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March 10, 1995

To: Members of the Executive Board

From: The Secretary

Subject: Staff Studies of Policy Experiences and Issues in the
Baltic Countries, Russia, and other FSU States

The attached supplement provides background information to the paper on the overview of policy experiences and issues in the Baltic countries, Russia, and other countries of the former Soviet Union, which is tentatively scheduled for discussion on Monday, March 20, 1995.

Mr. Citrin (ext. 38982) or Mr. Lahiri (ext. 38864) is available to answer technical or factual questions relating to this paper prior to the Board discussion.

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INTERNATIONAL MONETARY FUND

Staff Studies of Policy Experiences and Issues in the Baltic Countries,
Russia, and Other FSU States

Prepared by the European II Department

(In consultation with other Departments)

Approved by John Odling-Smee

March 9, 1995

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I. The Decline in Output

1. Introduction

The poor and deteriorating growth performance of the economy of the U.S.S.R. from the mid-1970's to late 1980's was a major cause of its demise in 1991. 1/ The 15 states which emerged on the territory of the former Soviet Union (FSU) launched their systemic transformations from central planning to markets with the primary objective of reversing this declining trend and improving the output performance of their economies. However, since the dissolution of the U.S.S.R., recorded output has fallen significantly in all of these states. Following a decline for the region as a whole of roughly 10 percent in 1991, real GDP in these states dropped by about one third on average in 1992-93, with a further significant deterioration in 1994 (Table I.1).

The extent of recorded output decline has varied substantially across countries. Through 1994, the largest cumulative declines were registered in both Armenia and Georgia, where output in that year was roughly one third or less of its 1990 level. In contrast, in Belarus, Estonia, Uzbekistan, and Turkmenistan, real GDP in 1994 was as much as 65 percent or more of the level prevailing in 1990. 2/

This chapter aims to discuss the major reasons that could account for both the overall decline in activity and the observed differences in output performance across countries, and to identify policy implications and

1/ See Easterly and Fischer (1993) for a description of the economic decline in the U.S.S.R.

2/ Given the poor state of statistical reporting in the FSU, these estimates of output decline should be interpreted with caution. While there is no doubt that output has fallen substantially, it is likely that the decrease has not been as large as indicated by the official figures. First, statistical reporting in the state sector has generally deteriorated in the transition period due to administrative disorder. Second, growth rates may be biased downwards by the fact that incentives to overstate production in the planned economy have, under liberalization, given way to strong incentives to report as little revenue as possible, or to avoid reporting altogether. Third, production in the newly emerging private or informal sectors--where most new production and growth has been occurring--is poorly captured by official statistics (see Berg and Sachs (1992) and Rajewski (1993) for Poland, and Gavrilencov and Koen (1994) for Russia). Note that biases in output estimation may differ between countries, especially given the significant variations in the degree to which individual countries have been able to introduce new statistical standards; these variations may account for some of the differentiation in individual countries' performance (see in particular the discussion on output movements in the Baltics, below).

Table I.1. The Baltics, Russia, and other FSU Countries:
Changes in Real Gross Domestic Product, 1991-1994

(In percent)

	1991	1992	1993	Est. 1994	Cumulative 1991-94
I. <u>Countries afflicted by armed conflicts:</u>					
Armenia	-10.8	-52.4	-14.8	--	-63.8
Azerbaijan	-0.7	-22.1	-11.5	-23.1	-47.3
Georgia	-20.6	-45.6	-30.0	-35.2	-80.4
Moldova	-18.0	-29.1	-8.8	-22.3	-58.8
Tajikistan	-8.7	-30.0	-27.6	-15.1	-60.7
II. <u>Countries with a large share of natural resource exports:</u>					
Turkmenistan	-4.8	-5.0	-9.9	-20.0	-34.8
Uzbekistan	-0.9	-11.0	-2.4	-2.6	-16.1
III. <u>Others:</u>					
A. (Baltics)					
Estonia	-7.9	-17.0	-2.1	6.0	-20.7
Latvia	-11.1	-35.2	-14.8	1.8	-50.0
Lithuania	-13.1	-20.1	-16.1	2.0	-40.6
B. (Moderate reformers)					
Kazakhstan	-13.0	-14.0	-12.0	-20.1	-47.4
Kyrgyz Republic	-5.2	-19.1	-16.0	-15.1	-45.3
Russia	-13.0	-19.0	-12.1	-15.0	-47.3
C. (Slow reformers)					
Belarus	-1.2	-9.6	-9.5	-21.5	-36.6
Ukraine	-11.9	-17.0	-14.2	-23.0	-51.7
Average (unweighted)	-9.8	-22.8	-14.1	-17.7	-49.2

Sources: Data provided by authorities; and staff estimates.

determinants of renewed growth. Section 2 briefly surveys the major factors which have been hypothesized to play a role in the observed output decline, presents basic evidence across countries and sectors, and suggests some possible conclusions. Section 3 addresses the prospects for recovery, including some observations based on the recent experience in Eastern Europe. A concluding section summarizes findings.

2. Output decline in the Baltics, Russia and other FSU states

The 15 countries can be placed into three broad categories in terms of output performance since 1990 (Table I.1). A first group consists of Armenia, Azerbaijan, Georgia, Tajikistan, and Moldova. These countries have been involved in armed conflicts and in some cases were subject to economic blockades, and have had large declines in output. A second group, Uzbekistan and Turkmenistan, are those with a large share of natural resource exports relative to the size of their economies. These two countries have experienced relatively small output declines, as fairly stable demand and favorable price movements for these exports buoyed economic performance. A third group, the other eight countries, have recorded a wide range of output performance that generally lay in between that of the first two groups of countries.

Notwithstanding these differences, the underlying trend in output has been negative and subject to a common set of forces in all the 15 countries. In that regard, a number of explanations have been put forward. These include: (i) sectoral shifts and aggregate shocks directly related to systemic change from a planned economy to a market-based system open to world trade; (ii) institutional and political problems arising from the disintegration of the Soviet Union; (iii) the monopolistic structure of traditional industries; and (iv) overly contractionary monetary and credit policies. In the following, we argue that the first two sets of explanations are broadly consistent with the cross-country aggregate and sectoral data for the region, whereas there is little support for the latter two.

a. Main causes of the decline in output

(1) Factors related to economic transition

The changing role of the state, and the liberalization of domestic and external sector policies, are likely to have contributed to the decline in output in these transition economies in a number of ways: ^{1/}

First, during transition, the reduction in government coordination of economic activity is not instantly and fully replaced by market

^{1/} A general discussion of the following issues in the context of Central Europe is provided in Berg (1993), Bruno (1992), Commander and Coricelli (1992) and Williamson (1993).

coordination. The consequent disruptions in input supplies and availability of credit, and marketing difficulties for enterprises, have contributed to what has been termed the "transformational recession". 1/ In this context, the lack of a legal infrastructure and financial institutions appropriate for a market economy was a serious impediment to the operation of a market based system.

Second, price liberalization implies a large structural shift in production in the direction of goods which were previously in "shortage", and away from those of the traditionally favored industries. The asymmetric responses of sectors to relative price movements, with cutbacks in production taking place faster than corresponding increases, led to declines in aggregate output. In Russia, for example, high prices for fodder relative to that of animal products led nonprivate farms to significantly reduce herd sizes during 1992. On the other hand, in spite of large increases in the relative prices of energy products, output of crude oil in Russia fell by 15 percent in that year. There was little evidence of successful attempts to rapidly ameliorate the supply-side constraints such as the depletion of low-cost high-yield fields and the deterioration in the quality of existing wells to take advantage of higher prices. Furthermore, some of the benefits from radical price liberalization in improving the efficiency of resource allocation were postponed due to the considerable uncertainty and confusion about relative prices at the early stages following liberalization. Adjustments in relative prices were protracted over a lengthy period, and the geographic dispersion of prices was large. 2/

Third, the shift of production away from traditionally favored sectors was reinforced by the reduction in direct or indirect government demand in a number of industrial and military sectors. For example, historically, the U.S.S.R. had extended sizable export credit to developing countries, mainly to finance arms exports. Arms exports and output of the military industrial complex were adversely affected by the sharp reduction in the provision of new export credits from the late 1980's. 3/ Output in this sector was

1/ See Kornai (1994). According to the survey data for Hungary reported by Kornai, more than a quarter of the respondents considered the insufficient supply of raw materials and spare parts of domestic origin to be an impediment to production until early 1990. Financing problems were mentioned as an impediment to production until early 1992 by more than half of the respondents.

2/ For example in Russia, price of food relative to overall consumer prices rose by 12 percent during 1991, a further 16 percent in January 1992, fell somewhat during the next few months, and rose again from June onward and ended the year 25 percent above its December 1990 base. Similarly, prices sometimes varied by a factor of ten or more in state stores. See Koen and Phillips (1993) for a detailed analysis of price liberalization in Russia.

3/ See Christensen (1994), pp. 5-6.

also affected by a decline in domestic demand--for example, defense spending in Russia reportedly dropped from over 8 percent of GDP in 1991 to 5 1/2 percent of GDP in 1992, with sizable cuts in military procurements. As a result, the share of industrial output in defense-related industries oriented toward military purposes reportedly fell from 40 percent in 1991 to 30 percent in 1992.

In the short term, the decline of traditional sectors is likely to be more rapid than the growth of new sectors for several reasons. Investment in new sectors may be particularly slow to respond because of uncertainty regarding relative prices, property rights, legal infrastructure and the general macroeconomic environment. 1/ In addition, even if investment in new activities takes off quickly, this may only slowly translate into new productive capacity because of the time required to build new plants and train labor. One would thus expect a net reduction in overall output during the transition period.

Fourth, the transition process has typically entailed a modification of the tax/subsidy system--particularly trade taxes, variable profit taxes and subsidies--to substantially reduce, if not eliminate, the large variations in net tax incidence which existed under central planning. This has implied potentially large increases in profitability for some sectors and large decreases for others, which may also have translated to lower aggregate output through an asymmetric growth response as described above. 2/ Such changes have been manifest not only across industries but across regions as well, as reflected in a marked decline in financial transfers to the poorer states. In the U.S.S.R., some of the central Asian republics received grants from the union budget of 15 percent to 20 percent of their GDP. Transfers also took place through low prices for energy and raw materials, relative to world market standards. In 1992, while the transfers from the union budget ceased, following significant upward adjustments in energy prices, Russia continued to provide official financing to other FSU states equivalent to around 20 percent of these countries' combined GDP, and in some cases (Georgia, Tajikistan, Turkmenistan, and Uzbekistan) amounting to one third or more of estimated GDP. 3/ Official financing from Russia,

1/ Indeed, the process of privatization in most states of the region has been delayed until long after the beginning of economic reforms (the Baltics and Russia are clear exceptions), particularly with regard to medium- and large-scale enterprises. Also, traditional forms of organization under the plan have generally not been replaced with a comprehensive set of commercial codes or court procedures for contract enforcement of claims (see Kornai (1994) for a discussion of these issues in the case of Hungary).

2/ The traditional system of taxation and subsidization, and the changes in this system under transition, are described in Holzmann (1991), Kopits (1991), IMF (1990), and IMF (1994). Fiscal and quasi-fiscal developments for non-FSU transition economies are discussed in detail in IMF (1994).

3/ See IMF (1994b).

however, was substantially reduced from 1993 onwards. This exacerbated the output losses in these states by reducing their ability to pay for imported inputs. 1/

Finally, the liberalization of external transactions has had important sectoral and aggregate implications. Prices of tradable have moved towards world levels, notably for energy and other raw materials. 2/ According to one estimate, for the 14 states apart from Russia, this entailed a terms of trade deterioration of some 23 percent in 1992 followed by a further worsening of over 10 percent in 1993-94. 3/ At 1990 levels of trade, a 30 percent deterioration in the terms of trade is estimated to have had a 13 percentage negative impact on GDP on average in the 14 states excluding Russia. 4/ On the other hand, the sharp decline in the volume of interrepublican trade prevented Russia from taking advantage of the terms of trade improvement.

At the same time, and especially for the countries in this region, traditional Council for Mutual Economic Assistance (CMEA) export markets have been lost. The abolition of CMEA and the revision of prices of raw materials such as energy products implied an estimated 40-45 percent improvement in the terms of trade with the other CMEA countries. 5/ However, CMEA trade volumes collapsed, preventing the countries of the FSU to take full advantage of this terms of trade improvement. Thus, for example, from around 60 percent of the U.S.S.R.'s total trade in the second half of 1980's, the former CMEA's share dropped to less than 20 percent of Russia's trade with the area outside the Baltic states and other FSU countries in 1992. Finally, pent-up demand for foreign goods has led to substantial real depreciation as exchange markets were decontrolled. This, together with the removal of implicit import price subsidies, has resulted in rising imported input costs, lowering the viability of enterprises which depend heavily on these inputs.

1/ The exact magnitude of the net impact of the cessation of transfers on these economies is hard to estimate without detailed information on the composition of imports precluded by the cessation of transfers, and import intensities of production in the various sectors.

2/ See IMF (1994b) for an analysis of the magnitude of relative energy price increases in the FSU. In their study of Eastern European transition economies, Borensztein and Ostry (1993) find that rising energy prices were particularly important in explaining output decline. A more general discussion of movements in the terms of trade under liberalization is provided in Tarr (1994).

3/ See IMF (1994b).

4/ Trade intensities in 1990 estimated by Tarr (1994) have been used in this calculation.

5/ Kornai (1994), Rodrik (1992) and Rosati (1993) discuss the effects of the dismantling of the CMEA in Eastern Europe; Christensen (1994) presents estimates of the loss in CMEA trade volume in Russia.

In terms of systemic change, in rough terms, the Baltic states are furthest along in the transition, followed by the Kyrgyz Republic, Russia, Moldova, and Kazakhstan. The other countries have made varied but generally less progress. Once country-specific factors such as armed conflicts and relative importance of natural resource exports are taken into account, the cross-country experience regarding aggregate output, investment, and trade appears to be broadly consistent with the above arguments that stress the relationship between output decline and systemic change.

Among the nine countries of the third group, the speed of output decline varied directly with the speed of systemic change during the first two years of transition. Indeed the output decline was almost twice as fast in the Baltics compared to Belarus and Ukraine in 1992 (see tabulation below and Chart I.1). The positive rewards in output from systemic change subsequently accrue with a lag, and thus, in the Baltic states, although greater declines in output were recorded at the beginning of the transition period, subsequently output stabilized or increased. Countries (such as Belarus and Ukraine) which were slow to both stabilize and undertake structural reforms registered smaller declines early on, but the fall in output has recently accelerated, reflecting the progressive collapse of the traditional sectors and the lack of significant growth in new activities. Countries which liberalized relatively early but did not immediately stabilize (Russia and the Kyrgyz Republic) have recorded continued declines throughout the period. In these countries, continued quasi-fiscal support of unprofitable enterprises in the initial period may have slowed adjustment

Real Gross Domestic Product ^{1/}

(Average annual percentage change)

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	Cumulative <u>1991-94</u>
Fast reformers					
Estonia, Latvia, and Lithuania	-10.7	-24.1	-11.0	3.3	-37.1
Moderate reformers					
Kazakhstan, Kyrgyz Republic, and Russia	-10.4	-17.4	-13.4	-16.7	-46.7
Slow reformers					
Belarus and Ukraine	-6.5	-13.3	-11.9	-22.3	-44.2

^{1/} Excludes Armenia, Azerbaijan, Georgia, Moldova, and Tajikistan involved in armed conflicts, and Turkmenistan and Uzbekistan with large natural resource exports relative to the size of their domestic economy.

and thus postponed the decline in output compared with the Baltics, while relatively strong reform efforts led to larger initial output losses than for the slow reformers.

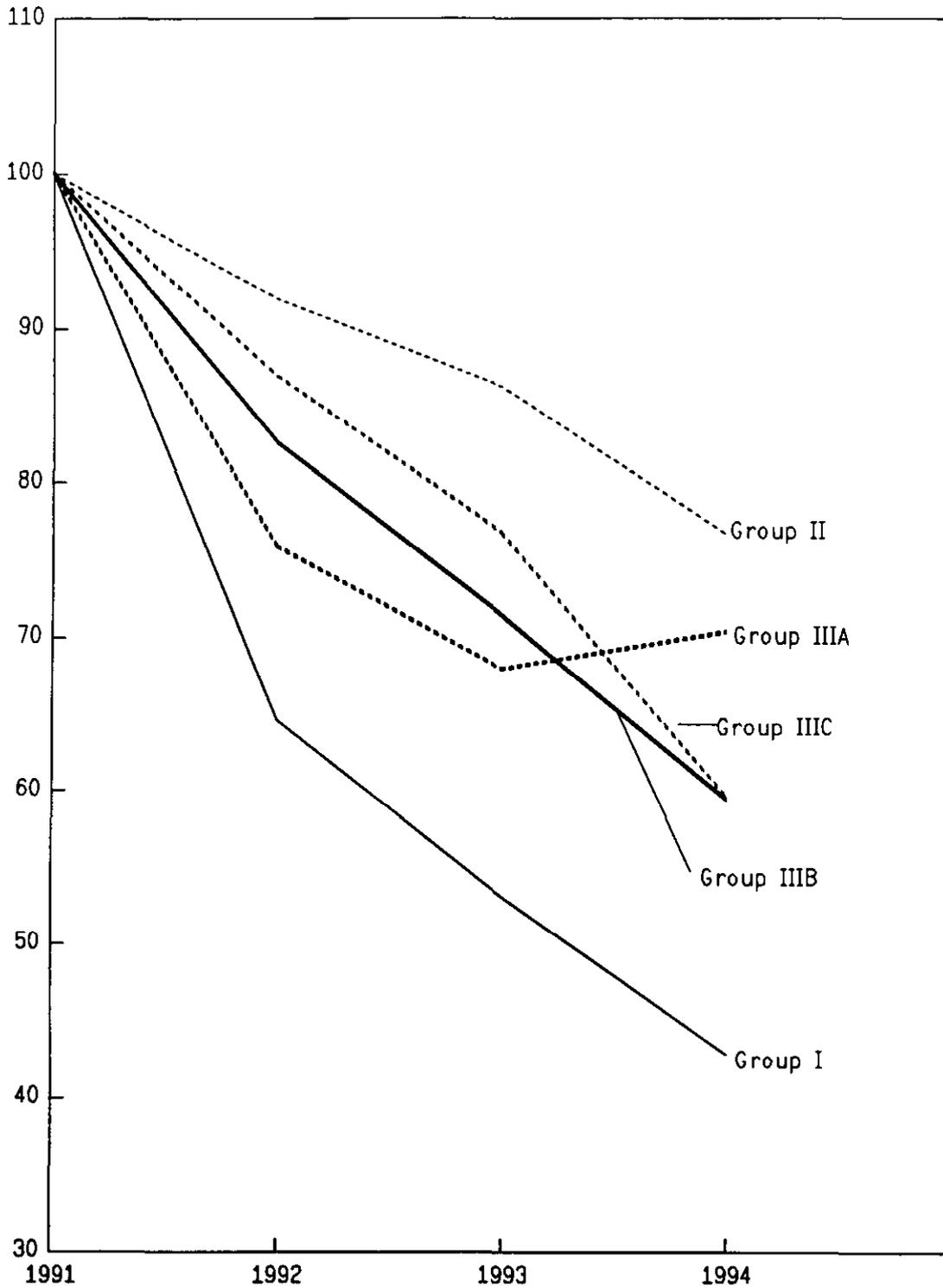
Moreover, it does not appear that countries which have delayed liberalization and stabilization measures have been able to reduce the magnitude of *cumulative* output decline. In fact, the opposite may have been the case. Early eastern European reformers such as Poland, Hungary, and the Czech Republic have recorded lower total declines in output than countries such as Bulgaria and Romania, which have had higher inflation and are still undertaking liberalization measures (Chart I.2); the same is true when the Baltic states are compared with Russia and other FSU countries.

In the countries of the region, systemic reform promoted improvements in inventory management, and this in turn also had a dampening effect on output in the short run. Inventory levels were excessively high under the command system with its emphasis on forced growth, a production structure unadjusted to user requirements and rates of interest administratively held at artificially low levels. There are problems of measuring inventories under high inflation in the countries of the region, but it appears that there were downward adjustments in the levels of inventories in the fast reforming countries of the Baltics (see tabulation below). 1/ 2/ For example, in Estonia, stocks decline by more than 6 percent of GDP in 1992. Although the downward adjustment in the historically high level of inventories could be expected to contribute to improvements in the efficiency of resource allocation in the medium- to longer-run, its effect on aggregate output in the short run was unambiguously negative. Thus, in the three Baltic countries on the average, stock decumulation is estimated to have contributed about 7 percentage points to the 11 percent decline in GDP in 1993. By contrast, stocks continued to be accumulated in slowly reforming countries, where enterprises were reluctant to adjust their work force and continued to produce and hoard goods for which demand had disappeared.

1/ Direct evidence for structural change--including moves from large to small firms, state to private sector, and industry to services--and the consequent improvements in productivity and efficiency have to rely on micro-level disaggregated data. Thus, a comparison of the pace of structural change with the pace of reform is beyond the scope of this paper.

