish an illiquid from an insolvent enterprise. Banks could not tell an enterprise with genuine receivables that would eventually be paid from enterprises whose bills never would be paid. State firms obviously cannot put up state property as collateral; it was equally impractical for privatized enterprises. Consequently, commercial banks did not lend much working capital to enterprises.

¹⁵Though enterprises bore the brunt of the tax in absolute terms, most households have even fewer means of evading this tax. See Easterly and Vieira da Cunha for an analysis of the incidence of the inflation tax in Russia.

Since borrowing or equity sale was not possible, and any cash saved inflated away quickly, the “hard budget constraint” amounted to a *cash-flow* constraint, in which a firm must cover all current expenses, including wages, investment and working capital, out of current revenue. A cash flow constraint seems transparent and easy to enforce, but it is basically impossible for any firm to operate on this basis, even in a stable economy.

The inevitable consequence was an explosion in inter-enterprise debt¹⁶. Inter-enterprise arrears grew by almost a factor of 1,000, from less than R40 billion in January of 1992 to R3.2 trillion six months later. Unpaid bills simply piled up in the venerable file number 2; and as each enterprise could not get payment from its customers it would in turn be forced to stop paying its suppliers.

In this environment, it was very difficult to obtain supplies to keep enterprises going. It was especially difficult to arrange supplies or deliver output across republics of the ex-USSR. A symptom of the problem was the blossoming of barter deals and other non-monetary arrangements for obtaining supplies. This chaos contributed to output declines. This is our point: a monetary, macroeconomic disturbance is responsible for at least a large part of the fall in output. It was not an inevitable result of a move to a market economy; it was a happenstance of the way in which controls were only partially lifted. *It could have been avoided.*

This growth in mutual indebtedness became a major concern, not least for the reason that it led to a fall in tax payments. It was choking economic activity. Most importantly, the situation was explosive, since the stock of debt made the announced hard-budget regime untenable. The government could not distinguish illiquid from insolvent enterprises any more than the banks could, and as the contagion of debt spread through the economy, a literal enforcement would have meant shutting down 40% or more of industrial

¹⁶See Ickes and Ryterman (1992, 1993).

employment. It also meant that soon-to-be privatized enterprises might be technically bankrupt. The government was also very concerned that workers might obtain shares in a worthless enterprise. But, of course, as enterprises realized that the government could not possibly shut down those in debt, it became all that much easier to pile it up; there is strength in numbers.

4.3 July 1992

A bailout loomed, but its consequences would be severe. Once a bailout occurs, pronouncements that there will be no future bailouts lose credibility unless there is some drastic change in regime. Moreover, the bailout would naturally lead to a large increase in Central Bank credit to offset the debts of net-debtor enterprises. There being no source of tax revenue for such a bailout, it would necessarily lead to a spurt in inflation. However, if nothing was done the economy would crash, taking enterprises that should stay in business along with those that should in fact be closed.

In the event, the Russian government set up a scheme to net out the arrears built up prior to July 1, 1992, and bail out net debtors. As a consequence, money growth and inflation accelerated dramatically.

To help prevent a new growth of arrears the payments system was modified. *Buyers* rather than sellers were to initiate payment. In addition, all purchases were to be *prepaid*. Goods were to be shipped only after payment had arrived. This step, it was hoped, would prevent the outbreak of a new wave of arrears. It was also aimed at stopping enterprises from simply delivering unwanted products to their habitual destinations and then demanding payment. The dual-monetary system was largely maintained, perhaps for the same good reasons.

A sudden change to a prepayment system poses an incredibly difficult problem for enterprises. If the need for working capital was large before, it was even larger now. An enterprise needs a huge source of credit or retained earnings if it is to pay for inputs, wait for the payment to arrive, receive inputs, produce its goods, paying workers all the time, sell the goods, and only receive any revenue after another wait. To make matters still worse, the government also began to require prepayment of taxes in the third quarter of 1992. While this measure certainly worked to stop the erosion of real tax receipts, it did so at the expense of enterprises' liquidity, something that was already in short supply.