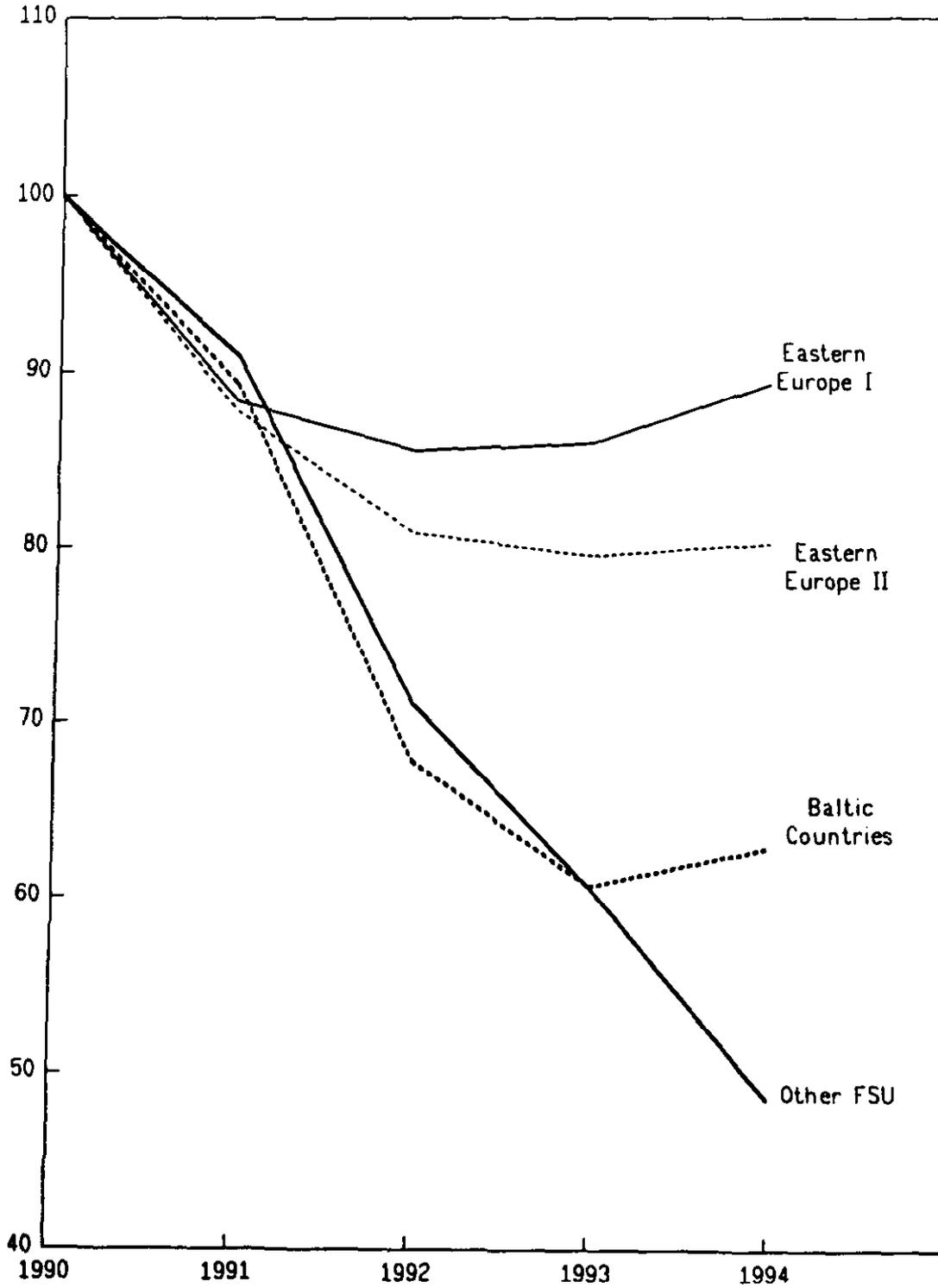
2/ There is evidence that a substantial share of recorded stockbuilding represents revaluation of existing stocks rather than the physical accumulation of inventories, leading to serious overestimation--particularly in periods of high inflation.

CHART I.1
The Baltics, Russia and other FSU Countries:
Real Gross Domestic Product, 1991-1994
(1991=100)



Group I: (Conflict states) Armenia, Azerbjn., Georgia, Moldova, Tajikstn.
Group II: (Natural resource exporters) Turkmenistan and Uzbekistan.
Group IIIA: (Fast reformers) Estonia, Latvia, and Lithuania.
Group IIIB: (Moderate reformers) Kazakhstan, Kyrgyz Republic, and Russia.
Group IIIC: (Slow reformers) Belarus and Ukraine.
Source: WEO data and staff estimates.

CHART 12
Eastern Europe, the Baltics, and other FSU Countries
Real Gross Domestic Product, 1990-1994
(1990=100)



Eastern Europe I = The Czech Republic, Hungary, Poland

Eastern Europe II = Bulgaria, Romania

Source: WEO data and staff estimates

Gross Fixed Investment and Stock-building, 1990-93 ^{1/}

(Percent of GDP)

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Estonia				
Fixed investment	19.6	22.1	22.7	25.1
Changes in stocks	-0.6	-8.5	-6.8	-0.3
Latvia				
Fixed investment	...	...	12.6	13.2
Changes in stocks	...	...	14.4	-0.2
Lithuania				
Fixed investment	31.8	29.0	16.1	17.5
Changes in stocks	6.2	5.3	6.1	-1.5
Russia				
Fixed investment	30.1	25.1	19.1	21.3
Changes in stocks	1.5	14.0	15.8	5.5

The available data on investment are consistent with the view that the aggregate output decline has been exacerbated by sluggishness of investment in new sectors. ^{2/} Virtually every country has recorded large falls in real gross capital expenditure, both in levels and as a percentage of GDP (Tables I.2 and I.3). ^{3/} Moreover, these figures appear to mask an even more significant deterioration in fixed capital investment, since available data indicate a sharp increase of about 30 percentage points on average between 1990 and 1992 in the share of stockbuilding in gross capital expenditure in a number of countries. ^{4/} It should also be noted that substantial private capital flight has accompanied liberalization. From virtually zero in 1990 and 1991 for the U.S.S.R. as a whole, non-official capital outflows increased to an average of more than 9 percent of GDP for

^{1/} The precision of these estimates is subject to considerable uncertainty because of valuation problems under high inflation.

^{2/} At the same time, as with production, investment activity in non-traditional sectors has likely been underrecorded in official statistics.

^{3/} While a contraction in real investment expenditure has contributed to the decline in output, it is likely that--in line with the arguments made above--much of the contraction represented lower investment in unprofitable sectors.

^{4/} Belarus, Moldova, Russia, Tajikistan, and Ukraine.

Table I.2. The Baltics, Russia, and other FSU Countries:
Real Gross Capital Formation, 1991-1994 ^{1/}

(1990=100)

	1991	1992	1993	Est. 1994
<u>Baltics</u>				
Estonia	65.9	63.9	97.6	141.5
Latvia	...	...	...	...
Lithuania	78.4	40.6	24.5	28.1
<u>Caucasus</u>				
Armenia	78.4	18.2	15.5	...
Azerbaijan	88.6	64.4	57.5	...
Georgia	94.5	39.9	31.5	...
<u>Central Asia</u>				
Kazakhstan	85.9	60.5	35.5	...
Kyrgyz Republic ^{2/}	39.1	40.7	44.8	...
Tajikistan	...	...	...	...
Turkmenistan	...	...	...	...
Uzbekistan	70.0	84.0	65.8	...
<u>Other</u>				
Belarus	109.8	87.8	72.0	...
Moldova	...	...	...	...
Russia	107.8	79.5	48.5	45.0
Ukraine	98.4	88.4	64.1	...
Average (unweighted)	83.3	60.7	50.7	...

Sources: Data provided by authorities; and staff estimates.

^{1/} Except where shown, figures include changes in stocks.

^{2/} Figures shown are net of stockbuilding.

Table I.3. The Baltics, Russia, and other FSU Countries:
Gross Capital Formation, 1990-1994 1/

(In percent of GDP)

	1990	1991	1992	1993	Est. 1994
<u>Baltics</u>					
Estonia	19.0	13.6	15.9	24.8	33.9
Latvia	...	...	27.0	13.0	21.0
Lithuania	38.0	34.3	22.2	16.0	18.0
<u>Caucasus</u>					
Armenia	23.3	20.7	10.0	10.0	...
Azerbaijan	25.0	22.3	20.8	21.0	...
Georgia	32.5	38.6	30.0	33.8	...
<u>Central Asia</u>					
Kazakhstan	33.3	32.9	26.9	18.0	...
Kyrgyz Republic <u>2/</u>	8.5	3.5	4.5	5.9	...
Tajikistan	...	...	...	...	...
Turkmenistan	...	54.4	57.5	...	...
Uzbekistan	26.6	18.8	24.9	20.0	...
<u>Other</u>					
Belarus	32.5	36.1	32.0	29.7	...
Moldova	...	...	57.6	36.8	...
Russia	31.6	39.1	34.9	26.8	27.0
Ukraine	23.0	25.7	27.8	23.5	...
Average (unweighted)	26.1	25.5	22.5	20.7	...

Sources: Data provided by authorities; and and staff estimates.

1/ Except where shown, figures include changes in stocks.

2/ Figures are net of stockbuilding.

the region in 1992, before subsiding to 5 percent of GDP in 1993. ^{1/} This acceleration may reflect the same factors which explain low investment, namely a lack of confidence in domestic policies and the risks implied by the political and economic transformation.

With regard to the relationship between developments in trade and output, declines in exports to non-FSU trading partners (Table I.4) appear to have been positively correlated with output declines across countries in 1991 (Chart I.3), reflecting the loss of traditional CMEA export markets. Export trends in 1992 are much more difficult to interpret, in part because movements in export values may have been governed by relative price movements, and in part because of statistical breaks in the series. Nonetheless, from the data on export volumes, the relationship is clear: countries that suffered smaller output declines and those even beginning to recover (Estonia, Latvia, Lithuania, and Kyrgyz Republic) are characterized by strong export volume growth. ^{2/} The strongest export performers over the period from 1992 to 1994 have been those economies that pursued a relatively rapid reform strategy (Estonia, Kyrgyz Republic, and Lithuania)--which may have promoted a greater supply response--and Uzbekistan, whose favorable resource endowment facilitated transition to Western markets. ^{2/}

The impact of systemic change in the countries of the region is evident in the differential pattern of output developments (measured by NMP) across sectors (Table I.5). The largest recorded declines have been in construction, transportation, communications and retail trade. ^{3/} The relative weakness in construction activity has likely reflected the strong declines in investment demand discussed above. The declining shares of retail trade and transportation, on the other hand, appear to reflect disruptions due to the breakup of the Soviet Union (see below), as well as widespread movement into private activity in these areas. NMP statistics do not report value-added in other services sectors; in the Baltic states,

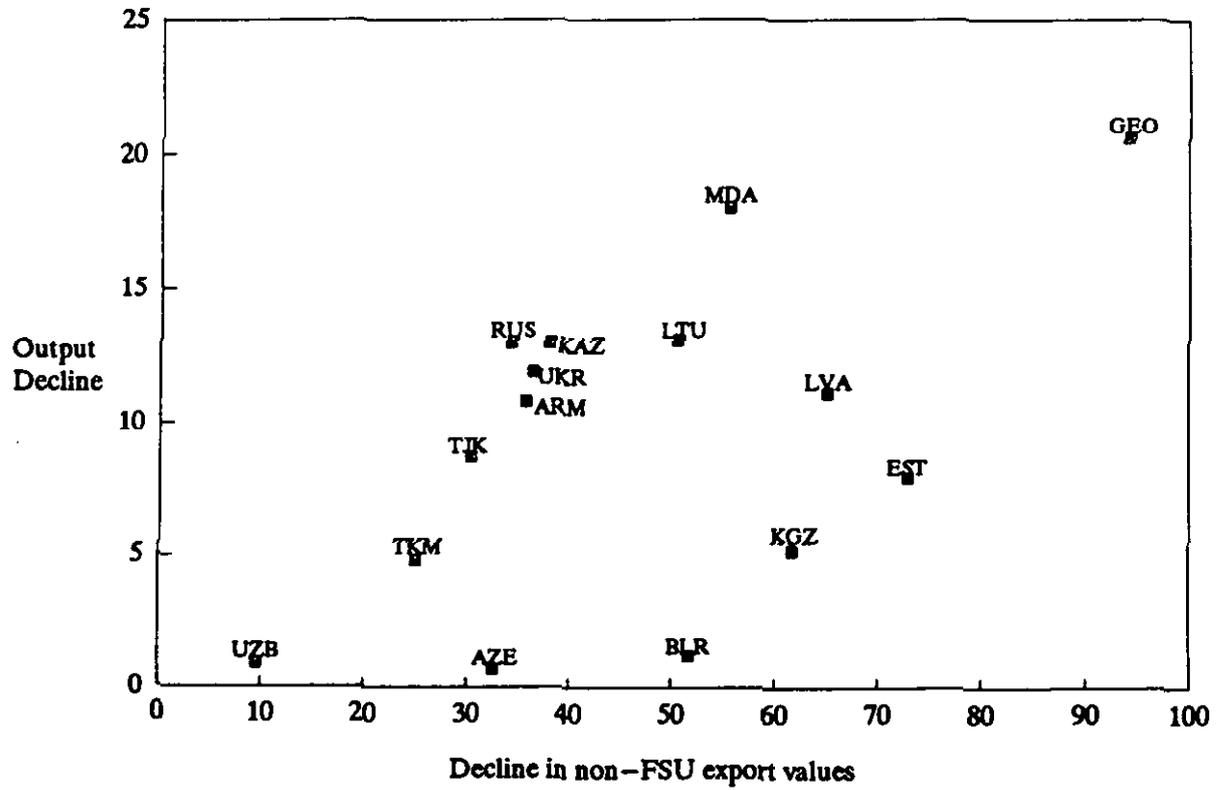
^{1/} This measure is merely suggestive, since it includes "errors and omissions" (which can reflect both unrecorded current and capital transactions); moreover, private capital flows in individual countries varied strongly, from outflows of over 50 percent to inflows of 40 percent.

^{2/} Two exceptions are: Armenia and Tajikistan. While Armenia maintained its exports by directing scarce energy supplies to industry and the production of exportables, Tajikistan's performance was related to strong market conditions in aluminum and cotton.

^{3/} Within the industrial and agricultural sectors, detailed production data also reveal substantial variations in output performance between product types (the coverage, however, is usually very spotty). Moreover, sectors which have seen strong increases in demand (financial services is one widely quoted example) tend to be outside the traditional state-owned sphere; thus, those areas with the best output performance and potential for new investment may not be captured in official statistics.

Chart I.3. The Baltics, Russia, and Other FSU Countries, 1991
Decline in Non-FSU Exports and Output

(In percent)



Sources: Data provided by authorities; and staff estimates.

Table I.4. The Baltics, Russia, and Other FSU Countries:
Value of Total Exports to Non-FSU Countries, 1991-1994

(1990=100)

	1991	1992	1993	Est. 1994
Armenia	64.2	11.0	27.0	27.0
Azerbaijan	67.4	104.4	48.0	50.6
Belarus	48.3	31.5	24.2	30.2
Estonia	27.1	126.0	244.8	304.2
Georgia	5.8	31.3	43.1	...
Kazakhstan	61.9	118.2	124.3	117.6
Kyrgyz Rep.	38.2	86.0	115.8	124.9
Latvia	34.8	107.7	113.6	96.3
Lithuania	49.4	80.5	100.6	114.6
Moldova	44.4	45.7	43.0	45.2
Russia	66.5	51.4	54.9	60.2
Tajikistan	69.6	15.7	52.2	66.5
Turkmenistan	74.9	587.2	592.7	...
Ukraine	63.5	44.8	47.2	46.2
Uzbekistan	90.4	62.5	103.5	116.7
Average (unweighted)	53.8	100.2	115.7	92.3

Sources: Data provided by authorities; and staff estimates.

Table I.5. The Baltics, Russia, and other FSU Countries:
Output by Sector, 1993 ^{1/}

{1990=100}

	Agric.	Industry	Constr.	Transport	Retail Trade	Other
Armenia	88.0	38.2	4.5	12.9	21.1	30.6
Azerbaijan	60.4	71.6	26.7	26.6	10.8	28.1
Belarus	80.3	83.5	81.4	67.7	58.6	83.0
Georgia	34.4	33.9	3.1	19.2	5.2	23.9
Kazakhstan ^{2/}	83.2	80.9	28.4	65.2	29.3	15.2
Kyrgyz Republic ^{2/}	77.4	93.6	39.0	57.9	38.7	136.4
Moldova	68.9	62.0	30.2	40.9	25.5	34.3
Russia	83.1	63.2	42.3	53.0	60.0 ^{4/}	...
Tajikistan	...	...	...	...	...	...
Turkmenistan	...	...	...	...	...	...
Ukraine	72.4	66.1	45.9	48.9	50.2	36.9
Uzbekistan	87.2	104.4	79.0	87.7	...	103.5
Average (unweighted)	73.5	69.7	38.0	47.4	29.9	54.7
Average sectoral weight in NMP	34.9	35.9	13.1	5.5	5.0	5.9
	<u>Agric.</u>	<u>Manuf.</u>	<u>Constr.</u>	<u>Services</u>		
Memorandum Items:						
Estonia ^{3/}	42.3	50.2	76.4	129.0		
Latvia	59.8	34.7	12.2	67.0		
Lithuania	...	...	...	...
Average sectoral weight in GDP	20.0	36.3	8.2	33.3		

Sources: Data provided by authorities; and staff estimates.

^{1/} Sectoral data are taken from NMP statistics, except for the Baltics, where the data come from GDP statistics.

^{2/} Data are for 1992.

^{3/} 1991=100.

^{4/} Refers to activities of officially registered enterprises only.

which report sectoral breakdowns of GDP instead of NMP, activity in the services sector has fallen far less on average than that in other sectors. 1/

(2) Factors related to the breakup of the Soviet Union

Output in these countries has also been adversely affected by disruptions associated with the dissolution of the Soviet Union.

The breakup of the U.S.S.R. into independent states contributed to a disruption of interstate commerce, which in turn is likely to have played a role in the output decline. Most states have been slow to establish full current account convertibility for external transactions, preferring initially to limit access to foreign exchange markets to official organizations, often at administratively determined exchange rates (the Baltic states, Russia, and the Kyrgyz Republic were among the earliest to liberalize current account transactions); this approach was reflected in the widespread preservation of quota and licensing arrangements for imports and exports. 2/

The lack of effective payments systems also played a role in hampering interstate, and in many cases also, domestic trade. Under the "ruble area" arrangements in 1992 and into 1993, interstate payments were forced to take place through centralized correspondent accounts, which often entailed delays in clearing of three months or more; because of disarray in exchange and financing arrangements, some payments were never carried out at all. 3/ This situation led in some cases to informal payments mechanisms (including reportedly large physical movements of cash between FSU states), barter or outright autarky, with corresponding output losses.

1/ Indeed, differences in coverage may help explain variations in recorded output performance. In a number of countries in the region, GDP is calculated on the basis of NMP estimates, with a mark-up to account for services and other activities not contained in the latter indicator. If, however, the underlying performance of services and other areas is more buoyant than in basic industrial and agricultural sectors, GDP estimates based on NMP figures may overstate the decline in output. Thus, the Baltic states--and in particular Estonia--record somewhat lower GDP declines than other countries in the region, while value-added in agriculture and industry (which make up the bulk of NMP estimates) has fallen by much more than in other states.

2/ See IMF (1994c) for a detailed discussion.

3/ IMF (1993b) provides a detailed description of payments developments.

The dramatic reduction in the volume of interstate trade is shown in Table I.6. 1/ Countries with large output declines have typically also suffered from large reductions in interstate trade, the most extreme examples being Armenia, Georgia and Tajikistan; indeed, the magnitude of decline in interstate trade has significantly exceeded that of output for virtually every country in the region.

Given the faster decline in interstate trade relative to output, it is tempting to attribute the output decline in the region mainly to the break-up of the U.S.S.R. However, the decline in interstate trade should be seen in the context of the economic transition itself. The main factor determining the pattern of interstate trade during the U.S.S.R. era was the close specialization and integration of the republican economies developed for strategic and self-sufficiency considerations in a command regime. The reorientation of trade on the basis of economic cost and benefits was a fundamental component of the reform process in the countries of the region. For example, the sharp drop in trade with FSU partners observed in the Baltics, in part, reflects the rapid redirection of their trade towards the West. Thus, while the break-up of the U.S.S.R. itself probably did contribute independently to the fall in interstate trade and the output decline in the 15 countries, much of the fall must be viewed as part and parcel of the process of systemic transformation.

b. Alternative explanations: A brief discussion

(1) Monopolistic market structures

It has been argued--particularly in the initial years of transition--that the "monopolized" production structure in transition economies may have exacerbated the output decline. Central planners favored large-scale production concentrated in a few enterprises. In order to capture monopoly rents, these enterprises may have lowered production and raised prices after liberalization. While a comprehensive review of the evidence is beyond the scope of this paper, it should be noted that empirical findings as to the concentration of industry have yielded mixed results. Recent studies, in particular, have contested the stylized characterization of a strongly monopolized production structure at the national level. 2/ In general, monopoly market power is unlikely to have played a significant role in the observed output declines, particularly since trade liberalization would undermine the ability of firms to exercise such power.

1/ Weights for interstate trade volume indices were calculated using 1990 relative prices; thus, the decline in interstate trade volume may be overstated due to the undervaluation of raw materials trade (which generally fell by less than other product categories).

2/ See, in particular, Brown, et al, (1993).

Table I.6. The Baltics, Russia, and other FSU Countries:
Volume of Interstate Trade, 1990-1993 1/

(1990=100)

	1991	1992	1993
Armenia			
Exports	54	38	16
Imports	69	24	18
Azerbaijan			
Exports	75	38	18
Imports	87	40	20
Belarus			
Exports	72	56	43
Imports	75	57	46
Estonia			
Exports	78	30	17
Imports	57	22	10
Georgia			
Exports	48	12	11
Imports	51	19	17
Kazakhstan			
Exports	86	82	55
Imports	64	70	46
Kyrgyz Republic			
Exports	107	49	24
Imports	71	40	22
Latvia			
Exports	62	49	15
Imports	50	41	13
Lithuania			
Exports	72	35	21
Imports	53	37	15
Moldova			
Exports	51	27	11
Imports	59	36	22
Russia			
Exports	79	57	37
Imports	64	55	35
Tajikistan			
Exports	68	18	10
Imports	68	22	11
Turkmenistan			
Exports	106	101	58
Imports	65	75	65
Ukraine			
Exports	71	46	28
Imports	85	67	48
Uzbekistan			
Exports	81	37	35
Imports	62	31	27
Average (unweighted)			
Exports	74	45	27
Imports	65	42	28

Source: World Bank.

1/ In constant 1990 prices.

At the same time, the regional concentration of industry may have contributed to output declines. To the extent that there were disruptions to interstate trade, as discussed in the previous section, their impact on activity would have been exacerbated if viable industries were unable to trade in inputs and components.

(2) Contractionary monetary and credit policies

Some observers have asked whether the fall in output in transition economies has been exacerbated by "unduly tight" credit policies, resulting in low levels of real liquidity, declining real working capital holdings of enterprises, and high real interest rates. ^{1/} The discussion has been motivated by the fact that real domestic money balances have generally been observed to fall in transition economies; and as discussed in Chapter II of this supplement, this decline has been particularly large for a number of states in the region. The simultaneous decline in output and money stock in real terms (Table I.7) has given the hypothesis of "unduly tight" credit and monetary policies a priori plausibility. This plausibility has been strengthened by a casual examination of a few country experiences. As of 1993, for example, Uzbekistan and Turkmenistan, which saw the lowest declines in output, also reported the highest levels of real balances. Armenia and Georgia, on the other hand, recorded by far the largest falls in both output and real money balances. However, even at the level of ordinary correlation the hypothesis fares rather poorly. For example, in the five countries of Central Asia, between 1992 and 1993, a significant slowdown in the rate of decline in real money stock was not accompanied by a corresponding improvement in output performance (see tabulation below). Similarly, in the same five countries as well as in the three countries in the Caucasus, between 1993 and 1994, a marked acceleration in the rate of decline in real money stock has not been associated with a noticeable acceleration in the decline in real GDP.

Furthermore, declining real liquidity has not necessarily reflected tight credit policies. First, a good portion of the decline in real balances in 1992 reflects the elimination through price liberalization of the monetary "overhang" accumulated in previous years. Desired money holdings at the beginning of liberalization were much lower than observed

^{1/} See for example Bruno (1992), Calvo and Coricelli (1992a and 1992b), Calvo and Kumar (1994), Vienna Institute for Comparative Economic Studies (1993).

Table I.7. The Baltics, Russia and other FSU Countries:
Real Domestic Money Stock, 1990-1994 1/

(1988 average=100)

	1990	1991	1992	1993	Est. 1994
<u>Baltics</u>					
Estonia	...	136.0	23.2	26.6	26.4
Latvia	...	155.6	34.8	27.2	34.4
Lithuania	...	109.7	21.8	11.7	15.0
<u>Caucasus</u>					
Armenia	...	109.9	23.5	10.3	1.4
Azerbaijan	...	152.1	50.9	42.0	14.2
Georgia	...	129.3	31.4	17.6	3.3
<u>Central Asia</u>					
Kazakhstan	...	137.7	26.4	17.8	4.3
Kyrgyz Republic	...	129.3	36.2	17.2	7.4
Tajikistan	...	108.8	33.4	29.1	13.1
Turkmenistan	...	140.5	91.7	129.1	16.1
Uzbekistan	...	129.7	55.0	65.3	...
<u>Other</u>					
Belarus	...	121.0	32.5	28.2	12.7
Moldova	...	154.8	32.0	19.6	12.8
Russia	...	152.4	39.6	28.7	24.2
Ukraine	...	129.0	43.4	26.2	12.3
Average (unweighted)	134.6	133.1	38.4	33.1	14.1

Sources: Data provided by authorities; and staff estimates.

1/ Annual average level of real balances.

Real Money Stock and GDP at Constant Prices
(Average annual percentage changes)

	<u>1992</u>	<u>1993</u>	<u>1994</u>
<u>Baltics</u> (Estonia, Latvia, and Lithuania)			
Real money stock	-80.2	-17.8	18.0
Real GDP	-24.1	-11.0	3.3
<u>Caucasus</u> (Armenia, Azerbaijan, and Georgia)			
Real money stock	-73.6	-39.2	-77.9
Real GDP	-40.0	-18.8	-19.4
<u>Central Asia</u> (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan)			
Real money stock	-62.9	-7.7	-75.1
Real GDP	-15.8	-13.6	-14.6
<u>Others</u> (Belarus, Moldova, Russia, and Ukraine)			
Real money stock	-73.2	-29.8	-39.6
Real GDP	-18.7	-11.1	-20.5

levels; the real money stock in the U.S.S.R. was 35 percent higher in 1990 than it had been in 1988, despite the fact that output had already begun to fall. 1/ Second, the lines of causality between output and real balances run in both directions. Output could have fallen because of an ex-ante decline in real liquidity; on the other hand, the demand for real balances is likely to have fallen as a result of the output decline.

1/ The subsequent decline in the real money stock beginning in 1992, however, decreased real holdings not only relative to 1990 but also to 1988 or even 1982 levels; thus, the decline was probably greater than could be explained by the "money overhang" alone (see Cottarelli and Blejer 1992 for estimates of the monetary overhang and forced saving in the Soviet Union). On the other hand, while there is no agreed theory as to whether the demand for real transactions balances (for a given level of output) should be higher or lower in a market economy compared to a planned regime, it is almost certain that the real demand for money as an *asset* fell substantially after 1991, as increased access to both foreign and non-monetary domestic assets caused a shift out of domestic money balances--particularly as inflation accelerated through the end of 1992 and beyond (see the discussion of capital flight above).

Third, substantial declines in real money balances were reported both in countries which undertook monetary tightening and those which did not. In fact, the largest declines were in countries with very high rates of growth of money in nominal terms (e.g., Armenia and Georgia), while the only countries where real balances rose were those which successfully achieved monetary stabilization (i.e., the Baltic states), suggesting that declining real money balances were the result of loose, rather than tight monetary and financial policies (see tabulation below).

Fourth, there has been little correlation across countries between the decline in output and the observed level of real interest rates (Chart I.4); while high positive rates of return were associated with strong declines in output in Moldova, Russia, and Ukraine, the decline in output accelerated

Money and Prices
(percent changes)

	<u>1992</u>	<u>1993</u>	<u>1994</u>
<u>Baltics</u> (Estonia, Latvia, and Lithuania)			
Real money stock	-80	-18	18
Nominal money stock	100	153	71
Inflation	1,013	203	52
<u>Caucasus</u> (Armenia, Azerbaijan, and Georgia)			
Real money stock	-74	-39	-78
Nominal money stock	118	967	1,178
Inflation	1,162	2,635	8,309
<u>Central Asia</u> (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan)			
Real money stock	-63	-8	-75
Nominal money stock	255	911	220
Inflation	933	1,540	1,355
<u>Others</u> (Belarus, Moldova, Russia, and Ukraine)			
Real money stock	-73	-30	-40
Nominal money stock	266	808	362
Inflation	1,172	1,877	915

under strongly negative real rates in Georgia, Belarus, and Turkmenistan. In the Baltic states, moreover, high real interest rates were accompanied by relatively stable or even increasing output. ^{1/}

Finally, there is little evidence in favor of the perceived trade-off between output growth and disinflation in the transition economies of the Baltics, Russia and other FSU states (Chart I.5). ^{2/} Ukraine has experienced much higher inflation than Russia, while output declines in the two countries have been roughly of the same orders of magnitude. Furthermore, growth has resumed in the three Baltic states, which have successfully brought inflation down.

3. Output recovery and growth

a. Determinants of future growth

The above discussion suggests that several factors are likely to play an important role in determining future growth prospects:

(i) To the extent that the declines in output have been driven by the unavoidable transitional costs of systemic change, recovery in aggregate output will, of course, begin as soon as growth in new industries and services and in the private sector exceeds the decline in traditional industries and the state sector. In this sense, the speed of recovery will depend closely on the speed of sectoral adjustment and change. In particular, the factors governing the pace of investment in the new sectors will be crucial to the recovery of aggregate output. *Ceteris paribus*, we would thus expect recovery to be enhanced by stabilization, privatization, and improvements in the legal infrastructure as well as in financial intermediation.

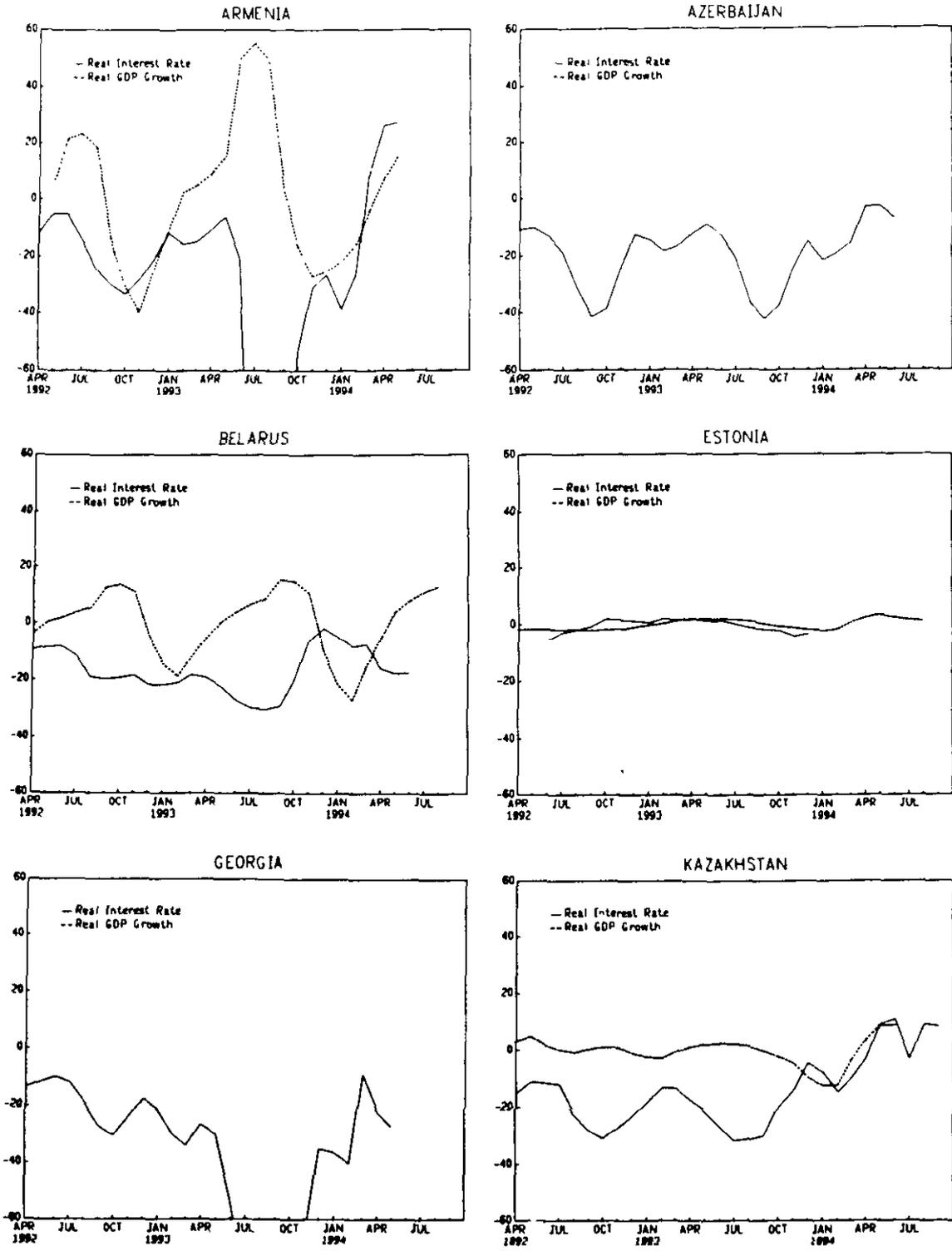
(ii) At the same time, to the extent that the decline in output is due to political disruptions (including interstate trade and payments problems) and macroeconomic factors, there may be scope for recovery across all sectors, including the traditional sectors. The removal of trade restrictions and regularization of payments mechanisms will induce some revival in output, as will the end of conflicts and the renewal of economic ties in countries now at war.

^{1/} Berg and Blanchard (1992) provide an additional argument; empirical evidence in Poland shows that inventories accumulated in the industries where output was declining; if output were falling due to decreases in real credit, one would expect to see output declines in those industries where inventories were being run down.

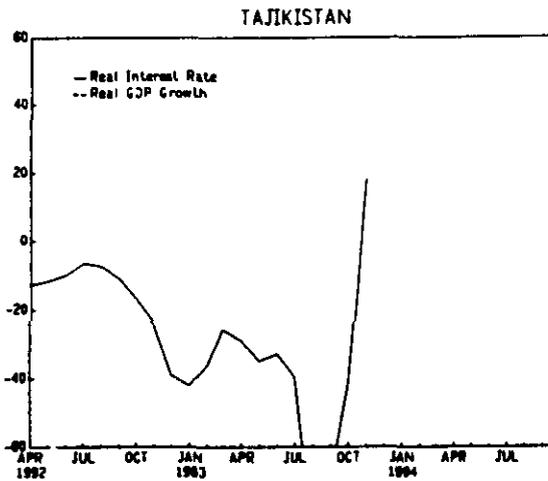
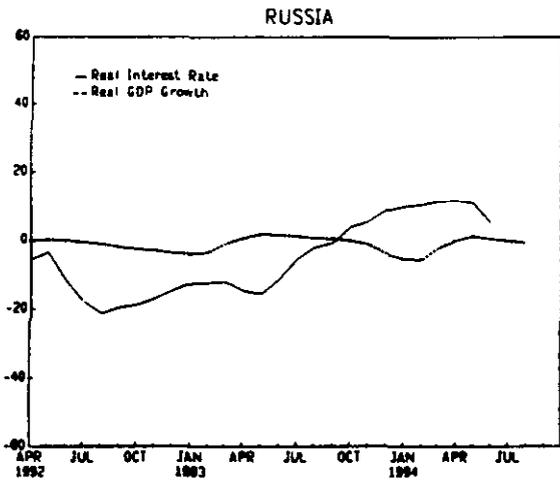
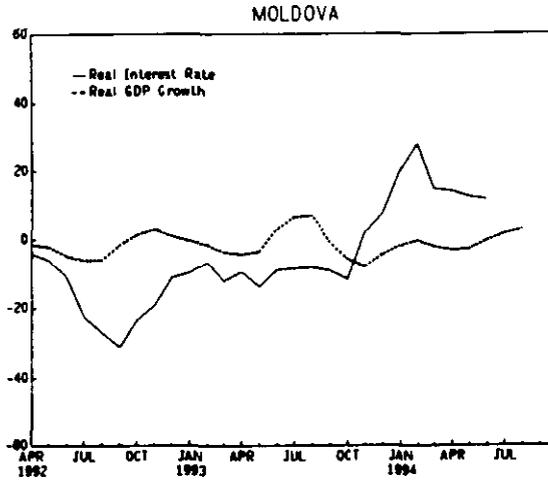
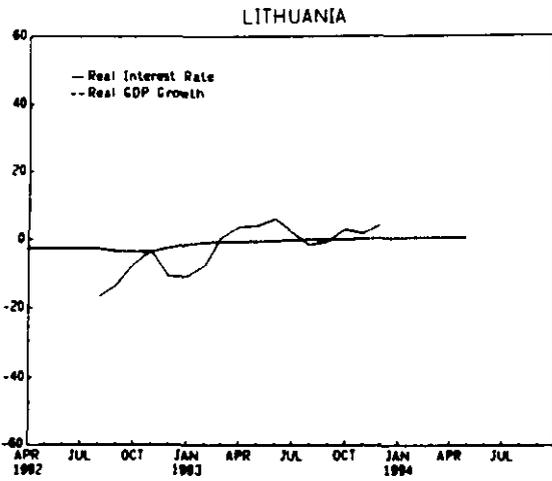
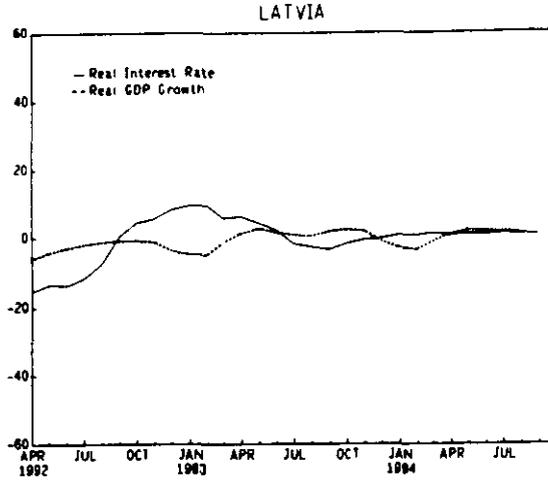
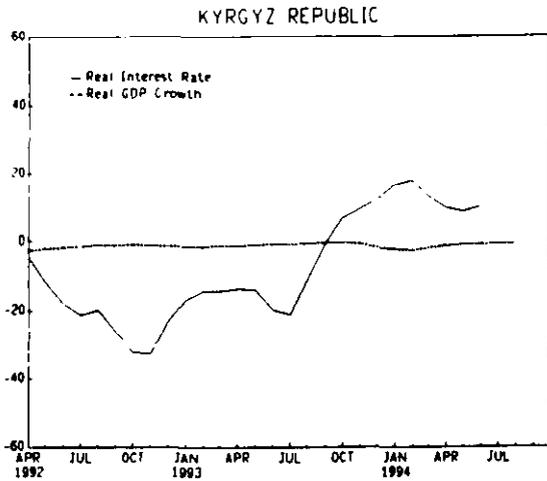
^{2/} See Koen and Marrese (1995) for a discussion of the econometric evidence for Russia.

CHART No 14

Real Interest Rates and Real GDP Growth



Real Interest Rates and Real GDP Growth



Real Interest Rates and Real GDP Growth

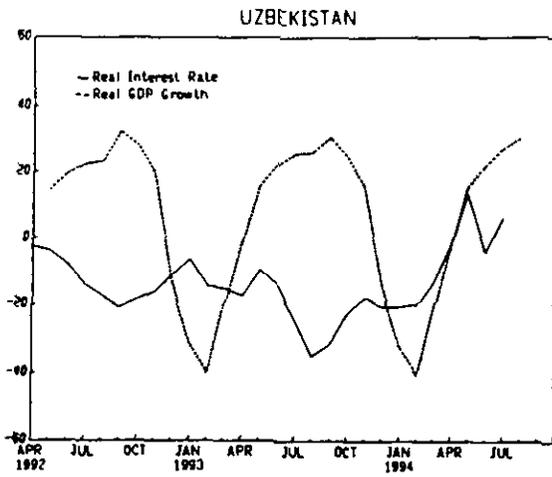
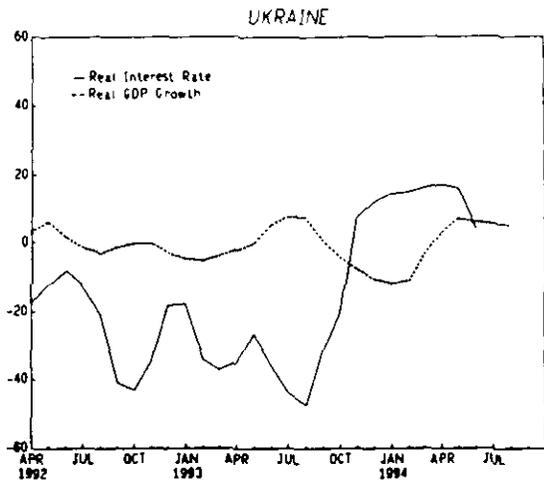
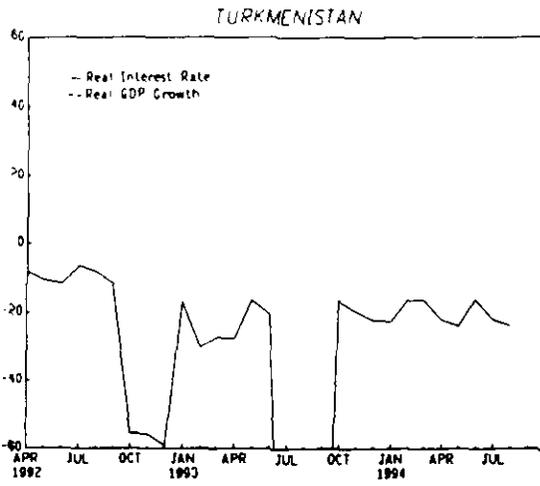
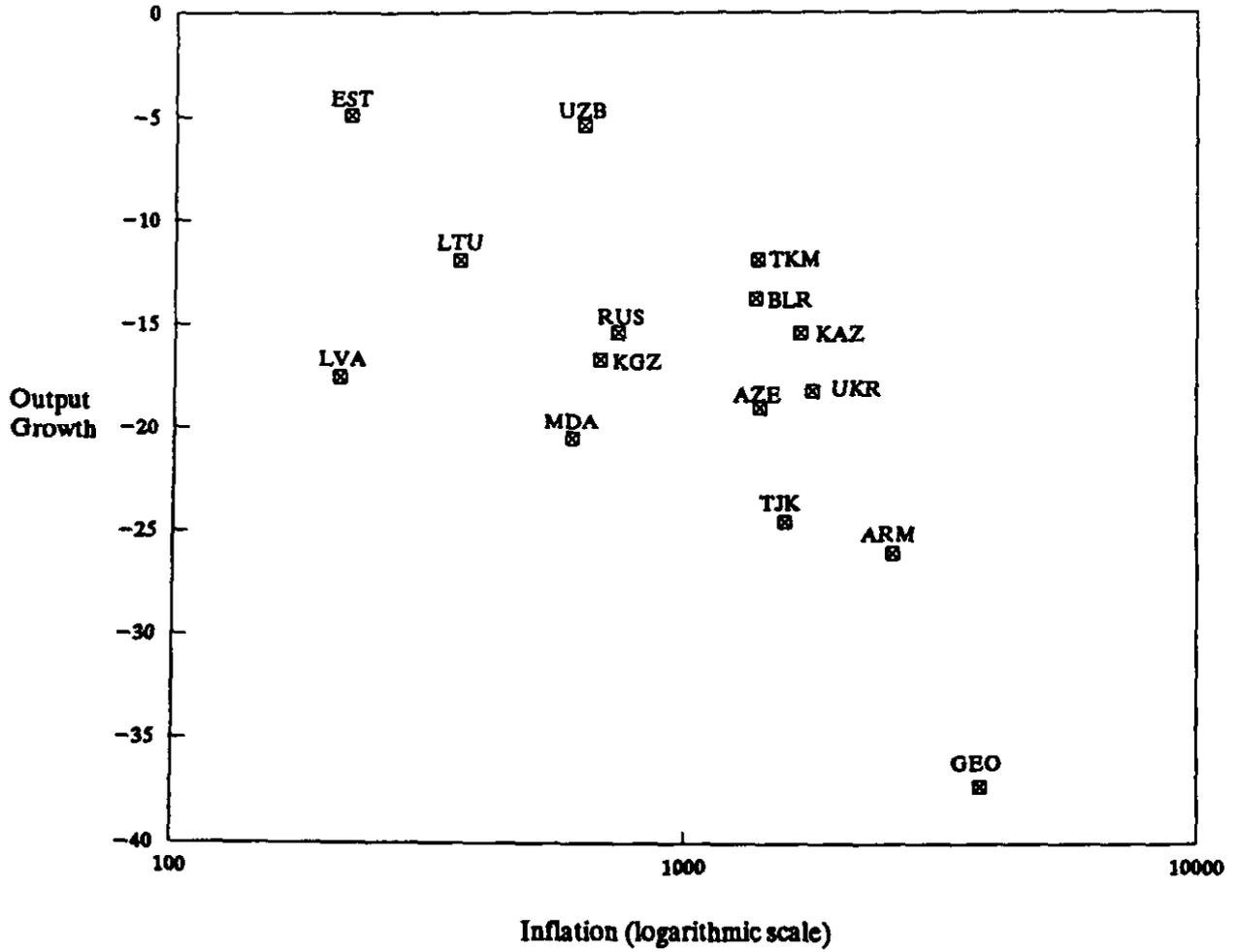


Chart I.5. The Baltics, Russia, and Other FSU Countries:
Inflation and Output Growth, 1992-1994 1/



Sources: Data provided by authorities; and staff estimates.