The tautness of this constraint was alleviated, to some extent, by two factors. First, most enterprises continued to ship goods before receiving payment, as before, when dealing with their traditional customers ("historical relations"). Second, the expansionary monetary policy undertaken by the Central Bank of Russia relieved the pressure of living with the constraint. This is evident in figure 3, which shows that Central Bank credit, in real terms, grew rapidly in the second half of 1992. Much of this growth was in targeted credits to specific industries, channeled through commercial banks. Interest rates were well below inflation, so obtaining such credit was very profitable, and connections were very important. The proliferation of commercial banks in this period was (is) primarily an attempt to obtain these central bank credits for the benefit of specific enterprises or industries.

With easier credit and the prepayments system arrears were kept down, but inflation soared. As yet practically no enterprises were forced into bankruptcy, so the government was undertaking a huge subsidy of loss making enterprises to keep the others liquid. Unless the fundamental causes of arrears are eliminated, policy is caught between a rock and a hard spot. Either the government enforces a tight credit policy to restrain inflation, at the cost of jeopardizing inter-enterprise payments and, hence, eventually,

production, or they soften credit to ease the payments problem, delaying the adjustment of loss-making firms and creating ever-increasing inflation¹⁷.

4.4 1994

As we write, the *system* has not substantially changed.

The distinction between cash and non-cash rubles persists. Part of the explanation may be that most state and former state enterprises still face soft budget constraints: bankruptcy is not yet a credible threat, though once again there is serious, and maybe even credible, talk underway. Without hard-budget constraints, enterprises might increase wages regardless of enterprise profitability¹⁸, with disastrous effects on inflation.

On the other hand, the financial system is quickly adapting to make payments easier. Banks are developing correspondent relationships so that payments do not have to go through the CBR. The economy is dollarizing: individuals hold much wealth in cash dollars, and dollar-denominated accounts are available to both individuals and enterprises. This is evident in the growth of dollar deposits in the Russian banking system, which have grown from 28% of ruble deposits in February of 1992 to 75% in November 1993 (Sachs 1994: 31). Dollar-denominated transactions can be made quickly and smoothly.

However, a web of complex regulation remains, whose unintended consequence is to make life miserable for those who need to make transactions in Russia. The following

¹⁷The timing is crucial in seeing this story. In the first half of 1992, when credit was relatively tight, enterprises were victims of the inflation tax. During this period liquidity was in short supply, and inter-enterprise arrears exploded. During the second half of 1992, credit was easy, and the enterprise sector was a major recipient of subsidized credit. If one averages over the year as a whole (e.g., Easterly and Vieira da Cunha, or Sachs 1994), then it seems as if the enterprise sector was relatively flush. But this misses the true nature of the conditions facing enterprises in 1992.

¹⁸During 1992 and 1993 enterprise directors had an extra incentive to increase wages, since the preferred variant of the privatization program implemented in the Russian Federation allowed workers to gain majority control of the enterprise. Hence, to keep their positions, directors needed to maintain the assent of the workers. See Ickes and Ryterman 1994.

anecdote (told to Ickes by the director of the enterprise in question) makes the point. An enterprise in Voronezh expected a shipment of parts from Ukraine, which had already been paid for. If shipments are not picked up from the railway stations within four hours, there is a large hourly fine. The enterprise was not notified that the parts had arrived until eleven hours had passed. However, a customs duty was still due. Alas, the invoice was in Ukrainian Karbovanets, not Rubles. The customs office was unwilling to accept any calculation of the Ruble equivalent, even one that doubled the duty—anything to avoid the mounting hourly fines. The director had to fax Kiev (at least the seller was in Kiev, to which it is sometimes possible to get a phone line!), and finally received an invoice in Rubles. But, alas, the duty was more than 500,000 Rubles, and so could not be paid in cash. The director had to go to the bank to direct that the money be paid. This took three days, even though the enterprise, bank, and customs office were all in the same city.

Early 1994 saw a period of much more stringent credit, and hence a decline in inflation to the 10% per month range. However, enterprise arrears are rising quickly again. This time may be more dangerous: not only is inter enterprise debt piling up, but so are tax and wage arrears. Some privatized enterprises are apparently more willing to incur the wrath of their workers than before; other enterprises simply cannot make wage payments. The tax arrears are part of the plummeting tax revenue mentioned above. In turn, the government is behind in payments to enterprises.

4.5 Inter-republic trade and the Ruble zone

When the former Soviet Union was replaced by fifteen governments responsible for economic policy, a breakdown in inter-republic trade occurred. Already difficult payments were now international payments, and political events interfered with trade even further.

In an effort to order to preserve a “common economic space,” the new countries (save the Baltics and Georgia) formed the ruble zone, to try to reduce the complications.

But efforts to maintain the ruble zone were fraught with difficulties¹⁹. In 1992, the central bank in each of the new countries could issue *beznalichnyye*, or enterprise rubles. Naturally, each central bank issued credit, as the benefits of credit expansion are felt domestically, while the cost, in terms of inflation are spread throughout the CIS. Given this fact, it is surprising that inflation was not much worse! The brake was that only the Russian central bank could issue cash rubles, which were needed everywhere to pay wages, and the Central Bank of Russia was tightfisted with cash disbursement throughout the CIS.

In the first half of 1992 the large credit issue in the other CIS countries, especially Ukraine, led to a large Russian trade surpluses in CIS trade, financed by inflation in Russia. This also exacerbated shortages in Russia. To limit the excessive credit issue, the Russian Central Bank could issue less currency to other central banks, in order to get them to restrain their own issue of *beznalichnyye*. This not only causes loud complaints about a “cash shortage;” it had the unintended effect of delaying payments to Russian enterprises. In July of 1992 the Russian government moved to end the automatic financing of these surpluses in the correspondent accounts, by fixing strict limits to their size. But this move, when combined with the new prepayment regime drastically reduced trade between the republics.

The fundamental problem with the ruble zone, at least from the Russian side, was that as a structural net creditor, Russia diverted significant resources to the other countries, perhaps as high as 10% of Russian GDP during the last quarter of 1992. These transfers took two basic forms: exports of petroleum at subsidized prices, and deliveries of the

¹⁹Goldberg, Ickes, and Ryterman (1994) discuss the implications of the breakup of the Ruble zone.

common currency. The idea of using a common currency to maintain inter-republic trade had a basic appeal. The problem, however, was how to separate the payments aspects from the fiscal transfers needed to maintain a currency union. This dilemma remained unresolved until the currency reform of July 1993 (the withdrawal of pre-1993 rubles from circulation) rendered it irrelevant.

The appeal of the idea of currency union continues; witness the plans for a currency union between Belarus and Russia. But these plans (as most recently reported) still allow the Belarus central bank to issue Rubles. Thus, they don't address the central requirement for a currency union: a clear understanding of who controls monetary emission.

In summary, the sudden disruption of trade brought on by the collapse of the Union and the ensuing payments problems is a second culprit for the fall in output. It too did not have to happen, and it too can be avoided in the future.

4.6 Bankruptcy and investment

We have focused on the payments part of the financial system, and the corresponding needs for working capital to bridge the timing of revenues and expenditures, because we think these are the essential parts of the story behind the unusual fall in output. But the role of the financial system in investment and in providing the right incentives for restructuring are the larger long-term story.

In the end, large parts of the ex-state sector will have to be closed down. Their workers will move to new private sector jobs. Other ex-state firms will continue, but require lots of new investment. The financial system gives the signals for these transformations. Actual bankruptcy or its threat is what closes operations down. More importantly, and more subtly, new investment can only be marshaled in the presence of an operating bankruptcy

mechanism, as we now explain.

In practice, enterprises have very little access to capital markets. We mentioned above the problems firms face in obtaining working capital loans: the chain of arrears makes it hard for an independent bank to distinguish the illiquid from the insolvent. Hence, most credit is still simply created by the central bank and passed to selected enterprises or industries through “their” commercial banks during loose credit periods, and is just less available during tight credit periods.