1/ Average annual percent changes in retail prices and real GDP.

b. Some tentative evidence from Central Europe and the Baltics

It is still early for there to be solid evidence on the resumption of growth in transition economies. The path of output in both central and eastern European transition economies and the Baltic economies has not been characterized by a strong rebound in production in traditional sectors; rather, initial declines have been followed by relative stabilization and finally by moderate growth after a lag of about a couple of years (Chart I.2; see also Tables I.1 and I.8). In those countries which have achieved an output turnaround, growth rates have been on the order of 2 percent to 6 percent per annum. Nevertheless, the following observations can be made:

First, a striking feature of the output performance of transition economies is that few countries have achieved a resumption of output growth without first bringing down inflation to low single digit levels on a monthly basis. Among the five central European countries included here, all the three that have successfully stabilized--Poland, Hungary, and the Czech Republic--registered positive growth in 1994, with Poland experiencing sustained growth for three years in a row. The problem of relatively high inflation has persisted in Bulgaria, and output has continued to stagnate. Only Romania has experienced some growth while maintaining high inflation. Similarly, the only states on the territory of the former Soviet Union that resumed growing in 1994, the three Baltic countries, all have undergone successful stabilizations. On the other hand, it is also clear that stabilization is not sufficient for the resumption of growth, and that output recovery may take time even after inflation has been brought under control. For instance, Hungary and the Czech Republic experienced relatively low levels of inflation for about two years before the resumption of growth. Among the countries in the FSU region, Moldova and the Kyrgyz Republic may by now be considered as successful stabilizers, but as yet growth remains elusive.

Second, where new growth has been observed in central and eastern Europe, the recovery has generally been accompanied by a rise in real gross capital formation (Table I.8). The observed increases have typically been undramatic, but they may mask a more decisive recovery in fixed capital investment to the extent that the share of stockbuilding in recorded investment tends to fall with a reduction in inflation. Nevertheless, higher capital formation may be more a symptom of recovery and of improvement in the investment climate, rather than an *explanation* of output growth in the short run. That said, it would be a prerequisite for sustainable growth, and hence the transition, over the longer run. Apart from the problem of inadequate incentives, one of the major problems behind the economic decline in the last decade or so of the former socialist economies, including the U.S.S.R., was low productivity stemming in part from the obsolescence of capital and technology. While depreciation of the old capital stock inherited from the command regime may continue to dampen the effect of *new* investment on net capital formation in a statistical

Table I.8. Eastern European Countries in Transition:
Selected Indicators, 1990-1994

	1990	1991	1992	1993	Est. 1994
Bulgaria					
Real GDP (1990=100)	100.0	28.3	83.3	79.8	79.8
Gross capital formation (percent of GDP)	30.4	27.9	19.7	15.8	20.1
Inflation (percent changes) <u>1/</u>	14.8	333.5	82.0	72.8	96.0
Czech Republic					
Real GDP (1990=100)	100.0	85.8	80.1	79.9	81.9
Gross capital formation (percent of GDP)	28.6	29.8	24.0	17.0	21.3
Inflation (percent changes) <u>1/</u>	9.6	56.5	11.1	20.8	10.0
Hungary					
Real GDP (1990=100)	100.0	88.5	84.7	82.7	85.2
Gross capital formation (percent of GDP)	25.4	22.6	19.5	22.6	22.2
Inflation (percent changes) <u>1/</u>	28.9	35.0	23.0	22.0	19.0
Poland					
Real GDP (1990=100)	100.0	92.4	94.8	98.4	104.1
Gross capital formation (percent of GDP)	29.1	19.9	15.2	15.6	15.3
Inflation (percent changes) <u>1/</u>	585.9	70.3	42.9	35.4	33.2
Romania					
Real GDP (1990=100)	100.0	87.1	78.3	79.2	81.1
Gross capital formation (percent of GDP)	30.2	28.0	32.0	30.2	32.2
Inflation (percent changes) <u>1/</u>	4.7	161.1	210.3	256.0	136.0

Sources: Data provided by authorities; and staff estimates.

1/ Reflects change in consumer prices.

sense, technological progress embodied in the new investments--particularly in the emerging private sector--should provide one of the major growth stimuli to these transition economies. The pick-up in gross capital formation seems to have not only begun in the leading countries of the region, namely the Baltics, but also appears to have been more pronounced than in the central European countries (Tables I.3 and I.8).

4. Conclusions and policy implications

The findings of this paper may be summarized as follows:

a. In addition to region-specific problems such as trade disruptions and war, the output declines in the Baltics, Russia, and other FSU states appear to be primarily associated with structural changes and sectoral adjustments which accompany the transition to a market economy and as such an inevitable part of the transition process. The evidence suggests that countries attempting a gradual strategy have not been able to reduce the cumulative output cost of transition; instead, the principal effect of such a strategy appears to be a delay in the resumption of growth.

b. Output recovery has so far almost always been preceded by stabilization, suggesting that controlling inflation is an important precondition for recovery. On the other hand, there have been lags between stabilization and the resumption of growth of up to two years.

These findings suggest that bold and rapid stabilization, liberalization and reform measures are indeed conducive to a sustained recovery of economic activity. In particular, improvements in the legal infrastructure and the development of financial markets are likely to contribute to the new investments that are needed for growth over the longer term.

II. The Behavior of Inflation and Velocity ^{1/}

1. Introduction

This chapter examines the behavior of inflation and broad money velocity in the Baltic countries, Russia, and other states of the former Soviet Union during the transition period to date. Over the 1992-94 period as a whole, the path of inflation has closely tracked the rate of growth of monetary aggregates. In many states, however, there has been growing concern over substantial increases in velocity and declining levels of real money balances, which have been reflected in intervals of strong divergence between rates of inflation and monetary expansion. Proposed explanations for these inflation and velocity movements have included "crises of confidence" in the domestic currency as well as independent inflationary pressures due to import price increases or domestic price liberalization.

Of particular interest in this study is whether movements in real money balances and velocity have been driven by shifts in the underlying demand for real money holdings or by other factors. A review of the available data suggests that money demand movements have been important in some cases; however, for many countries, independent factors such as exogenous import price increases or adjustments in administered prices may have played a key role. Moreover, the response of inflation to changes in the stance of monetary policy has often been slow.

For those countries which experienced large increases in velocity and declines in real money balances, subsequent reversals have been achieved through a firm tightening of monetary policies and the establishment of positive real rates of return to domestic monetary assets. These policies reduced inflation, leading to an eventual increase in confidence and rising demand for real balances. The containment of wage pressures may also have facilitated reductions in velocity, as countries where initial inflationary shocks fed into a cycle of high wage growth experienced greater difficulty in controlling inflation and restoring confidence.

The chapter is organized as follows: Section 2 reviews the behavior of inflation and velocity in the region since 1992, with particular emphasis on the role of velocity movements in stabilization efforts under Fund-supported programs. Section 3 examines possible explanations for the observed increases in velocity as well as the diverging performance in various countries. Section 4 discusses policy responses to inflationary and money demand shocks and reviews country experiences in achieving subsequent recovery in real money balances. Section 5 summarizes the findings of the previous sections and presents lessons and implications for future stabilization efforts.

^{1/} The analysis in this chapter draws heavily on numerous staff reports on individual countries in the region over the period covered.

2. The behavior of money, income, and prices, 1992-94

The inflation experience of the Baltics, Russia, and other FSU states for the April 1992 to September 1994 period is presented in Tables II.1 and II.2. 1/ Countries fall into three basic categories: the first, comprising the Baltic states, suffered high inflation early on but then succeeded in stabilizing over the course of 1993. The Kyrgyz Republic, Moldova, and Russia form a second group where inflation was brought under (at least) moderate control during the first three quarters of 1994. 2/ The remaining countries have been characterized by very high and often unstable rates of price increases, and stabilization continues to be a priority.

The behavior of inflation is related to that of the other macroeconomic variables in Table II.1 on the basis of a standard Fisher equation, whereby: 3/

$$\dot{P} = \dot{M} + \dot{V} - \dot{Y}$$

with P equal to the consumer price index, M to domestic broad money (i.e., exclusive of foreign currency holdings; the role of the latter is discussed further below), V to velocity of broad money, and Y to real GDP. 4/ 5/

Data for the two-and-a-half year period as a whole confirm that inflation in the region has been primarily a monetary phenomenon; inflation has been strongly correlated with the rate of monetary expansion in every

1/ April 1992 is chosen as the starting point in order to abstract from the large decline in real money balances associated with the elimination of monetary overhang at the beginning of that year.

2/ In Russia, inflation has since accelerated, and stabilization remains to be achieved.

3/ For rates of growth over discrete time periods, the relationship will not be exact; thus, if Δ represents the percentage change over a given discrete time period, then

$$\Delta P = \Delta M + \Delta V - \Delta Y$$

4/ For the purpose of this study, unless otherwise noted, estimates for velocity are derived as an implied index from the path of money, prices and real output, as in the above equation, instead of using direct estimates for money velocity derived from nominal GDP estimates. This is done primarily to avoid inconsistencies which arise from errors and uncertainties in nominal GDP figures, since (i) estimates of the level of nominal GDP--and thus of the level of velocity--can vary by wide margins and are unlikely to be comparable across countries; (ii) the path of the implicit GDP deflator underlying estimates of nominal GDP growth is in some cases markedly different from that of retail and wholesale price indices.

5/ Real GDP trends are not shown in Table II.1.

Table II.1. The Baltics, Russia, and other FSU Countries:
Money and Prices, 1992-1994 1/

(Average monthly percent changes)

	Domestic Broad Money	Retail Price Inflation	Broad Money Velocity 2/
Estonia	6.7	5.4	-1.3
Latvia	5.7	5.3	-0.7
Lithuania	9.3	11.6	1.3
Average	7.2	7.4	-0.2
Kyrgyz Rep.	11.3	17.0	3.9
Moldova	13.3	15.6	0.7
Russia	15.2	15.9	-0.1
Average	13.3	16.2	1.5
Armenia	24.1	38.5	8.9
Azerbaijan	17.3	23.9	5.6
Belarus	20.4	24.7	3.3
Georgia	28.6	40.3	9.1
Kazakhstan	18.7	26.8	5.5
Tajikistan	19.2	24.6	4.6
Turkmenistan	22.5	30.0	6.2
Ukraine	22.1	26.6	2.4
Uzbekistan	19.4	16.9	0.4
Average	21.4	28.0	5.1

Sources: Data provided by authorities; and staff estimates.

1/ Inflation, money, and velocity growth are calculated for the period from the second quarter of 1992 through the third quarter of 1994; Velocity is defined on the basis of real GDP and retail price movements (see text).

2/ For Azerbaijan, Georgia, Tajikistan, and Turkmenistan, because quarterly data on real GDP are not fully available, changes in velocity are proxied by rates of decline of real money balances.

Table II.2. The Baltics, Russia, and other FSU Countries:
Quarterly Changes in Macroeconomic Variables, 1992 - 1994 1/

(Percentage changes within the quarter)

	1992			1993				1994		
	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.
Estonia										
Broad money	16.7	96.1	18.1	6.1	26.7	19.1	22.0	1.1	2.7	2.5
Retail prices	29.6	55.8	21.8	9.0	5.4	6.4	11.1	20.9	5.0	7.2
Velocity	30.7	-25.5	1.9	6.0	-10.3	-8.0	-13.9	9.4	19.8	8.2
Latvia										
Broad money	16.6	59.3	1.9	5.2	32.8	21.6	23.2	4.3	14.0	7.9
Retail prices	44.8	55.9	43.7	9.8	2.3	1.1	18.7	9.2	5.0	4.1
Velocity	27.5	-4.9	45.2	-7.8	-16.0	-15.6	-3.7	-3.0	-1.3	1.0
Lithuania										
Broad money	30.5	18.9	84.8	13.8	-7.9	94.9	38.2	13.2	15.9	15.1
Retail prices	32.3	88.0	95.9	46.5	49.7	8.2	21.7	11.4	10.8	6.7
Velocity	4.8	31.4	-6.9	35.1	72.9	-41.8	-13.8	3.3	-3.1	0.8
Kyrgyz Republic										
Broad money	28.1	77.2	85.2	42.8	40.9	39.6	-	19.5	28.6	19.7
Retail prices	29.3	43.9	89.5	154.6	65.8	85.0	87.7	41.6	12.4	4.8
Velocity	6.8	-30.3	-2.9	63.1	22.6	20.9	98.9	15.9	-10.2	-12.4
Moldova										
Broad money	46.0	63.3	90.8	17.0	59.7	66.4	29.0	-2.6	72.2	15.7
Retail prices	40.5	24.7	111.9	95.2	45.6	81.0	81.9	67.6	10.7	3.7
Velocity	4.3	-38.6	4.3	70.1	-14.3	24.7	4.4	85.4	-34.7	-1.6
Russia										
Broad money	26.3	129.3	57.7	47.3	76.9	38.1	46.1	22.1	50.7	30.5
Retail prices	47.5	34.0	108.8	88.4	68.2	89.7	56.6	40.3	22.9	18.1
Velocity	23.6	-43.8	9.6	18.2	1.7	35.6	11.6	0.8	-13.7	-11.5
Armenia										
Broad money	11.4	59.2	34.7	73.0	69.0	83.0	183.6	240.1	65.3	20.2
Retail prices	94.5	21.3	101.8	120.4	81.9	58.9	1626.2	212.5	185.8	8.2
Velocity	87.5	43.4	-74.1	44.7	59.7	175.2	43.7	-23.9	190.4	...
Azerbaijan										
Broad money	34.0	33.5	62.2	108.0	157.4	28.9	39.9	51.2	51.2	63.9
Retail prices	42.9	36.6	130.5	93.9	78.3	43.2	176.0	111.6	105.4	37.7
Velocity	...	...	...	...	...	...	...	...	...	...
Belarus										
Broad money	84.8	41.0	85.6	73.6	83.0	51.0	40.1	115.6	80.1	91.2
Retail prices	49.6	33.9	78.1	76.0	88.4	109.6	201.3	84.2	97.8	143.7
Velocity	-8.3	15.2	13.0	-45.2	5.8	68.8	166.8	-59.1	15.6	71.1

Table II.2 (concluded). The Baltics, Russia, and other FSU Countries:
Quarterly Changes in Macroeconomic Variables, 1992 - 1994 1/

(Percentage changes within the quarter)

	1992			1993				1994		
	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.
Georgia										
Broad money	17.2	121.9	46.4	62.0	139.4	99.9	230.5	88.4	238.1	52.7
Retail prices	41.6	41.9	72.2	104.8	133.8	132.8	581.0	337.0	325.4	340.9
Velocity	...	...	...	...	...	...	...	...	...	...
Kazakhstan										
Broad money	59.6	98.6	87.0	69.2	109.2	59.5	21.0	56.3	69.9	46.6
Retail prices	98.7	45.1	106.5	133.1	66.2	102.8	188.8	107.9	157.3	55.9
Velocity	53.7	-24.1	-4.6	30.0	-6.5	21.6	94.8	1.6	66.5	...
Tajikistan										
Broad money	79.8	65.1	39.6	88.9	87.9	166.5	61.7	-8.9	...	...
Retail prices	25.0	46.6	31.0	99.3	157.1	157.1	465.3	-42.3	...	...
Velocity	...	...	...	...	...	...	...	...	...	...
Turkmenistan										
Broad money	...	61.7	178.9	184.4	82.8	76.4	1.2	104.4	64.6	46.4
Retail prices	...	38.1	31.2	218.2	122.8	62.9	752.0	97.7	75.0	109.8
Velocity	...	...	...	...	...	...	...	...	...	...
Ukraine										
Broad money	103.2	56.2	91.6	106.1	80.8	206.6	45.0	51.4	61.4	72.0
Retail prices	55.7	46.3	85.3	172.4	170.8	201.9	360.5	41.9	15.9	12.4
Velocity	-15.1	-5.9	-17.9	17.2	23.0	19.2	131.8	-3.4	-9.7	-25.9
Uzbekistan										
Broad money	...	...	...	23.4	116.6	94.9	69.9	77.6	36.3	90.8
Retail prices	...	...	...	61.1	62.1	43.6	162.7	76.2	85.7	4.5
Velocity	...	...	...	-70.6	-9.4	59.0	77.7	-77.6	106.3	53.7

Sources: Data provided by authorities; and staff estimates.

1/ Broad money refers to domestic currency M2; velocity is defined as an index based on the methodology described on page 1.

country. As a group, the Baltic states registered both the lowest rates of broad money growth over the period (average monthly rate of 7 percent) and the lowest inflation (7 percent). The intermediate group, which experienced somewhat higher monthly inflation (16 percent), also recorded higher monetary expansion on average (13 percent). The remaining countries in the region on average recorded significantly higher monthly money growth (21 percent) and inflation (28 percent).

Over the period as a whole, changes in the velocity of broad money have, in general, been much smaller than those in prices and money (Table II.1). Notably, velocity tended to be more stable the lower the inflation rates that were recorded. In the Baltic states, velocity was virtually unchanged on average, while in the intermediate inflation group, velocity rose at an average monthly rate of 1 1/2 percent during the period. In most high inflation countries, velocity rose significantly--at an average monthly rate of 5 percent. In a few cases, the increases in velocity corresponded to extreme declines in the level of domestic real money balances. In Armenia and Georgia, for example, an average *monthly* increase of broad money velocity of 9 percent implied a decline in the real stock of broad money to a small fraction of the level in April 1992 by the end of the period (see tabulation below). Within this group, only in Uzbekistan, was velocity roughly unchanged over the period.

An examination of quarterly data reveals a considerably greater degree of variability in the short-term relationship between money and prices. Differences of 15 to 30 percentage points between average monthly rates of inflation and money growth may be observed in a number of countries. Divergences in inflation and rates of monetary expansion have almost always been associated with corresponding movements in velocity (rather than large swings in output). ^{1/} Indeed, on a quarterly basis, changes in velocity have sometimes overwhelmed movements in money in their "explanatory power" over prices.

^{1/} Changes in velocity have accompanied not only movements in inflation and money growth but also short-term fluctuations in output. Some countries (Armenia, Belarus, Tajikistan, Turkmenistan, Uzbekistan) have registered large seasonal fluctuations in real output, while in others the recorded path of output has been smoother--although it should be noted that estimates of real output movements are tentative and subject to significant measurement errors. In any case, for those countries where recorded output exhibited seasonal behavior, there is little evidence that this seasonality affected the observed paths of broad money or retail prices; instead, there were corresponding seasonal movements in velocity.

Real domestic money stocks, as of 1994:III
(1992:II=100)

Estonia	135
Latvia	110
Lithuania	65
Kyrgyz Republic	26
Moldova	58
Russia	83
Armenia	7
Azerbaijan	23
Belarus	39
Georgia	10
Kazakhstan	17
Tajikistan	39 1/
Turkmenistan	20
Ukraine	38
Uzbekistan	167

Of particular note is the fact that movements in real money balances and velocity have generally occurred not in smooth trends, but rather in large discrete shifts; moreover, bouts of high inflation and velocity growth occurred at approximately the same time across a number of countries. During late 1993 and early 1994, velocity rose substantially (often two-to-three-fold or more) in the space of 1-2 quarters in 10 countries in the region, i.e., all except for the Baltic states, Russia and Uzbekistan (Chart II.1). 2/ In most cases, these increases in velocity were associated with a substantial acceleration in inflation, for example in Armenia, Georgia, Tajikistan, and Turkmenistan. Only in a few instances (e.g., the Kyrgyz Republic and Moldova) was the rise in velocity associated with stable inflation and a decline in the rate of monetary expansion.

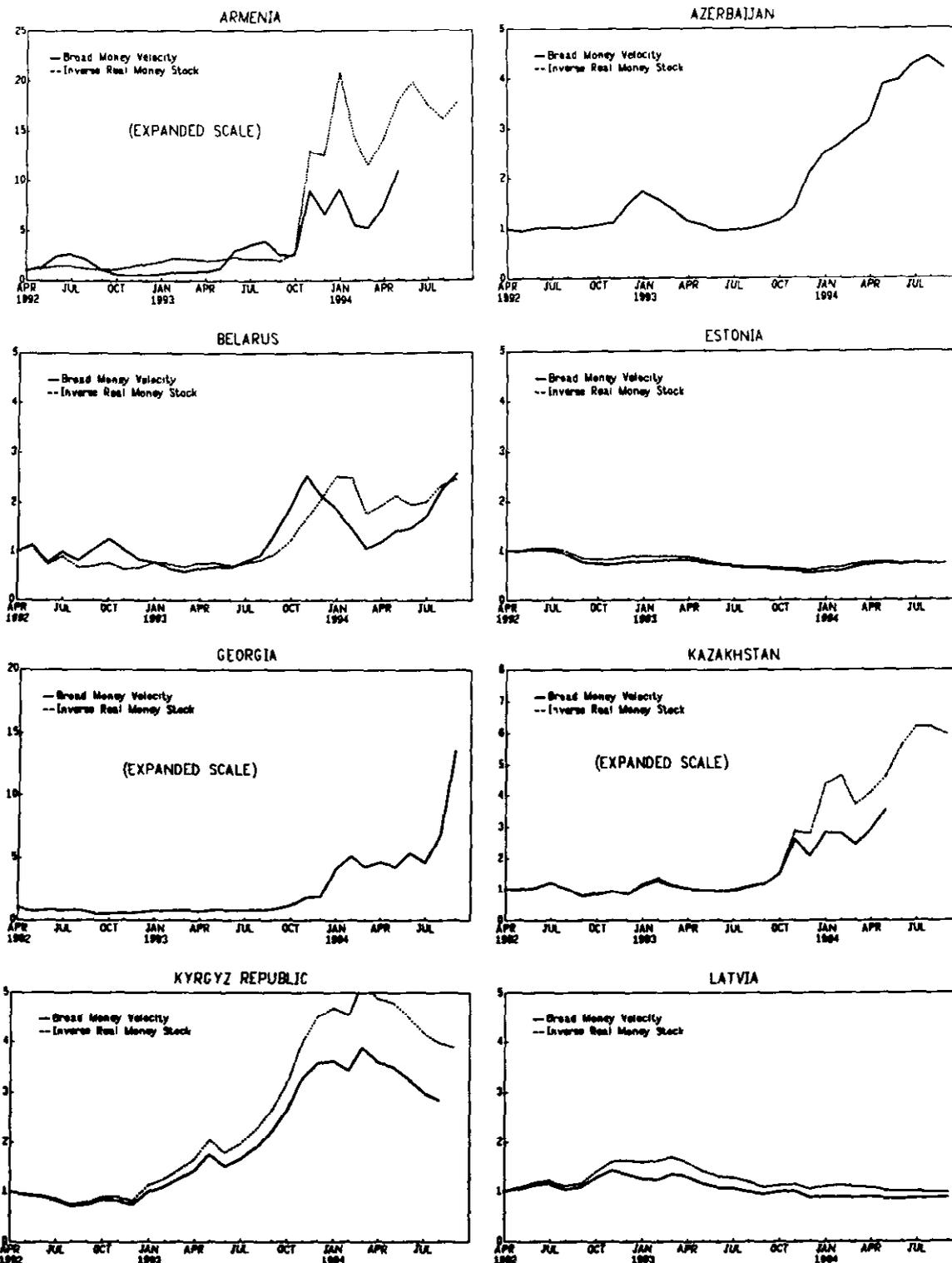
Also of interest is the protracted nature of movements in velocity and real balances in many countries; in some cases, velocity has declined only slowly following the initial increase, while in others velocity has remained at its new, higher level. Only in Lithuania and Moldova have sharp swings in velocity and real balances been followed by a quick return to previous levels.

A review of the experience of Fund-supported programs further underscores the ability of money growth and inflation paths to diverge substantially in the short term. Table II.3 shows the behavior of money, prices and velocity under thirteen arrangements (and several Fund

1/ 1994:I.

2/ Movements in velocity have, by and large, been mirrored by the behavior of real money balances.

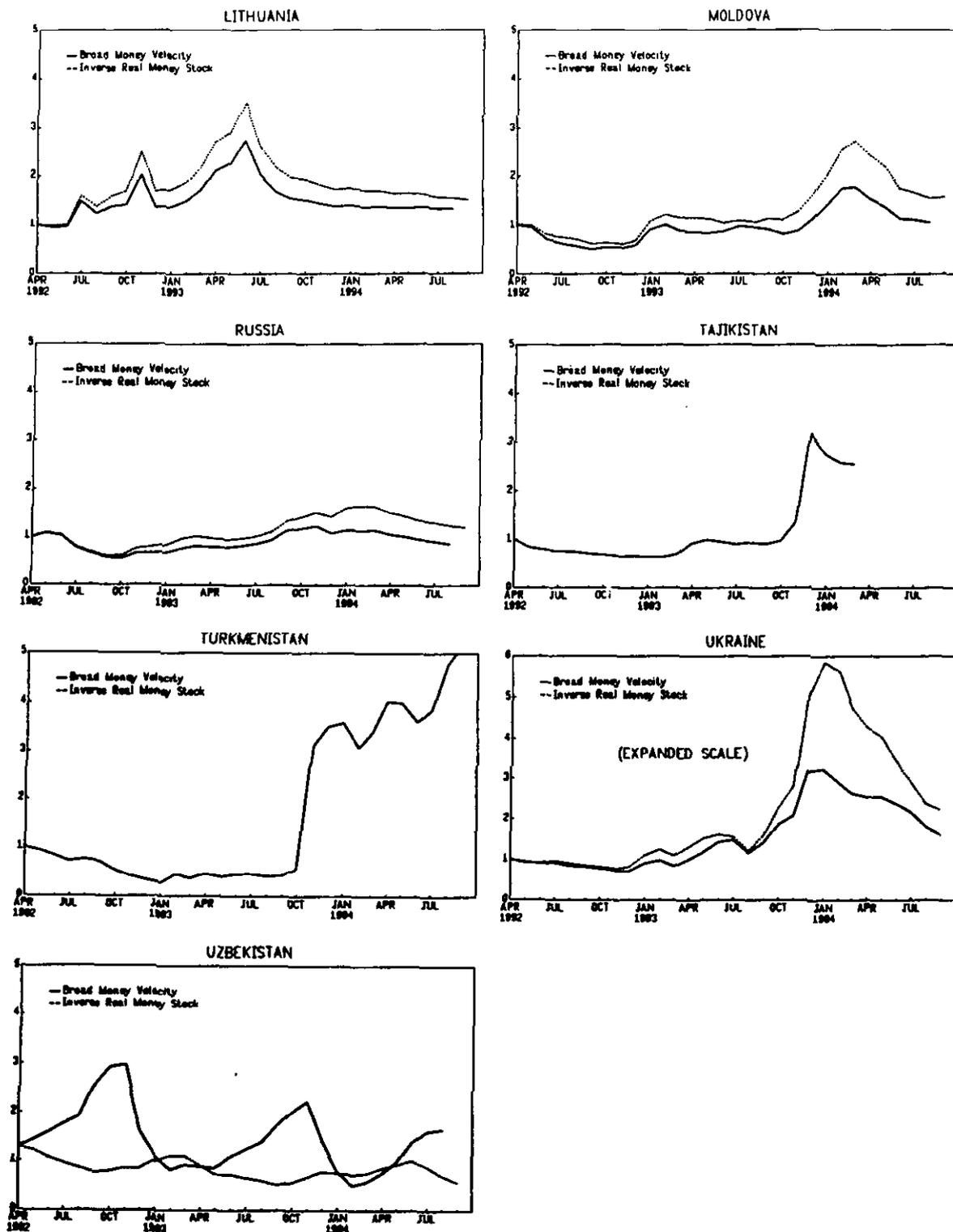
Money Velocity and Inverse Real Money Balances



Definitions:
 Money Velocity — Domestic broad money velocity, index (April 1992 = 1)
 Real Money Stock — Real stock of domestic broad money, index (April 1992 = 1)

CHART No II.1, cont.

Money Velocity and Inverse Real Money Balances



Definitions:

Money Velocity — Domestic broad money velocity, index (April 1992 = 1)

Real Money Stock — Real stock of domestic broad money, index (April 1992 = 1)

Table II.3. The Baltics, Russia, and other FSU Countries: Inflation and Money Growth,
Program Performance, 1992-1994 1/2/
(Percent changes)

	1992		1993		1993			1994		
	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.
The Baltics										
Estonia (SBA, 8/92)					Lithuania (SBA, 10/93)					
Consumer prices										
Program	18.3	13.2	4.0	1.8		8	5.5	4.5	4	
Actual	55.8	21.8	9.0	5.4		8.2	21.7	11.4	10.8	
Broad money 3/										
Program	---	---	---	---		38.7	16.1	10.4	---	
Actual	96.1	18.1	6.1	26.7		54.4	29	13.5	15.3	
Velocity										
Program	---	---	---	---		-21.3	-4.1	-1.5	---	
Actual	-28.5	1.7	4.7	-7.0		-26.5	-7.7	3.1	-2.6	
Latvia (SBA, 8/92) 4/					Russia (STF, 6/93)					
Consumer prices										
Program	31.0	22.0	10.0	5.0		60.2	36.8	26.0		
Actual	55.9	43.7	9.8	2.3		68.2	89.7	56.6		
Broad money										
Program	26.0	28.0	29.0	14.0		45.1	32.5	23.7		
Actual	57.9	14.6	6.7	25.2		81.1	41.4	44.7		
Velocity										
Program	0.0	-2.0	-12.0	2.0		4.9	14.1	-12.3		
Actual	-16.0	3.9	-11.9	-10.6		-5.3	32.9	6.6		
Lithuania (SBA, 10/92) 5/					Russia (STF, 4/94)					
Consumer prices										
Program	121.0	30.0	8.0	9.0				48.2	36.8	
Actual	88.0	95.9	46.5	49.7				22.9	18.1	
Broad money										
Program	65.0	25.0	10.0	10.0				39.0	43.7	
Actual	56.5	79.1	11.7	-8.3				50.7	27.5	
Velocity										
Program	0.0	33.0	-6.0	-2.0				2.2	3.5	
Actual	-0.6	-21.4	25.4	80.9				-23.4	6.3	

Sources: Data provided by authorities; and staff estimates.

1/ Inflation reflects within-period quarterly rate.

2/ Broad money includes foreign currency deposits, unless otherwise noted: program figure derived using accounting exchange rate; actual figure reflects actual exchange rate.

3/ Reflects domestic broad money.

4/ First two quarters are for August SBA, next two quarters are revised March SBA.

5/ First three quarters are for October SBA, last one is revised March.

Table II.3 (concluded). The Baltics, Russia, and other FSU Countries: Inflation and Money Growth,
Program Performance, 1992-1994 1/2/
(Percent changes)

	1993			1994			1993		1994		
	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.
Other FSU Countries											
Belarus (STP, 7/93)						Moldova (SBA, 11/93)					
Consumer prices						Consumer prices					
Program		57.0	25.0				57.0	14.0	10.0	6.0	
Actual		109.6	201.3				81.9	67.6	10.7	3.7	
Broad money						Broad money					
Program		51.0	70.0				23.0	3.0	9.0	19.0	
Actual		71.3	61.7				34.8	-3.0	65.5	15.7	
Velocity						Velocity					
Program		23.0	-7.0				63.0	-61.0	10.0	131.0	
Actual		4.0	30.0				8.9	107.3	-32.5	-1.6	
Kyrgyz Republic (SBA, 4/93)						Kazakhstan (STP, 7/93)					
Consumer prices						Consumer prices					
Program	33.0	20.0	14.0			48.0	31.0				
Actual	65.8	85.0	87.7			102.8	188.8				
Broad money						Broad money					
Program	10.0	15.0	19.0			26.0	17.0				
Actual	48.1	51.4	-7.0			59.7	22.4				
Velocity						Velocity					
Program	19.0	-5.0	-2.0			37.0	13.0				
Actual	12.0	11.0	100.2			10.7	90.3				
Kyrgyz Republic (ESAP, 6/94)						Kazakhstan (SBA, 1/94)					
Consumer prices						Consumer prices					
STP/SBA				15.0	15.0				57.0	20.0	7.0
Actual				12.4	4.8				107.9	157.3	55.9
Broad money						Broad money					
STP/SBA				20.0	10.0				56.0	15.0	7.0
Actual				27.3	19.6				56.3	69.9	46.6
Velocity						Velocity					
STP/SBA				...	7.0				-1.0	24.0	8.0
Actual				-3.6	-12.2				1.6	66.5	...
Moldova (STP, 9/93)											
Consumer prices											
Program		43.0	28.0	9.0	7.0						
Actual		81.0	81.9	67.6	10.7						
Broad money											
Program		90.0	20.0	-13.0	3.0						
Actual		66.4	34.8	-3.0	65.5						
Velocity											
Program		24.0	0.0	0.0	0.0						
Actual		21.5	8.9	107.3	-32.5						

1/ Inflation reflects within-period quarterly rate.

2/ Broad money includes foreign currency deposits, unless otherwise noted: program figure derived using accounting exchange rate; actual figure reflects actual exchange rate.

facilities) in eight different countries in the region. 1/ In most cases, inflation outcomes under stabilization programs exceeded program targets by wide margins, with the rate of inflation either remaining high or even accelerating during the program period. The only initial stabilization programs whose inflation targets were met or close to being met were the stand-by arrangements for Estonia and Latvia (both introduced in August 1992); in the Kyrgyz Republic, Moldova, and Lithuania, inflation was reduced as envisaged under follow-up arrangements, but the first attempts at stabilization failed. 2/

In five of the seven stabilization programs where price objectives were not attained--Belarus, Kazakhstan (1993), Kyrgyz Republic, Lithuania, and Moldova--higher-than-expected inflation occurred in the face of much lower contemporaneous rates of broad money growth, and reflected marked and unanticipated increases in velocity. In the case of Kazakhstan (1994), the poor inflation outcome was associated with both excessive monetary expansion and an unanticipated rise in velocity. Only in Russia (1993) was the poor inflation outcome mainly associated with similarly high levels of monetary expansion.

The behavior of inflation and velocity was indeed in sharp contrast to program projections. While the programs generally recognized that inflation would not respond immediately to monetary tightening, and thus projected a rise in the velocity of broad money in the first quarter of the program, velocity was subsequently expected to remain broadly stable or to decline. 3/ The projections for real money balances beyond the initial period were even smoother, as velocity was generally projected to offset

1/ While successor or second stand-by arrangements are included in the sample in the case of four countries where the reduction of extremely high inflation remained a program priority, successor stand-by arrangements for Estonia and Latvia are not included because these programs aimed at consolidating progress already made in stabilization, rather than achieving a marked reduction in inflation. Also, in order to ensure comparability with program definitions, figures for broad money velocity used when reviewing program outcomes and shown in Table II.3 are defined on the basis of nominal GDP.

2/ Under the 1994 STF-supported program for Russia, inflation objectives were achieved initially, but indications are that end-1994 inflation targets will be missed by a substantial margin.

3/ In circumstances of data unavailability and extreme changes in financial and economic structures, projections of money demand or velocity have been subject to unusually high degrees of uncertainty. Particularly at the outset of the transition period for the Baltic states and FSU region, empirical work on the demand for money in transitions was extremely limited, and did not exist for the newly-independent states. Thus, program projections were based on an analysis of recent trends and contained a significant judgmental element.

seasonal fluctuations in output. In the event, velocity rose and real balances fell sharply for several quarters in almost all of the cases where stabilization was not achieved.

3. Explaining inflation and velocity movements

We now turn to examining the possible factors underlying the observed behavior of inflation and velocity. This section focuses on those periods when large shifts in velocity and real balances and velocity occurred, while the next section examines the subsequent path of velocity and money in the region. The analysis is based on a standard aggregate demand and supply framework that provides a general depiction of the short- and long-term determinants of the rate of inflation. 1/ Under such a framework, the rate of monetary expansion determines the rate of inflation in long-run equilibrium. In the short run, however, inflation can depend on a number of other factors, giving rise to fluctuations in real money balances and the velocity of broad money. First, inflation may simply have an inertial component, resulting in a lagged response of prices to changes in monetary expansion. Second, changes in the demand for money due, for example, to changes in its underlying determinants (for example, a rise in inflationary expectations) will be reflected in movements in the velocity of broad money (i.e., short run deviations in inflation relative to the rate of monetary expansion). Third, factors such as lax wage policies, exogenous import price increases and changes in domestic relative prices owing to changes in administered prices can put upward pressure on prices and lead to diverging paths of inflation and money growth in the short run. Finally, observed differences in the paths of inflation and monetary expansion can reflect improper measurement of one or both of the variables.

a. Inflation and the rate of growth of broad money

The lack of contemporaneous correlation between money and price movements is likely to reflect--at least in part--the lagged response of inflation to changes in the rate of monetary expansion. Lags in the response of inflation to changes in financial policies are common in all economies; a particular contributing factor in the Baltics, Russia, and other FSU states has almost certainly been the high volatility of money growth. In many countries, growth rates of the monetary aggregates have varied at times by up to 50 percentage points or more on a month-to-month basis. Under such conditions, the short-term behavior of monetary aggregates may provide little information as to underlying trends. Thus, not only will price and wage expectations be likely to be based, at least

1/ The usefulness of standard models is, of course, questionable in transition economies, where nominal variables such as prices, interest rates and exchange rates may not clear markets--i.e. where "disequilibrium" conditions may apply. Where possible, these factors are accounted for below.

partly, on the past behavior of inflation, but expectations of the future stance of monetary policy are likely to react slowly to shifts in the observed rates of money growth.

Accordingly, changes in the rate of monetary expansion would generally result first in short-term fluctuations in real money balances and velocity, and only subsequently in changes in the rate of inflation. This has likely been particularly true under stabilization efforts, which envision often dramatic changes in the path of money growth; a significant monetary tightening might not be perceived (or be considered credible) until well into the stabilization program. Allowing for lags in the response of inflation to money growth does seem to yield a "good fit" in the observed relationship for a few countries--in particular, for Latvia, Moldova, and Russia (Chart II.2). In these countries, inflation appears to have closely followed broad money growth with a lag of roughly one quarter. ^{1/}

For most other countries, however--in particular, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, and Turkmenistan--intervals of strong divergence in the growth rates of money and prices remain even after accounting for such lags. Moreover, while the growth rates of prices and broad money have tended to converge following such periods of sharp differences, this has meant that the effects of the previous deviations on velocity have not been reversed. ^{2/} Instead, as noted above, the sharp increases in velocity registered in the latter half of 1993 generally were not followed by corresponding declines in 1994, with the exception of Moldova and to a lesser extent Ukraine.

Thus, for many of the countries in the region, prices appear to have responded to factors other than changes in monetary policy in the short run. In that regard, possible explanations are changes in the demand for real money balances, as well as exogenous movements in the exchange rate, wages, the terms of trade, and administered prices. These factors are examined below.

b. Factors affecting the underlying demand for money

Inflationary pressure not related to changes in monetary policy may be caused by an exogenous decrease in the underlying demand for real money

^{1/} For Russia, simple regressions of monthly inflation against current and lagged values of ruble broad money growth indicate that the bulk of the impact of money growth on prices was felt with a 2-4 month lag. See Koen and Marrese (1994).

^{2/} To the extent that a lagged price response led to inflation well in excess of contemporaneous rates of monetary expansion, one would normally expect that the resulting rise in velocity would only be temporary, and that, *ceteris paribus*, real money balances would be restored in subsequent months; indeed, inflation would for some time decline to a level below the rate of growth of money.

balances (i.e., a shift in the demand curve)--related, for example, to a loss of confidence in the domestic currency. 1/ Movement out of domestic monetary assets can impact the price level both indirectly, as capital flight leads to exchange rate depreciation, as well as directly through precautionary goods hoarding.

The observed relationship between real balances and real interest rates for countries in the region tends to support the role of money demand shifts in explaining inflation and velocity movements. An exogenous decline in the demand for real money balances would be expected to put upward pressure on the rate of return on domestic monetary assets. 2/ And indeed, plotting movements of the real money stock together with those of the real interest rate, it appears that, for the region as a whole, large swings in real balances have been accompanied by inverse movements in the rate of return on

1/ The demand for real money balances is specified as a standard function of the relative rate of return to domestic monetary assets as compared with other assets (ρ), the level of real activity (Y), and a shift parameter (ψ) which acts as a proxy for such factors as changes in the level of uncertainty regarding the future relative return to monetary assets, or changes in the internal or external convertibility of domestic money. The relative rate of return to domestic money is defined as the nominal rate of return (i)--equal to the deposit rate of interest for non-cash holdings and zero for cash holdings--less either the return to domestic real assets (proxied by the rate of inflation, π) or the return to foreign monetary assets (proxied by the rate of nominal exchange rate depreciation, \dot{e}). With the relative underdevelopment of domestic bond markets in these countries, it is assumed that there are no alternative domestic financial assets. Thus:

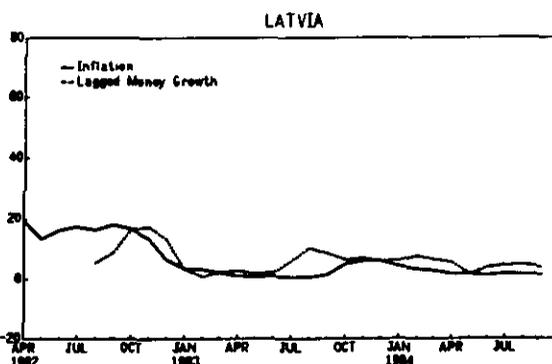
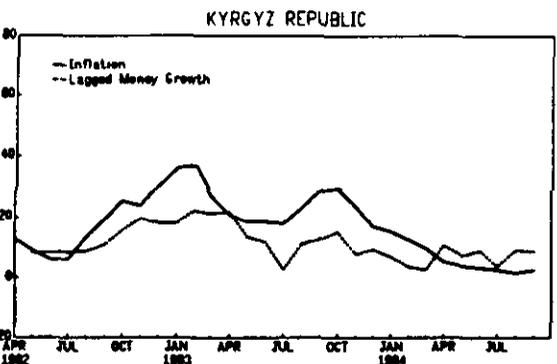
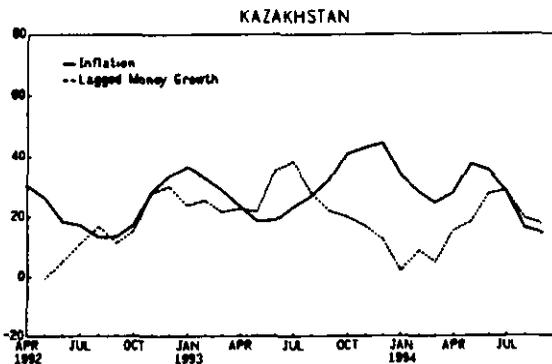
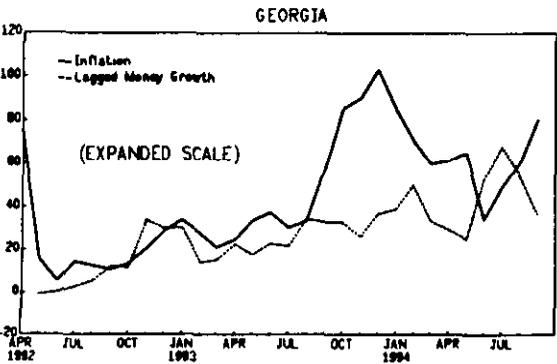
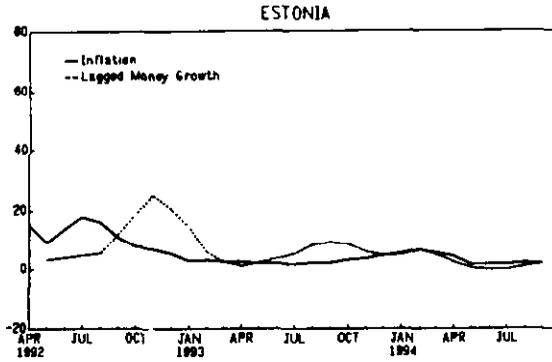
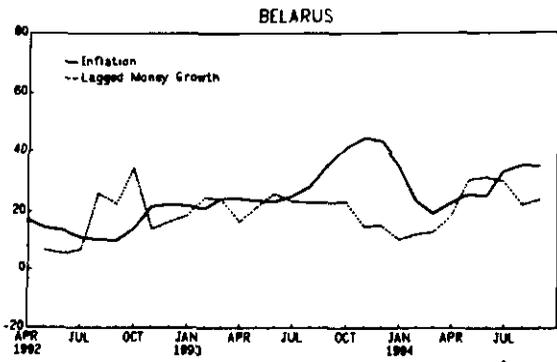
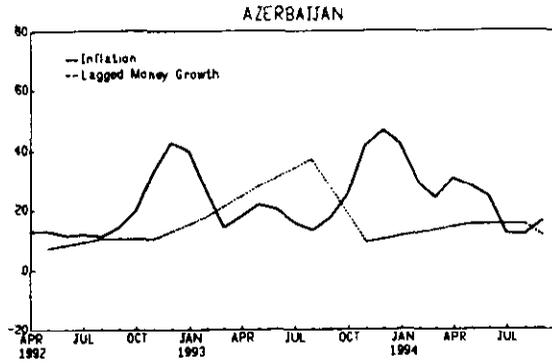
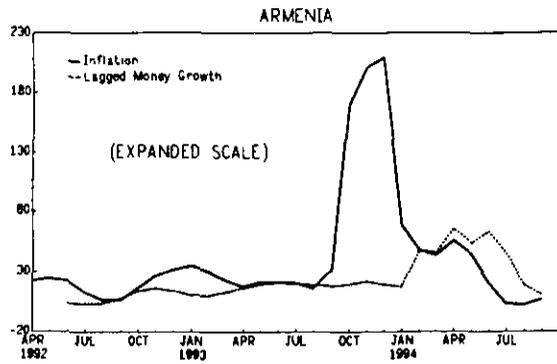
$$\left(\frac{M}{P}\right)^d = M(\rho_d, \rho_f, Y, \psi) \quad \text{where } \rho_d = i - \pi \quad , \quad \rho_f = i - \dot{e}$$

From this money demand function and the Fisher equation shown above, an equation for velocity as a function of the determinants of money demand may be derived.