Even the chain of arrears might not cause problems, however: perhaps loans can be based on collateral, or firms could raise cash via equity sales. Here is where the absence of a bankruptcy mechanism eliminates the potential for a capital market. A state firm can’t put up collateral: Its managers can’t sell state property! Without a bankruptcy mechanism, even a privatized state firm can’t put up collateral: in the event of a default, there is no way for the bank to make sure it will get the collateral.

Furthermore, the value added tax and LIFO accounting mean that even bankrupt firms have substantial tax obligations. These are senior to other claims. Thus, a creditor cannot force a bankruptcy to be repaid—the result will simply be to have the assets go to pay taxes. In addition, it is unclear whether wage arrears will be senior to debt in bankruptcy proceedings, since there have been so few.

Clearly these problems can be addressed. For example, a bankruptcy could force a loss of control or equity without forcing liquidation. In this way creditors could recover something or at least discipline management.

Without collateral, equity is an essential ingredient for debt finance. The potential loss of equity in bankruptcy constrains the borrowing behavior of a firm. Prior to privatization equity does not exist. And if enterprise directors are uncertain over who will own the firm

after privatization, they will try to borrow extensively to keep the enterprise operating; lenders will wisely refuse to extend credit.

In this environment, we would expect firms to try to sell *new* equity to raise cash and finance investment. (We emphasize *new*; the existence of mutual funds that can trade some shares of privatized firms' *existing* equity is only a precursor to a market in which firms can raise capital by selling *new* equity.) This did not happen. Of course state firms can't sell ownership shares. And there were and are a variety of legal impediments for privatized firms. Perhaps more importantly, selling equity requires some idea of the net worth of the enterprise and the value of potential investment projects. It was and is very hard to get any idea of the net worth of enterprises. First, there was and still is great uncertainty over the course of privatization—what the legal status of owners will be. Even more fundamentally, there is great uncertainty over the viability of most enterprises in a market environment. Most firms are still *behaving* much as they did in a state-controlled environment. It is very hard to distinguish between those that *cannot* adjust to a market environment, and those that simply *choose* not to change, because adjustment is costly and the incentives to do so are not yet strong. In addition, the presence of many still-controlled prices, high inflation, and massive arrears make a good accounting of present net worth difficult, to say nothing of the prospects of a new investment or restructuring plan.

In summary, firms have little access to credit or equity financing. As a result, the conventional *present value* hard budget constraint is in effect a *cash flow* constraint. The latter is essentially impossible for firms to achieve, so they pile up arrears, in effect relying on inter-enterprise lending to satisfy working capital needs. Also, since it is impossible to achieve, it is impossible to enforce. And finance for investment or restructuring just does not happen.

5 Uncertainty, time-consistency and reform.

The Soviet Union and now Russia have been on, to use Gertrude Schroeder's phrase, a "treadmill" of reforms that are introduced, quickly fall apart, and are abandoned. The post-Soviet era seems only to have speeded up the treadmill. It is certainly understandable that people are hesitant to believe each regime will last, for example that an announced hard budget regime will not end in a massive bailout.

5.1 The economics of time-consistency

Economists have studied several aspects of this phenomenon, under the broad heading of "time consistency." Here are two basic parables.

1) *Optimal taxes.* At any point in time, a benevolent government's optimal tax policy is to confiscate all wealth, and default on its bonds. Thereafter, it promises never to tax wealth at all, and to repay all its debts. This policy is optimal because it induces no distortions: current owners of wealth will be unhappy, but they cannot alter any economic decisions in order to avoid the tax. Savers and workers see no distortions to the accumulation of *new* capital or their efforts.

The hole in this scheme is obvious: *next* year, the government would very much like to go back on its promise, confiscate all wealth, default on its bonds, and promise *again* never to touch wealth or bonds. The plan was not *time-consistent*. This fact will cause the scheme to unravel. Smart people will smell the rat, and won't even work or save initially, because they know the government will break its promise. If the government has a habit of announcing a new stabilization plan every six months or so, people don't even have to be that smart.