2/ By contrast, if real balances declined due to supply-side factors such as exogenous price pressures--i.e. a shift in the supply of real money balances and a movement along the demand curve--the relative rate of return to monetary assets would be expected to fall.

CHART No II.2

Inflation and Lagged Money Growth

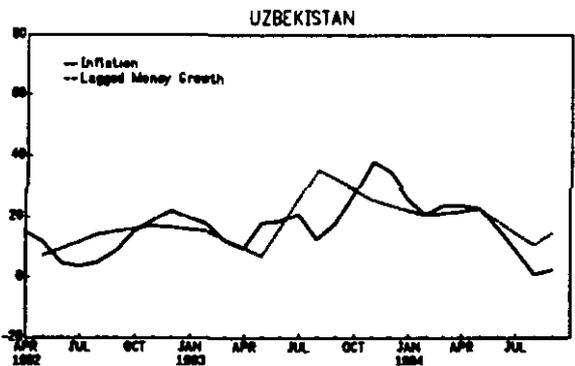
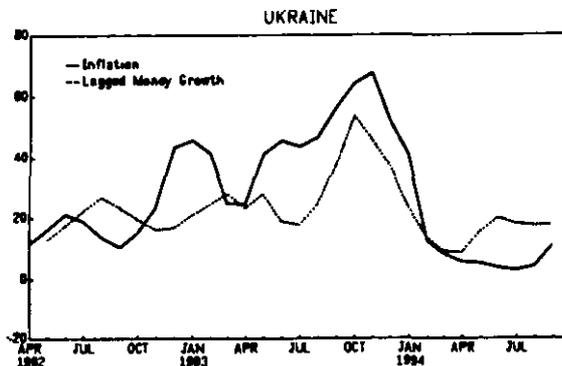
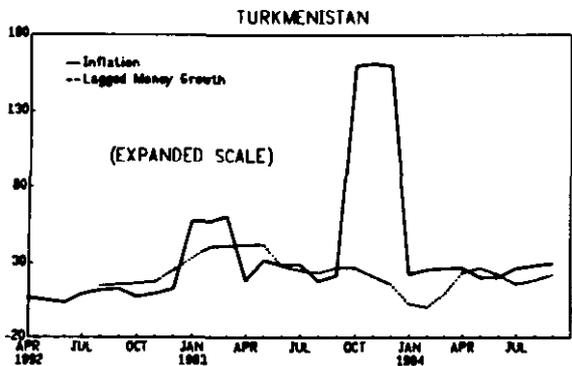
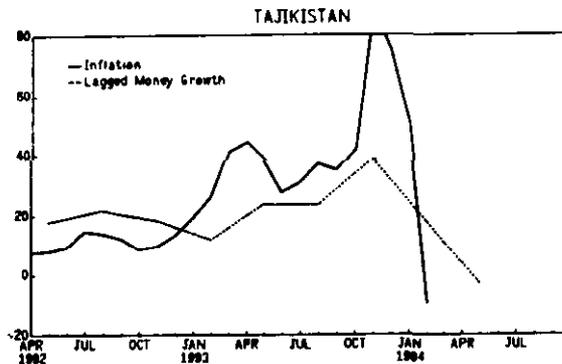
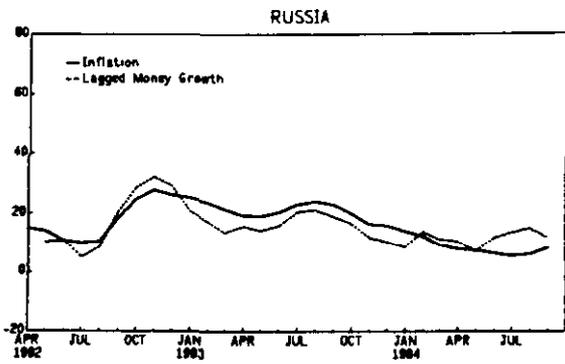
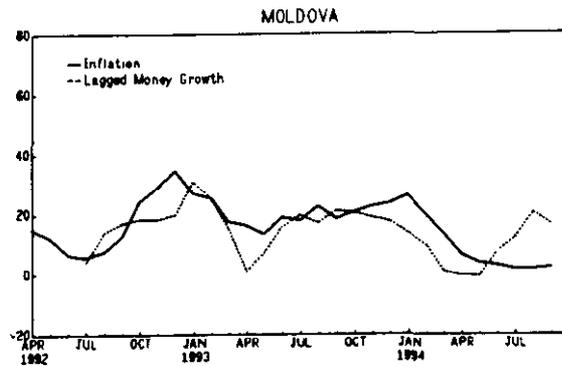
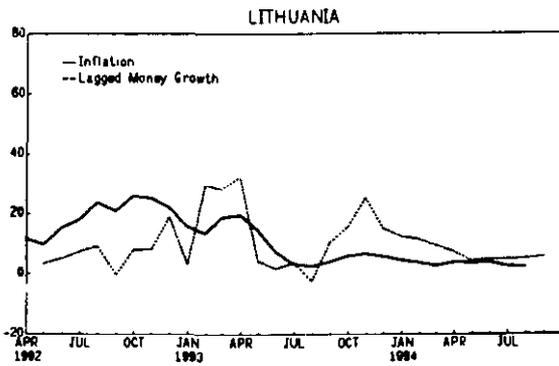


Definitions:

Inflation — 3-month moving average retail price inflation

Money Growth — 3-month moving average growth rate of domestic broad money, lagged one quarter

Inflation and Lagged Money Growth



Definitions:

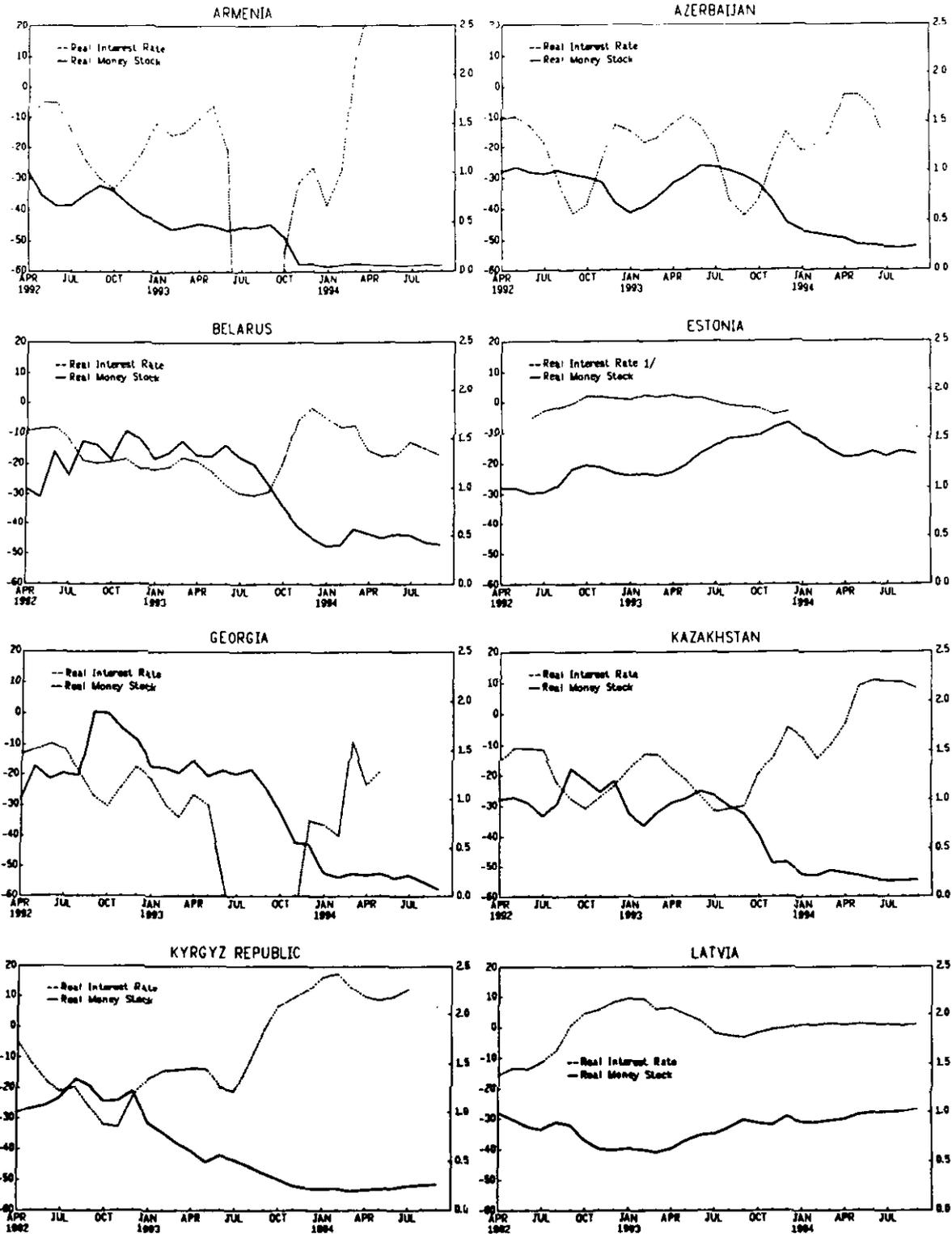
Inflation — 3-month moving average retail price inflation

Money Growth — 3-month moving average growth rate of domestic broad money, lagged one quarter

Relative Interest Rates and Real Balances

Left Scale: Real Interest Rate

Right Scale: Real Balances



Definitions:

Real Interest Rate -- Central bank refinance rate minus 3-month moving average consumer price inflation

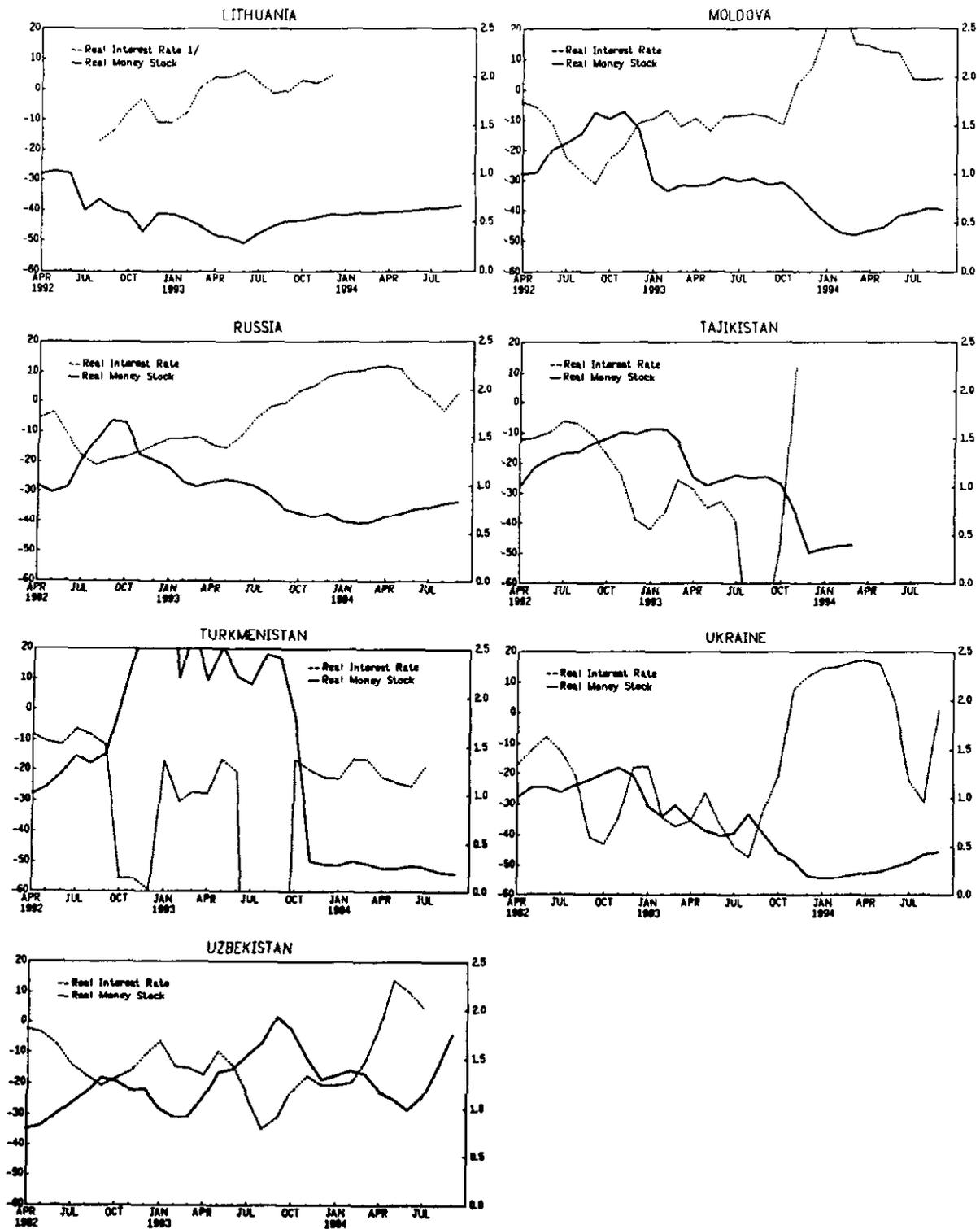
Real Money Stock -- real domestic stock of broad money (April 1992 = 1).

1/ Calculated using commercial 3-month interest rates.

Relative Interest Rates and Real Balances

Left Scale: Real Interest Rate

Right Scale: Real Balances



Definitions:

Real Interest Rate — Central bank refinancing rate minus 3-month moving average consumer price inflation

Real Money Stock — real domestic stock of broad money (April 1992 = 1)

1/ Calculated using commercial 3-month interest rates

monetary assets (Chart II.3). 1/ In particular, for each of the ten countries which recorded large increases in velocity in late 1993 and early 1994, declines in real money balances were associated with increases in the observed real interest rate.

Other evidence, however, is less supportive of the role of money demand shocks. First, while for a few countries it is easy to point to direct factors which could have caused a decline in real money demand, for most others there is no obvious explanation. For example, the introduction of national currencies could easily have led to a crisis of confidence, particularly if there were no strong signals as to the future stance of monetary policy. In fact, in Armenia and Turkmenistan, and to some extent in Kazakhstan, the acceleration in inflation and rise in velocity at the end of 1993 occurred at roughly the same time as the introduction of new national currencies. Other states, however, introduced new currencies with no effect on velocity (Estonia, Latvia, Uzbekistan), or registered significant velocity movements either much earlier or much later than the currency reform (Azerbaijan, Belarus, Kyrgyz Republic, Lithuania, Moldova, Ukraine). 2/

In addition, declining demand for domestic money does not appear to have reflected increasing inflationary expectations caused by earlier accelerations in monetary expansion. 3/ In fact, most of the ten countries which experienced bouts of strong inflation accompanied by velocity increases (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan,

1/ The relative rate of return in Chart II.3 is defined as the nominal interest rate on refinance credit less the contemporaneous rate of inflation, i.e. ρ_d in Footnote 1, page 13. It should be noted that focusing on banking system interest rates may be improper when a substantial portion of broad money consists of cash holdings (as is the case in many of the economies in this study); under such circumstances, ρ_d should be redefined as the negative of the inflation rate. Also, Footnote 1, page 13 suggests that a measure of relative return which included the return on foreign assets (ρ_f) would be equally valid. However, analysis of the relationship between real money balances and these alternative measures of the rate of return does not lead to qualitatively different findings than those contained in Chart II.3.

2/ A number of countries (Azerbaijan, Belarus, Georgia, Moldova) issued new currencies or coupons which initially circulated in parallel (and at a fixed par) with the Russian ruble; in these instances, a "crisis" in confidence in the domestic currency may have occurred later, after July 1993, when Russia demonetized pre-1993 ruble notes and at the same time significantly reduced the provision of new interstate credits--causing the above states to declare their currencies sole legal tender, and leading many countries to finally delink the national currency from the ruble.

3/ Periods of strong monetary expansion would fuel both actual inflation and inflationary expectations, leading to decreased confidence and lower money demand.

Turkmenistan and, to some extent, Ukraine) did so during periods when the rate of money growth had been roughly stable or falling for months (Chart II.2). ^{1/}

Finally, the relationship between inflation and exchange rate behavior in these countries does not suggest that shifts in money demand in favor of foreign currency were a significant factor explaining increases in inflation and velocity. As mentioned above, money demand movements in favor of foreign currency would be expected to affect the rate of inflation through changes in the nominal exchange rate. If flight from domestic currency were the primary cause of inflation, however, then the rate of nominal exchange rate depreciation would be expected to be as high or higher than the inflation rate. In fact, an examination of the period from late 1993 to early 1994, when the rate of inflation in these countries was much higher than that of broad money growth, reveals that declining real money balances were associated with an *appreciation* of the real exchange rate (Chart II.4). ^{2/} The main exception seems to be Georgia, where the real exchange rate depreciated dramatically as real balances fell in late 1993. (The evidence is very different for periods of *decreasing* velocity and *rising* real balances; these cases are discussed further below).

Thus, the broad evidence on the role of money demand shocks is mixed. While there are strong arguments in favor of money demand movements in a few country cases (Armenia, Georgia, Kazakhstan, Turkmenistan), for the remaining countries no firm conclusions can be drawn.

c. Influence of exogenous factors

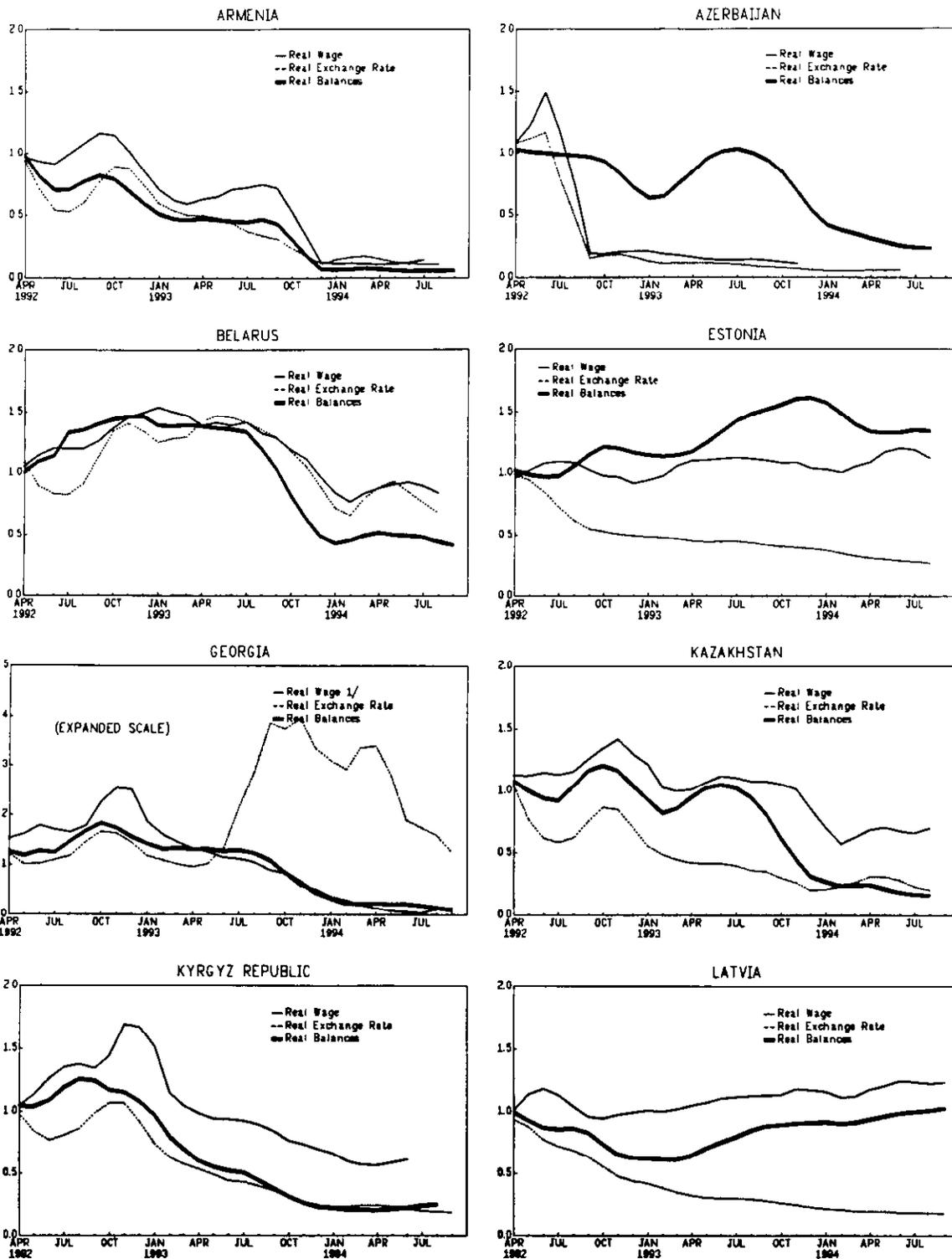
A third explanation for velocity movements relates to the role of exogenous price pressures, which can give rise to periods of high inflation not accompanied by corresponding increases in money growth. ^{3/} Exogenous changes in nominal wages--owing for example to adjustments in minimum wages or public sector wages that may not be directly linked to labor market conditions--could also have an independent influence on inflation. Here again, however, the aggregate data suggest that exogenous wage pressures

^{1/} It also does not appear that money growth in excess of program targets led to declining confidence in the currency in those countries with Fund-supported programs. An examination of Table II.3 and Chart II.2 shows that programs where monetary targets were missed still achieved a relative tightening *vis-à-vis* pre-program levels of monetary expansion.

^{2/} Care must be taken when interpreting movements in recorded exchange rates. In some cases, official exchange rates were fixed administratively at unrealistically low levels, while domestic currency prices of imports were based on black market rates. Thus, for example, observed exchange rate movements in Azerbaijan, Tajikistan, Turkmenistan, and Uzbekistan have had little effect on inflation.

^{3/} In contrast to money demand shocks discussed in the previous section, exogenous inflationary pressures would affect the *supply* of real balances.

Real Balances, Real Wages and the Real Exchange Rate



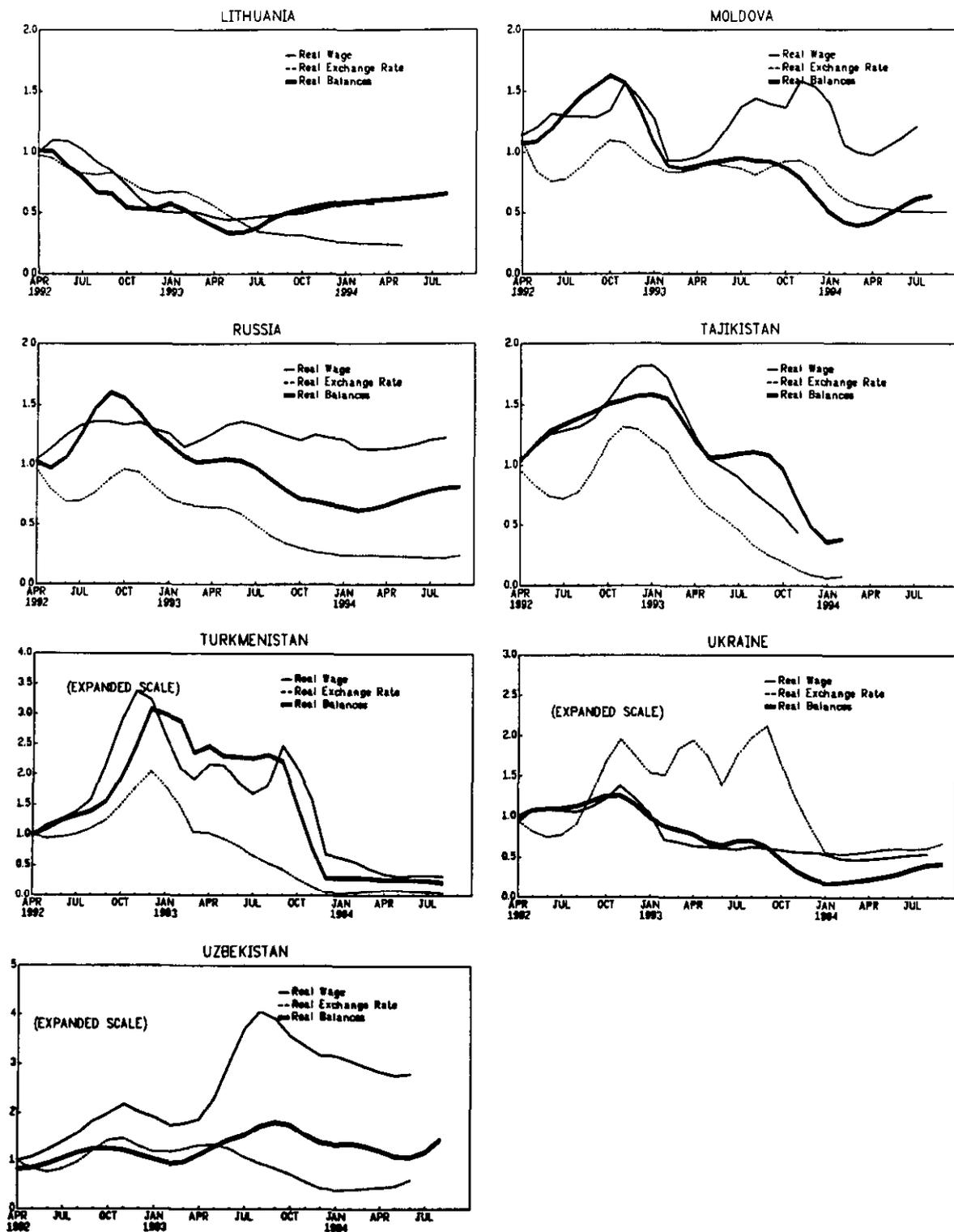
Definitions:

Real Wage -- Average wage deflated by retail price index

Real Exchange Rate -- Nominal U.S. dollar exchange rate deflated by retail price index (+ = depreciation)

1/ Real wage calculated using minimum wage

Real Balances, Real Wages, Real Exchange Rate



Definitions:

Real Wage — Average wage deflated by retail price index

Real Exchange Rate — Nominal U.S. dollar exchange rate deflated by retail price index (+ = depreciation)

1/ Real wage calculated using minimum wage

generally were not an independent factor pushing up prices. As Chart II.4 clearly indicates, when real balances fell markedly in the second half of 1993 and early 1994, real wages also declined in each of the ten relevant cases.

In contrast, exogenous increases in import prices appear to have a large impact on inflation in most of the ten states. For those states that were importers of energy products, the primary external price shock has been the large increase in energy prices in intraregional trade between 1992 and 1994. In some cases, prices for energy products increased by ten-fold or more in U.S. dollar terms; and with the notable exception of the Baltic states, the bulk of this jump appears to have occurred in the latter half of 1993 (Table II.4) ^{1/} Another important factor for the region was imported inflation from Russia: the substantial rise in the real exchange rate of the Russian ruble vis-à-vis the U.S. dollar implied estimated increases of around 200 percent in the dollar prices of imports from Russia during the second half of 1993. ^{2/}

Accordingly, these increases in external prices are likely to have made an important contribution to the rise in broad money velocity across much of the region in the latter part of 1993. For Estonia and Latvia, where energy import prices had already reached world levels by the middle of 1992, strong increases in velocity were not registered during the period covered in this paper. In Lithuania, energy prices rose dramatically over the course of 1992 to reach world market levels, at the same time that the velocity of broad money rose by about three fourths.

In contrast, in Russia, the system of export quotas allowed domestic prices of energy to remain low in the face of marked increases in prices of energy exports. Furthermore, the real appreciation of the Russian ruble worked to dampen rather than add to underlying domestic inflationary pressures. This could help explain why in the case of Russia, there was only a relatively small unanticipated increase in velocity.

Another independent influence on the short-term rate of inflation and velocity has likely been adjustments in administered prices. Available data indicate that in late 1993 Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Turkmenistan, and Ukraine all registered significant increases in domestic administered prices for food and energy products, and transport and communications services. In the absence of full downward flexibility of

^{1/} For the four countries (Belarus, Kazakhstan, Moldova, and Uzbekistan) for which quarterly price data is available, natural gas prices tripled and oil prices rose by 2 1/2 times during the second half of 1993.

^{2/} Close trading partners such as Belarus and Kazakhstan, in particular, may have suffered from large increases in the prices of non-energy imports from Russia, while countries which were more successful in redirecting trade toward Western markets (such as the Baltic states and Moldova) would have been less affected.

Table II.4. The Baltics, Russia, and other FSU Countries:
Energy Import Prices, 1992-1994

(In US dollars) 1/

	1992				1993				1994	1992	1993
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.		
Armenia											
Natural gas (th.cu.m.)	..	..	..	..	..	..	..	..	..	8	80
Oil and oil products (ton)	..	..	..	..	..	..	..	..	..	28	94
Azerbaijan											
Natural gas (th.cu.m.)	..	..	..	..	..	..	..	..	..	10	26
Oil and oil products (ton)	..	..	..	..	..	..	..	..	..	9	25
Belarus											
Natural gas (th.cu.m.)	..	..	..	..	19	17	34	58	..	9	32
Oil (ton)	..	..	..	..	54	58	59	73	..	18	61
Gasoline (ton)	..	..	..	..	97	84	112	140	..	20	109
Estonia											
Natural gas (th.cu.m.)	..	19 5/	69	85	79	76	..	..	..	58	77
Gasoline (ton)	..	155 5/	253	208	218	229	..	..	..	205	224
Diesel fuel (ton)	..	103 5/	205	166	164	161	..	..	..	158	162
Georgia											
Natural gas (th.cu.m.)	..	..	..	..	..	..	..	..	..	19	47
Oil and oil products (ton)	..	..	..	..	..	..	..	..	..	4	81
Kazakhstan											
Natural gas (th.cu.m.) 2/	..	..	..	..	28	17	32	59	..	8	34
Oil (ton) 3/	..	..	..	..	29	20	48	106	..	..	51
Gasoline (ton) 2/	..	..	..	..	105	108	169	229	..	..	153
Diesel fuel (ton) 2/	..	..	..	..	61	68	91	177	..	..	99
Latvia											
Energy price index	100	176	256	307	290	268	274	299	284	210	283
Lithuania											
Natural gas (th.cu.m.)	5	29	58	111	97	82	88	80	78	51	87
Oil and oil products (ton)	7	37	25	120	104	103	114	114	86	47	109
Moldova											
Natural gas (th.cu.m.)	..	16	14	3	17	15	10	44	..	8	22
Oil and oil products (ton)	19	46	54	44	87	100	88	131	..	47	109
Ukraine											
Natural gas (th.cu.m.)	..	..	..	..	..	..	..	..	..	9	50
Oil and oil products (ton)	..	..	..	..	..	..	..	..	..	44	85
Uzbekistan											
Natural gas (th.cu.m.) 2/	2	2	2	1	2	7	23	20	..	2	13
Oil (ton) 3/	7	23	43	73	100	67	103	116	..	36	96
Gasoline (ton) 3/	8	43	66	122	137	157	205	177	..	60	169
Diesel fuel (ton) 4/	1	6	6	27	58	102	221	379	..	11	190
Memorandum item:											
Dollar index of Russian non-energy goods prices	..	100	101	86	116	122	202	291	325	..	183

Sources: Data provided by authorities; and staff estimates.

1/ Unless otherwise noted.

2/ Domestic price.

3/ Price of imports from Russia.

4/ Price of imports from Kazakhstan.

5/ The data shown for the first quarter are for the first half of the year.

nonregulated prices, these increases in regulated prices--which ranged from two to ten times in a single month--tended to push up the overall price level beyond what would be implied by the rate of monetary expansion. 1/

Exogenous price movements, like those mentioned above, would be reflected only in temporary increases in inflation and velocity. If velocity rose due to exogenous short-term increases in inflation, then one would normally expect subsequent pressures for realignment in money markets and a recovery in real money balances. Thus, independent price shocks cannot of themselves explain the relative permanence of velocity movements in many states. However, independent price pressures could lead to more prolonged velocity movements if (i) initial shocks gave impetus to a cycle of further inflationary pressures, for example through domestic wage movements, or (ii) money market pressures were accommodated through the creation of informal liquidity. The possible role of wages in prolonging velocity swings is discussed in Section 4.b. below; the next section deals with the behavior of informal credits.

d. The role of interenterprise credit

If informal claims such as interenterprise credits or arrears are a sufficiently close substitute for banking system liquidity, then price movements will reflect not only the growth of monetary aggregates but also the creation of informal claims. In particular, periods of significant expansion in informal credits could be reflected in diverging rates of inflation and money growth and thus increases in *observed* velocity. 2/ The widespread presence of informal credit, moreover, could sustain a high level of nominal expenditures and thus extend the adjustment period, helping to explain the protracted nature of velocity movements in many countries in the region.

Indeed, there are strong indications that such credits have contributed to upward movements in velocity. For a number of countries for which a consistent time series exists--Azerbaijan, Belarus, the Kyrgyz Republic, Russia, and Ukraine--there is a rather striking relationship between the fall in real balances and the rise in interenterprise credits in late 1993 (Chart II.5). Other countries (for example, Moldova, Kazakhstan, and Turkmenistan) have also reported large run-ups of informal credits and arrears during periods of falling real balances and rising money velocity. 3/ 4/

1/ It should be noted that in many cases, the adjustments in administered prices were associated with the increases in external energy prices.

2/ As opposed to the underlying level of "liquidity velocity"--conceptually measured to include both informal credits and broad money--which would tend to be more stable.

3/ See Chapter III for additional details on arrears developments.

e. Measurement errors

A final explanation for the observed velocity movements in the region would be errors in measuring both money and price movements. With regard to the money stock, prior to the introduction of national currencies, official monetary statistics were based on officially reported shipments of cash rubles from Russia, and excluded unrecorded interstate flows of pre-1993 cash rubles that may have altered the true magnitude of cash in circulation. In the event, a number of states which still accepted pre-1993 cash rubles as legal tender in the fall of 1993 experienced inflows of these notes as neighboring countries moved to national currencies. In the majority of cases, these inflows are not likely to have had a significant impact. In a few instances, however, cash flows may have been quite substantial. Armenia and Tajikistan, in particular, reported large inflows during the last two months of 1993, as most of their neighbors introduced their own currencies; these inflows are likely to have contributed significantly to a 500 percent increase in the price level in November in Armenia and a 200 percent rise in December in Tajikistan.

Measuring velocity movements using the domestic money stock would also create distortions if there were significant currency substitution, i.e., flight to foreign currency holdings for use both as an asset and for transactions purposes. While data on foreign currency holdings are notoriously sketchy, 1/ their inclusion in the definition of broad money does reduce somewhat the magnitude of observed velocity swings for a few countries (such as Belarus and Georgia; see Chart II.6). However, the effect is not nearly large enough to explain the entire change in velocity. And for most other countries, the inclusion of foreign currency provides little additional explanatory power.

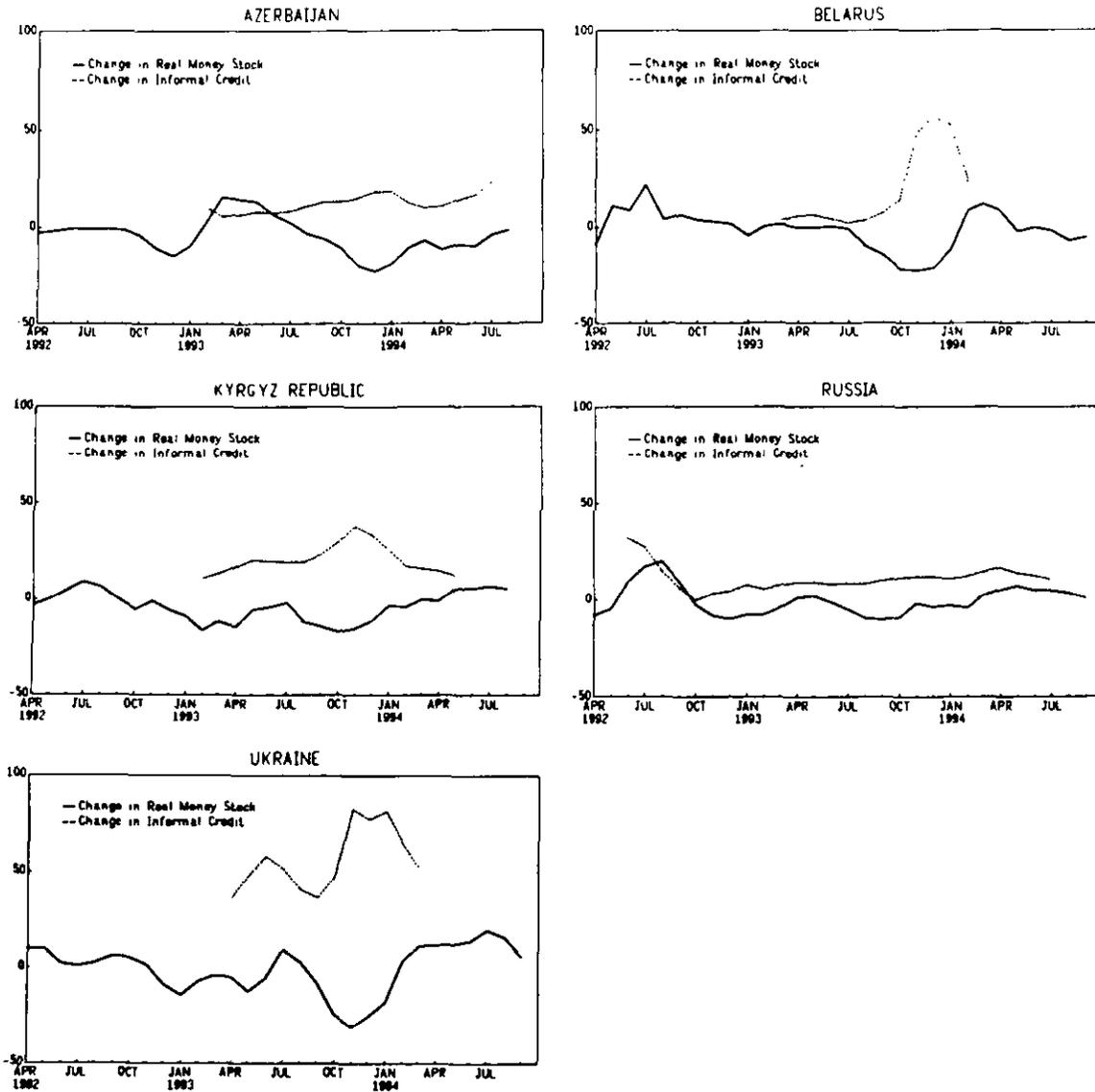
On the price side, a contributing factor to the measured rise in velocity may be the upward bias to measured inflation that is implied by traditional Soviet price indices, i.e., the so-called "Sauerbeck"

4/ (...continued)

4/ A more rigorous approach would be to directly construct a series for "alternative liquidity", containing both standard monetary aggregates and informal credits, and compare movements in this liquidity indicator with observed price changes. However, the available literature provides no clear guidelines as to what definition of interenterprise credits (i.e. the outstanding stock or the current flow; overall receivables or a definition which excludes overdue arrears) would correspond conceptually to standard monetary aggregates.

1/ Available data on domestically-held foreign currency generally include foreign exchange deposits but do not include cash holdings; in addition, there is little information as to foreign currency held abroad.

Real Balances and Interenterprise Credit

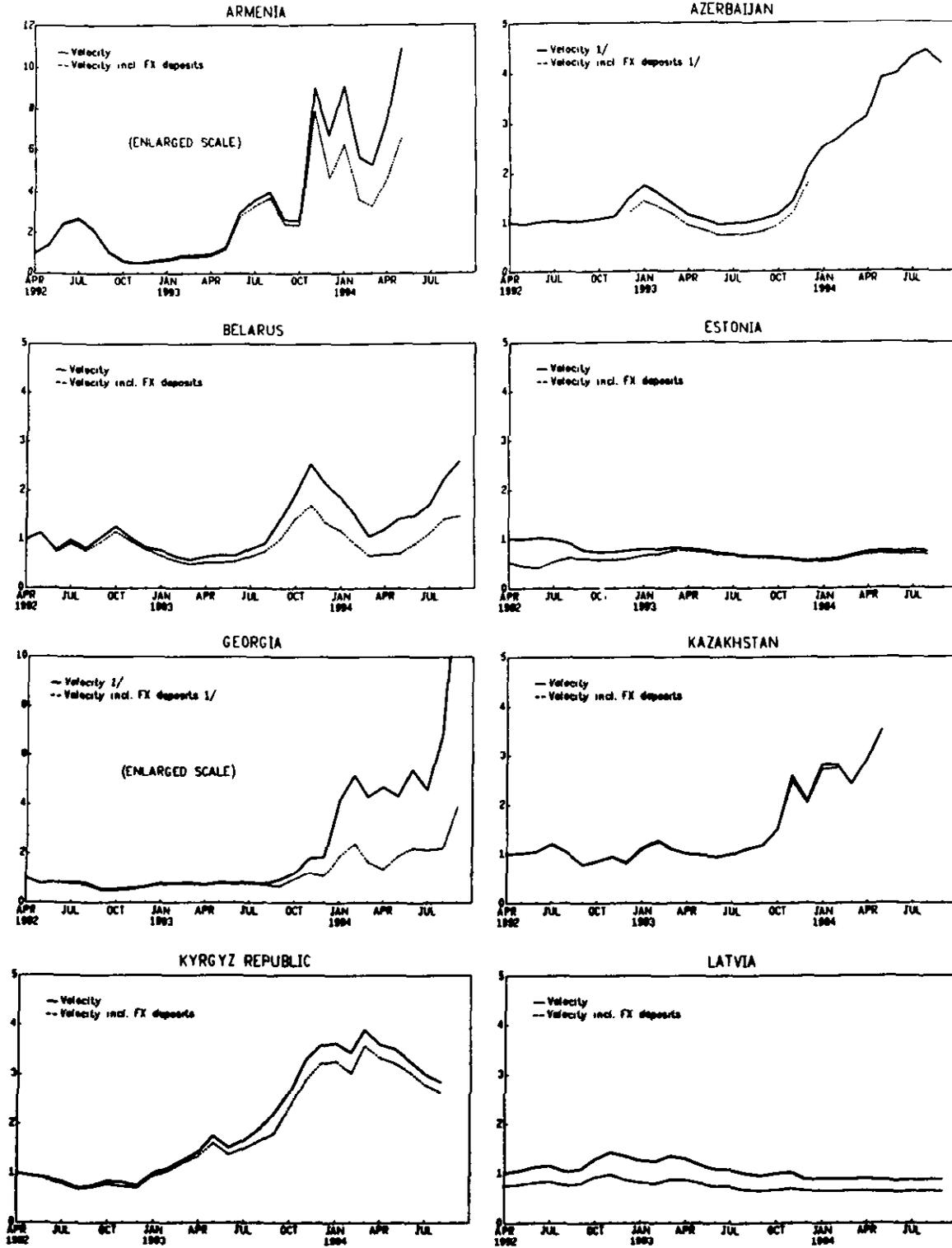


Definitions:

Real Money Stock — 3-month moving average growth rate of real domestic broad money stock
Informal Credit — 3-month moving average growth rate of interenterprise credit (series smoothed to exclude effects of netting operations).