2) *An unstable reform.* A government wants to reform its economy by reducing a tax—say a tariff or an excessive tax on capital. Lowering this tax will raise incentives to invest, so output will expand, and eventually the government will replace the lost tax revenue with larger and less distortionary income taxes. But if the investment does not occur, then the government will have to rescind the reform in order to rebalance its budget. Thus, investors only want to take advantage of the new investment opportunities if the reform is credible; in turn the reform will only stick if investors believe in it. Each individual investor will only invest if he thinks all the other investors are going to. This game has a *multiple equilibrium*: it is possible that everyone invests and the reform succeeds, or that nobody invests and the reform fails. The reform is less likely to succeed if the government has limited access to borrowing or other taxes to bridge the period of lower revenues.

Much of what seems mysterious in government policy amount to attempts to circumvent these problems. In both cases, the government needs a *precommitment* device—the government finance equivalent of Odysseus’ strategy of being tied to the mast to hear the siren’s song. Constitutions and traditions are attempts to form such precommitment devices, but of course constitutions can be amended or ignored and traditions violated. (Constitutionalists forget that Liberia and the United States have the same paper organization of government, or that the Soviet constitution protected more rights and civil liberties than any other.) Governments can also try to precommit through reputations. Revolutionary governments often honor the bonds of their predecessors, hoping that this will convince bond purchasers of the sincerity of their own promises to repay. Though the potential wisdom of such a move has been known for ages (Alexander Hamilton clearly states it), only recently have economists begun to analyze whether such ‘reputational

equilibria' really can be sustained. It turns out they are quite fragile.

Thus, while it is easy to call for time-consistent policies, it is in fact quite hard for governments to precommit to actions they may later regret. We offer no magic bullets. But one can at least avoid gross mistakes. No one is likely to trust a reform plan that the government may regret in the future. Complex multi-stage reform plans are obviously unlikely to work.

5.2 Time consistency and Russian reform

The second parable above is close to the heart of the conundrum facing Russia. As economic activity moves from the state to the private or privatized sector, the method of taxation has changed.

The Soviet Union relied extensively on the turnover tax. This was not a value-added tax; it was simply the difference between the wholesale and retail price of goods. Different tax rates for different goods made it essentially an arbitrary tax, and one that could be used to grab wealth ex-post to cover budget surprises²⁰. Planning had one virtue, however: arbitrary taxation imposed few (additional) distortions to economic activity²¹. Planners could simply direct investment into a desired area, even if a looming tax would have eliminated private investors.

As the Russian economy becomes increasingly private, the scope for such arbitrary policy is increasingly reduced. In a private economy, agents can much more easily avoid taxed activities, if not evade taxes altogether. Hence, the adverse effects are correspond-

²⁰For example, a button manufacturer reported in June 1992 that she had faced a 98% turnover tax in the Soviet era. Buttons were considered a lot less important than, say, cement. The change to the 28% value added tax made this the most profitable enterprise in the former soviet union!

²¹Planners could not act in a completely arbitrary manner: they could direct investment and output, but workers and managers had to be provided incentives to supply effort. Consequently, the use of discretionary taxation did have some adverse incentive effects (Litwack 1992).

ingly greater.

Most importantly, decisions to invest, to restructure an enterprise or industry, to move out of dying areas, etc. all require confidence in the future, and confidence that the fruits of these difficult decisions will not be wiped out by some future policy change. But, as we saw above, the economic environment, and especially the structure of taxation is chaotic. Enterprises can be sure of only one thing: if they find a way to make a lot of money, the government will find a way to tax it.

Increasingly autonomous enterprises have reacted predictably. Capital is flying out of the country; state enterprises are being carefully stripped of assets. Enterprises are becoming cleverer at avoiding taxes. The management at many enterprises have, for example, formed new enterprises that sell to the original one, and which are used to hide income from the taxman (and the statistics). The government is left with fewer and fewer things to tax, so it raises rates more and more. This either halts activity or drives more and more of it underground. The inevitable result is that the government resorts to the inflation tax.

It is not necessarily *current* taxes and policies that drive this behavior. It is the expectation that *future* policies will confiscate any wealth that comes from legitimate investment or restructuring. Those expectations are unlikely to be changed by statements, promises, new reform plans, or changes in prominent officials. It does not matter how well-intentioned the government is; everyone realizes that if it is bankrupt in a few years it will have to expropriate what it can.

The government is often encouraged to balance its budget in order to stabilize the economy. If balancing the budget consists only of permanently reducing wasteful expenditures, this may be good advice. But this advice backfires when balancing *current*

budgets reduces the present value of *future* income. If the budget is “balanced” by increasing already heavy taxes, by delaying payments that will have to be made in the future, or by refusing credits to industries that the government still promises to bail out if they threaten to go bankrupt, then balancing the budget today increases the burden of *future* taxation. Rational people try to avoid the implied increase in future taxes. In summary, these measures for improving current budget deficits will lead to a *deterioration* in economic performance and a further *delay* in restructuring, precisely the opposite of the hoped-for effects.

Investment as an option

The essence of economic restructuring is investment, in the broadest sense: inducing economic agents to take actions that are costly or painful today, but will pay off in a future market economy. Not just physical investment—building new plants or installing new machinery—but restructuring enterprises, moving to new areas, setting up new institutions, etc.

So far, we have only considered how investment responds to its *expected* rewards. But in an uncertain environment, investment decisions are more complex and interesting. Investment opportunities are like an *option*. Investors can decide to invest, not to invest, or *to wait* and see if conditions will improve, in the meantime keeping any wealth they can hidden or abroad.

The option value of waiting depends on two forces, the uncertainty associated with the investment, and the profits foregone while waiting. The more uncertain the future, the better it is to wait and see how things turn out. However, the more current profits are foregone by waiting, the better it is to get on with the investment project. Thus, in an uncertain and unprofitable environment, investors may choose to wait to invest, even

if the *expected* rewards are high.

Uncertainty with respect to returns is a central feature of economic change in Russia. The policy and regulatory environment, the availability and prices of inputs, what markets will be good opportunities,... all these are much more uncertain in Russia than in western economies. The fact that all other enterprises are simultaneously *restructuring* adds to the uncertainty. Since the economy is in transition, immediate profits are relatively small compared to future profits if reform succeeds. Under such circumstances it may be of considerable value to delay investing until more is known.

Clearly, this component of investment makes our multiple-equilibrium reform conundrum even tougher. Even if the expected value of investment is profitable, economic agents may prefer to wait and see if the reform plan sticks before committing themselves. But if agents don't invest, output will not rise, tax revenues will not increase, and the reform plan is guaranteed to fail.

6 Some tentative prognostication and comments on policy

It is dangerous to predict events or comment on policies, especially from halfway around the world and facing the inevitable publication lags of a volume such as this one. The past is full of mistaken efforts, in which events in Russia are judged too quickly and mistakenly from habits with western economies. Distant observers failed to realize that the infamous currency confiscation episode of the summer of 1993 really was a mechanism for cutting off subsidies to other republics, or, worse, that tight credit would simply result in an arrears crisis and a bailout, since bankruptcy promises could not be enforced after arrears piled up.

Still, we can't resist a few comments.

Many observers are now happy, since credit creation and inflation are declining. They may be falling into the same trap, thinking that credit is a matter of will rather than present value budget arithmetic. That arithmetic is gloomy. Tax revenues are 2/3 of forecasts, evasion is widespread, and the government is still expected to bail out loss-making industries. Tax rates are so high that Russia may actually be on the wrong side of Laffer curve, where higher rates lead to *lower* revenues. The government has fallen behind in paying for goods it has purchased, many enterprises are in tax arrears, and interenterprise arrears are again rising. It is difficult to see how the government can maintain its current policy stance in the wake of these events; a resurgence of inflation seems more than likely.

Many observers are also happy about privatization, looking at the huge number of privatized firms. Privatization is only a step, though perhaps a big one, on the road to reform. Many privatized enterprises continue to behave as if it were "business as usual." To bring about a change in *behavior*, enterprises must have the ability to raise funds. More important, they must face the proper incentives so that they will prefer to restructure. This is where a credible bankruptcy system is crucial. *financial* reform is thus the key to economic development in Russia, but not enough is happening.

In this environment, it is perfectly rational that not much restructuring is happening, and capital is in flight. Russians understand that desperate government finances can render any restructuring or investment useless, and they know that the future has less to do with character, than with constraints. In turn the fact that there is little investment or increase in taxable income makes the government more desperate.

Some observers argue that the Russian government must balance its budget as quickly

as possible, that it should raise taxes to do so, and that international aid should be used as a carrot to force these policies. We disagree. Stated tax rates are already some of the highest in the world, and it is unlikely that more revenue can be raised.

Progress on the *present value* deficit is much more important than reaching quarter-by-quarter targets for lowering reported deficits. Measures that raise deficits for a few quarters or even years *but solve the long-run budget problems* could result in a flowering of activity. Excessive focus on short-term budget problems that does nothing about the underlying problems will do nothing to allay the fears of higher future taxes. As we have noted, the government faces a multiple equilibrium reform conundrum. The government needs to tip the balance against the "wait and see" attitude. The best way to do so, is to tackle the root causes of the budget problem.

The most important item on the agenda, then, is for the government to find a way to end its implicit commitment to bail out loss-making industries, and to do so credibly. If it can do this, whether it meets intermediate budget deficit and credit creation targets will be irrelevant; everyone will know that the regime has changed. This is an intricate and very political process, so we have no magic bullet, but we can offer a few comments.

First, the government may fear allowing bankruptcies, thinking that bankruptcy must imply liquidation and shutting down huge fractions of industry overnight. But bankruptcy need not imply liquidation. Bankruptcy in the US typically is an arrangement in which the enterprise *continues to operate*, but equity holders may lose the value of their equity and control rights; current management may be replaced, etc. Russia only needs something very similar. Management must feel threatened that they will lose their positions if performance is not turned around. This kind of bankruptcy is perfectly possible in Russia, and need not imply shutting down large fractions of industry. Hence, the

government can allow it to happen. In turn, the credible threat that current management may be replaced may induce many firms to restructure.

Any progress in this direction depends, however, on financial reforms that will make it easier to distinguish the illiquid from the insolvent. As we have emphasized throughout, the current state of the financial system makes this difficult. But it is precisely the inability to make this distinction that hampers policy. Until the financial system is developed to the point where illiquidity and insolvency can be distinguished, not only will bankruptcy be rare, but so will be any equity investment, and hence, restructuring.

More generally, the government can make the threat of bankruptcy (and liquidation too which will have to happen in many cases) much more credible by taking visible actions to deal with bankrupt firms. In particular, the government could set up a special fund for displaced workers. Setting aside resources to deal with structural unemployment provides a signal that the government means business. Progress also needs to be made on increasing labor mobility. At a minimum, laws can be changed to allow workers more freedom of movement. All of these actions help signal “we’re ready to do it.” It’s not quite a precommitment, but it’s better than threatening something one doesn’t have the means to do.

Similarly, some observers argue that the central bank should continue to tighten credit in order to lower inflation. Again, this advice may backfire, and may result from confusing the Russian situation with that of typical western governments. Without changing the financial system, especially the commitment to bail out losing enterprises, tight credit will lead to a mass of arrears. In this situation, a bail-out is unavoidable, since the babies can’t be distinguished from the bathwater. For this reason, *looser* credit may be desirable when the government tries to change to the regime of lower bail-out commitments. Without

changing the *system*, tight credit today merely trades slightly lower inflation today for the certainty of higher inflation tomorrow.

That said, we stress the importance of improvements in the financial system, especially improvements that allow the financial system to weather inflation and bouts of tight credit without arrears piling up. The lesson of the payments crises is that lowering credit and inflation need not imply output declines, but will if they cause needless financial system disruption. Some progress is being made, notably increasing dollarization and faster clearing between commercial banks. Progress on credit access is slower, undoubtedly because the fundamentals of collateral and bankruptcy procedures are not in place.

7 References

- Cochrane, John H., and Barry W. Ickes, "Stopping Inflation in Reforming Socialist Economies: Some Pleasant Socialist Arithmetic," unpublished, September 1992.
- Delyagin, Mikhail, and Lev Freinkman, "Extrabudgetary Funds in Russian Public Finance," *RFE/RL Research Report*, vol. 2, no. 48, 3 December 1993.
- Easterly, William, and Paulo Vieira da Cunha, "Financing the Storm: Macroeconomic Crisis in Russia, 1992-3," The World Bank, Policy Research Working Paper, 1240, January 1994.
- Goldberg, Linda, Barry W. Ickes, and Randi Ryterman, "Departures from the Ruble Zone: The Implications of Adopting Independent Currencies," *The World Economy*, vol 17, 3, May 1994.
- Grossman, Gregory, "Notes For a Theory of the Command Economy," *Soviet Studies*, XV, 2, October 1963.
- Hanson, Phillip, "The Russian Budget Revisited," *RFE/RL Research Report*, vol. 3, no. 16, 6 May, 1994.
- Ickes, Barry W., and Randi Ryterman, "Financial Underdevelopment and Macroeconomic Stabilization in Russia," in Gerard Caprio, David Folkerts-Landau, and Timothy Lane, eds., *Building Sound Finance in Emerging Market Economies*, IMF-World Bank, 1994, forthcoming.
- Ickes, Barry W., and Randi Ryterman, "The Interenterprise Arrears Crisis in Russia," *Post-Soviet Affairs* (formerly *Soviet Economy*), 8: 4, October-December, 1992.

Ickes, Barry W., and Randi Ryterman, "Roadblock to Economic Reform: Interenterprise Debt and the Transition to Markets," *Post-Soviet Affairs* (formerly *Soviet Economy*), vol 9: 3, July-September, 1993.

Ickes, Barry W., and Randi Ryterman, "From Enterprise to Firm: Notes For a Theory of the Survival-Oriented Enterprise," in Robert Campbell and Andrzej Brzeski, eds., *Issues in the Transformation of Centrally Planned Economies: Essays in Honor of Gregory Grossman*, Westview Press, 1994a, forthcoming.

International Monetary Fund, Economic Reviews 1993, *Russian Federation*, Washington DC, June 1993.

International Monetary Fund, Economic Review: *The Economy of the Former U.S.S.R. in 1991*, Washington, DC, April 1992.

Gaddy, Clifford, "Economic Reform and Individual Choice in Russia," mimeo, Brookings Institution, August 1993.

Koen, Vincent, and Steven Phillips, "Price Liberalization in Russia: The Early Record," IMF Working Paper, October 1992.

Litwack, John, "Discretionary Behavior and Soviet Economic Reform," *Soviet Studies*, 43 (2), 1991: 225-279.

Lipton, David, and Jeffrey Sachs, "Prospects for Russia's Economic Reform," *Brookings Papers on Economic Activity*, 2, 1992.

Lucas, Robert E., "Some International Evidence on Output-Inflation Tradeoffs," *American Economic Review*, 63, June, 1973.

Ransom, Roger L., and Richard Sutch, *One Kind of Freedom: The Economic Consequences of Emancipation*, Cambridge University Press, 1977.

Russian Ministry of Finance (1994) "Russian Finances in 1993: A Finance Ministry Survey," *Voprosy Ekonomiki*, no. 1, 1994: 3-86.

Sachs, Jeffrey, "*Russia's Struggle with Stabilization: Conceptual Issues and Evidence*," The World Bank, Annual Bank Conference on Development Economics, April 1994.