CHART No II.6

Broad Money Velocity Including Foreign Currency



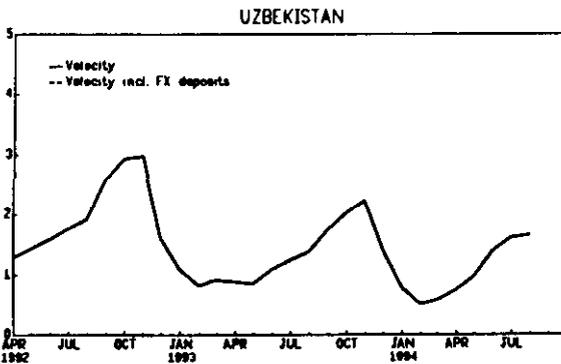
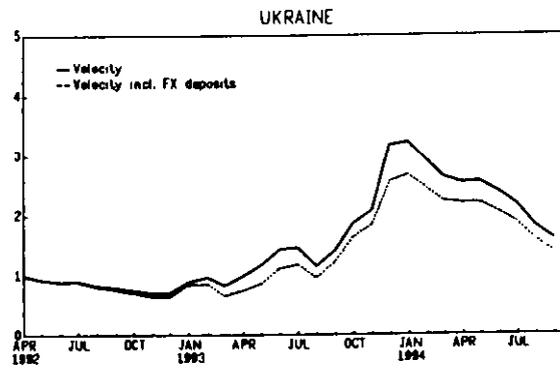
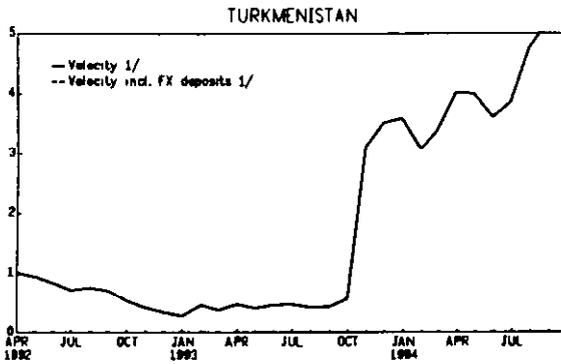
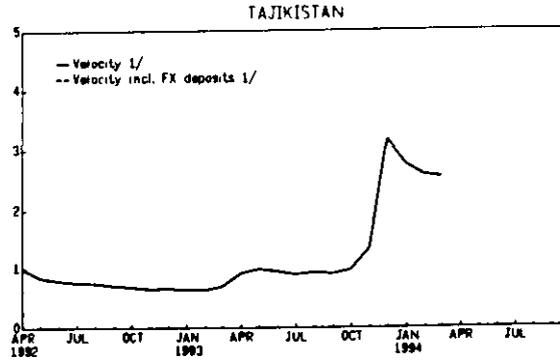
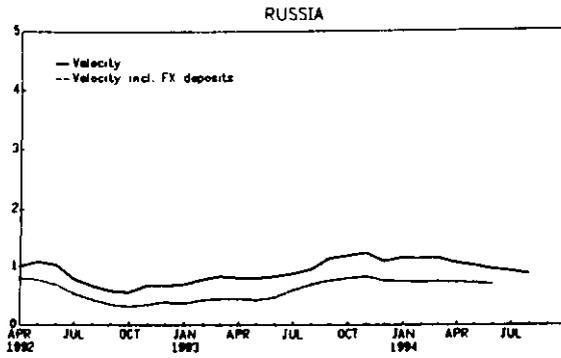
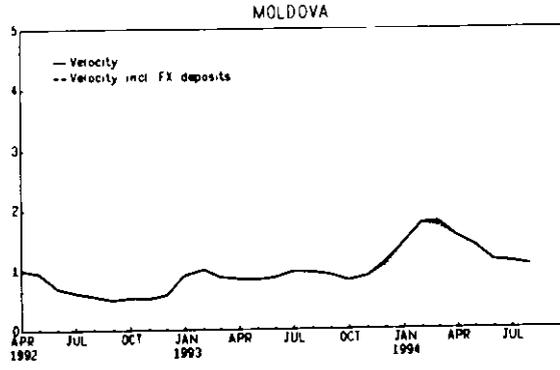
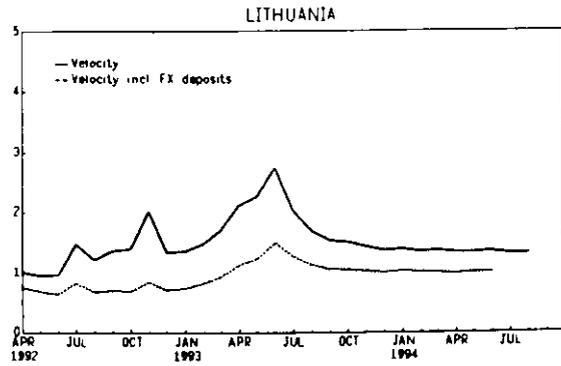
Definitions:

Velocity — Domestic broad money velocity, index (April 1992 = 1)

Velocity including FX — Total broad money velocity including foreign currency deposits, index (April 1992 = 1)

1/ Velocity defined as the inverse of the real money stock

Broad Money Velocity Including Foreign Currency



Definitions:

Velocity — Domestic broad money velocity, index (April 1992 = 1)

Velocity including FX — Total broad money velocity including foreign currency deposits, index (April 1992 = 1)

1/ Velocity defined as the inverse of the real money stock

problem. 1/ 2/ This measurement error is estimated to have had a significant impact to the measured rise in velocity in Moldova, for example, prior to the construction of a corrected price index. 3/

4. Differences in velocity performance

The above section discussed possible explanations for the observed shocks to real balances and velocity. This section analyzes policy responses and the subsequent behavior of velocity. While two of the ten countries (Moldova and Ukraine) which experienced sharp increases in velocity in late 1993-early 1994 have seen velocity decline to close to previous levels, in others (especially Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, and Turkmenistan) velocity has remained high. In the case of Lithuania, velocity fell back following a rise that occurred in late 1992-early 1993.

The following points emerge from the discussion: first, regardless of the source of the initial inflation and velocity increases, countries where velocity subsequently fell achieved that result by raising the demand for real balances through establishing high rates of return on monetary assets and other conditions that instilled confidence in the currency. Second, the containment of wage pressures may also have facilitated reductions in velocity, as countries where initial inflationary shocks fed into a cycle of high wage growth were those which experienced more difficulty in controlling inflation and restoring confidence.

a. Recovery of real money demand

While the findings in section 3.b. suggest that nominal exchange rate movements did not appear to play a dominant role in explaining initial surges in inflation and velocity, there is strong evidence that increased confidence in the currency has played a key role in subsequent reductions in velocity and accompanying increases in real balances. As indicated in Chart II.4, recent periods of increasing real money balances in the Kyrgyz Republic, Moldova, and Russia, as well as the earlier experience of the

1/ This problem arises when price indices are calculated using weighted averages of individual price changes in a "chained" fashion (rather than computed in reference to a fixed base period); see for example Lequiller and Zieschang (1994).

2/ In addition to methodological issues in calculation, price indices in these economies are also subject to inadequacies in the area of coverage; in particular, goods traded in the illegal or semi-legal sectors--or even, for some countries, the non-state sector in general--are not included in the indices. It is not clear, however, whether these deficiencies in coverage would necessarily lead to biases which could help explain the observed velocity trends.

3/ See Haley and Shabsigh (1994).

Baltic states featured a stable or appreciating real exchange rate, suggesting that reductions in velocity were associated with a strengthening in the demand for domestic currency and a containment of capital flight.

Looking specifically at the experience of Fund-supported programs, it is clear that the four successful anti-inflation programs presented in Table II.3 featured relatively stable or even appreciating nominal exchange rates together with declining velocity (Table II.5). In Estonia and Latvia, exchange rates stabilized at the beginning of the 1992 stabilization programs, contributing to a quick decline in the rate of increase in traded goods and overall consumer prices. ^{1/} In the Kyrgyz Republic, Lithuania, and Moldova, the sharp reductions in inflation under their second stabilization programs have been accompanied by a halt to the substantial exchange rate depreciations that were registered during the initial programs.

At the same time, in the remaining programs, where inflation was not reduced as envisaged, unanticipated increases in velocity were accompanied by nominal exchange rate depreciation at a rate that was in general significantly higher than assumed under the program. ^{2/} This weakening in exchange rates is likely to have contributed to the poor inflation outcomes in these countries by increasing the prices of tradables and adversely affecting inflationary expectations.

Exchange rate and velocity movements, in turn, have been strongly influenced by domestic financial policies--in particular, by the achievement of (or failure to achieve) positive real rates of return to domestic monetary assets. This point is brought out in Chart II.3; those countries where rates of return were allowed to reach positive levels for a significant period of time (Estonia, Kyrgyz Republic, Latvia, Lithuania, Moldova, Russia, Ukraine) stopped velocity increases and initiated a subsequent reversal and recovery in money demand. Countries where real rates of return have remained significantly negative (Azerbaijan, Belarus, Georgia, Tajikistan, Turkmenistan)--or have only recently turned positive (Armenia, Kazakhstan)--have yet to bring inflation and velocity increases under control. Thus, while the achievement of positive real interest rates is not a sufficient condition for reducing inflation, it can substantially strengthen stabilization efforts by stemming capital flight and reducing pressure on the exchange rate, as well as on domestic prices.

^{1/} In addition to the favorable direct impact on prices, the fixed exchange rate regime in Estonia is likely to have had favorable indirect effects on stabilization. See Chapter IV for an analysis of the relationship between exchange rate management and stabilization.

^{2/} Programs generally assumed either a constant real exchange rate (i.e. nominal depreciation equal to the rate of inflation) or an appreciation in real terms (reflecting the expected effects of domestic financial policies).

Table II.5. The Baltics, Russia, and other FSU Countries:
Quarterly Changes in Wages, Exchange Rates, and Real Interest
Rates Under Fund-Supported Programs, 1992-1994 1/

(Percent changes)

	1992			1993				1994		
	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.
Estonia										
Average wage	58.8	50.5	18.2	20.7	7.6					
Minimum wage	...	...	-	-	-			
Exchange rate	3.4	-7.4	14.3	-	4.6					
Real interest rate (level) 2/	...	-26.3	-6.2	1.3	4.0					
Latvia										
Average wage	107.8	21.0	56.4	7.3	8.8					
Minimum wage	123.9	26.7	57.9	-	-					
Exchange rate	6.5	23.1	-6.3	-17.6	-5.7					
Real interest rate (level) 2/	-55.0	-38.3	-7.0	18.5	12.2					
Lithuania										
Average wage	79.7	36.5	10.6	54.8	33.0	15.7	40.2	19.2	1.3	...
Minimum wage	50.5	24.1	-	38.2	33.2	21.4	26.3	4.2	5.6	...
Exchange rate	19.1	88.0	55.1	28.9	-11.6	-4.2	-6.5	2.6	-	...
Real interest rate (level) 2/	...	...	-47.1	-35.9	-13.3	3.5	4.0	...	...	...
Belarus										
Average wage						70.9	145.0	44.6	122.9	98.0
Minimum wage						36.4	122.2	50.0	100.0	66.7
Exchange rate						99.4	83.7	160.6	51.2	104.7
Real interest rate (level) 2/						-99.8	-104.1	-53.1	-53.0	-74.5
Kazakhstan										
Average wage				50.3	94.0	88.8	159.6	23.9	185.3	83.0
Minimum wage				177.8	80.0	-	233.3	33.3	150.0	50.0
Exchange rate				58.7	63.6	46.8	99.4	216.0	117.1	10.9
Real interest rate (level) 2/				-95.8	-69.4	-93.5	-105.4	-62.6	-32.7	-20.1
Kyrgyz Republic										
Average wage					46.3	69.2	68.0	6.6	25.1	4.1
Minimum wage					-	75.0	14.3	40.6	28.9	17.2
Exchange rate					25.7	51.2	23.5	45.7	-3.4	-6.2
Real interest rate (level) 2/					-53.1	-51.1	-11.3	25.0	21.0	31.1
Moldova										
Average wage						113.2	61.1	37.9	33.0	8.4
Minimum wage						150.0	33.3	35.0	33.3	-
Exchange rate						85.6	78.3	9.3	1.8	3.5
Real interest rate (level) 2/						-32.3	-22.6	22.1	28.6	13.5
Russia										
Average wage					101.1	70.8	74.6	16.7	25.9	22.0
Minimum wage					90.0	81.1	88.9	-	-	40.2
Exchange rate					55.0	10.3	6.7	40.6	13.5	32.4
Real interest rate (level) 2/					-48.9	-32.9	-5.3	16.5	25.0	16.6

Sources: Data provided by authorities; and staff estimates.

1/ Changes in average wages, minimum wages and the exchange rate (an increase in the latter indicates depreciation) reflect within-period quarterly rates. Except where indicated, the real interest rate is defined as the average central bank refinancing rate (simple quarterly basis) less the contemporaneous moving average quarterly rate of inflation.

2/ Defined using commercial 3-month leading rate (quarterly basis).

The role of financial policies is underscored by the experience of Fund-supported programs. In the cases where inflation was brought down successfully, interest rates reached levels that were positive in real terms. In Estonia and Latvia in 1992-93, and in the successor arrangements for the Kyrgyz Republic, Lithuania, and Moldova in 1994, central bank refinance rates became positive in real terms at least by the third program quarter. In all of these cases, exchange rates stabilized or even appreciated in nominal terms, and domestic inflation declined substantially.

In the remaining cases, where inflation was not reduced as targeted, interest rates remained negative in real terms in all countries except Russia. 1/ In that country, under the 1993 STF-supported program, inflation remained higher than targeted in the fourth quarter of the year, but monetary policy was tightened significantly and the refinance rate became positive in real terms during that quarter, and inflation fell during the first half of 1994. In the cases of Belarus, both Kazakhstan programs, and Lithuania's October 1992 program supported by a stand-by arrangement, real interest rates remained negative throughout the program. While refinance rates were raised significantly in nominal terms, these increases were insufficient relative to the extremely high rates of inflation, contributing to weakness in the currency and rising velocity. Under the first programs in the Kyrgyz Republic and Moldova in 1993, refinance rates were negative in real terms throughout most of the program and inflation objectives were not attained. However, interest rate increases over the course of the program served to set the stage for a reduction in inflation and a stabilizing of the currency in the period immediately following the end of those programs (i.e., rather quickly under the successor arrangements).

b. Wage developments

While the findings in Section 3.c. suggest that exogenous wage movements cannot be considered a primary cause of the increases in inflation and velocity which took place beginning in the second half of 1993, there are some indications that high increases in nominal wages in reaction to the initial inflation shock sustained and fueled inflationary pressure in a number of countries, undermining efforts to reduce inflation and increase real money balances.

This possibility is brought out in the experience of Fund-supported programs in the region, where the failures in achieving inflation targets were accompanied by excessive wage increases. All programs sought to achieve wage restraint, and generally envisaged wages in real terms to

1/ It may be noted that while actual performance was mixed, all programs did aim at domestic interest rates reaching positive real levels, through (i) increases in the central bank refinancing rate; (ii) the introduction or widening of central bank credit auctions; and, in a few cases, (iii) the liberalization of commercial bank loan interest rates.

either remain constant or decline over the program period. ^{1/} Only in the successful stabilization efforts, however (the initial programs in Estonia and Latvia, and the successor programs in the Kyrgyz Republic, Lithuania, and Moldova)--as well as in the second Russia program supported by the STF--were actual wage increases roughly in line with targeted rates of inflation and monetary expansion. In the remaining programs, rates of wage growth were significantly higher than the corresponding inflation targets--despite more ambitious monetary efforts in some cases. Moreover, in most countries, average wages rose broadly in line with minimum wages, suggesting that the authorities may have been attempting to maintain real wages in the face of generalized pressures on prices. Those program countries which were most successful in achieving sustained reductions in velocity (Estonia, Latvia, Lithuania, Moldova) did so during periods when wage increases were relatively restrained.

5. Conclusions and implications for stabilization policy

The findings of this study suggest the following lessons for stabilization policy: first, sustained reduction in broad money growth is fundamental to inflation stabilization; the experience of the Baltics, Russia, and other FSU countries confirms the primary role of monetary policy in determining the medium-term rate of inflation. In the short run, however, the relationship between inflation and money growth can be weaker. This was especially so in late 1993-early 1994 when inflation rose sharply in a number of countries, without there having been an acceleration of money growth. First, there are normal lags in the transmission process; second, exogenous factors such as rising import prices or strong wage or administered price increases can have a significant influence on the price level. And third, changes in the underlying demand for money, particularly in conditions of instability and uncertainty, can manifest themselves in exchange rate and price behavior. While determining the exact cause of price movements is difficult, this study has found evidence that all three factors have, at various times, had a strong influence on the behavior of inflation velocity. Moreover, it has proven difficult to subsequently restore domestic real balances.

While a reduction in the rate of monetary expansion is both a necessary and sufficient condition for bringing down inflation, there may be other factors which can assist in speeding the response of prices and minimizing the effects of exogenous shocks. The experience of successful stabilizers suggests that rising demand for domestic money balances has been

^{1/} Proposed measures included (i) direct control of the wage bill in the budgetary sector; (ii) limits on increases in the minimum wage; and (iii) tax-based incomes policies governing wages in state enterprises, usually taking the form of a maximum admissible average wage that was a certain multiple of the minimum wage. The exception was Russia, where programs contained no explicit objectives or measures with respect to the path of wages.

particularly important. Thus, the achievement of positive real interest rates can stem capital flight and exchange rate depreciation; increasing domestic interest rates or committing to exchange rate stability can also have a signalling effect on expectations that will support monetary tightening. At the same time, avoiding unwarranted nominal wage growth can prevent overadjustment to external price increases or domestic price liberalization. Finally, the ability in many of these countries to offset declining real money balances with increased creation of informal credit has also weakened the linkages between money and prices, often leading to run-ups of interenterprise arrears in the short run. A large overhang of arrears can give rise to pressures to reverse monetary policy and may have associated real costs as well; thus, policies to prevent an endogenous response of informal credit creation (and in particular those which signal the refusal of the government to "bail out" indebted enterprises) would make stabilization policy more effective.

III: Interenterprise Arrears

1. Introduction

During the process of adjustment from central planning to a market-oriented system, many transition economies have experienced the problem of enterprises not receiving payments from each other on time for goods and services delivered. Such nonpayments--or interenterprise arrears--signal a lack of financial discipline, can retard investment and the process of privatization, and can undermine the conduct of prudent macroeconomic policies. The aim of this paper is to examine developments in interenterprise arrears in the Baltics, Russia and other countries of the former Soviet Union (FSU), identify its possible sources, and set out policy options towards resolving the problem.

The potential adverse effect of interenterprise arrears can be much wider than its direct impact on enterprises which did not get paid for goods and services delivered. First, these enterprises themselves may incur arrears on their payables because of insufficient liquidity. Enterprises can quickly become entangled in multiple layers of arrears, with one enterprise's payment to a second contingent on receipt of payment from a third, and so on. Such a snowballing of arrears can threaten the viability of fundamentally profitable firms as well as that of lossmaking enterprises. Second, massive amounts of receivables and payables on enterprise balance sheets, much of dubious value, can lead to informational confusion hindering a realistic assessment of the financial situation of enterprises by their own managers, suppliers, banks and potential investors. As a result, investment, credit, and privatization decisions may be impeded. Third, interenterprise arrears (and trade credits more generally) constitute a form of financial disintermediation and can lead to complications in monetary management, in particular, by leading to a decline in the demand for bank credit and increase in the velocity of money (see Chapter II).

In the Baltics, Russia, and other FSU countries, interenterprise arrears grew rapidly during the first six months of 1992, from relatively modest initial amounts. The subsequent behavior of interenterprise arrears has varied across countries. Although a cross-country comparison is complicated by the lack of reliable data on a consistent basis, ^{1/} by end-1994, the problem appeared to have subsided considerably in countries which made significant progress towards macroeconomic stability and structural reform--e.g., in the three Baltic states. In contrast, some other countries--most notably, Azerbaijan and Ukraine--which were not well-advanced stabilization and reform, saw an intensification of the arrears problem.

^{1/} See Appendix for a discussion of data issues.

It should be noted that while the interenterprise arrears problem has been accompanied by a build-up in wage and tax arrears, the discussion here focuses on overdue payments obligations between enterprises. Overdue payments between enterprises across national boundaries are also an important aspect of the arrears problem. The interstate component of arrears mainly relate to the energy sector in most countries. Such arrears are often large in volume, and complicate not only the balance of payments but also interstate financial relations.

The plan of this chapter is as follows: Section 2 presents the evolution of interenterprise credits and arrears in the Baltics, Russia, and other countries of the FSU; Section 3 discusses some conceptual issues regarding interenterprise credit and arrears, and examines some of their probable causes; Section 4 considers policy options to deal with the existing stock of debt and to prevent the emergence of new arrears; Section V concludes.

2. Evolution of interenterprise credit and arrears in the FSU

a. Under the old regime

Under central planning, access to bank credit was virtually automatic for activities approved by the plan, and the need for interenterprise credit was extremely limited. Interenterprise transactions were carried out in "account" or "deposit" money by making money transfers through the old interbranch settlement system. A supplier usually received payment by submitting a payment demand order to its own bank requesting payment from the buyer. 1/

Under this system, overdue payments were only a minor problem. Unpaid bills of enterprises were recorded under the "File No. 2" ("kartateka nomer dva") of commercial banks, and any arrears at the end of the financial year were written off by the extension of automatic credit. 2/ At the end of 1990, for the entire U.S.S.R., total interenterprise receivables for goods and services were equivalent to 13 percent of GDP, and at the end of 1991. The outstanding balance in File No. 2 for the region stood at an estimated 7 percent of GDP.

1/ A detailed description of the payments system prior to mid-1992 is available in Bigman and Leite (1993).

2/ In years of poor economic performance, the write-offs could be large enough to have a macroeconomic impact (as with the agricultural debt write-offs of 1986).

b. The initial transition period, early 1992 to mid-1993 1/

All this changed with the phasing out of strict central planning in early 1992. The banking sector ceased to function as an administrative arm of the planning mechanism, and bank credit to enterprises ceased to be automatic. Furthermore, the phasing out of state orders, which had provided an assured market for a large portion of enterprises' output, implied that enterprises had to look for customers, start to engage in marketing activities, and also perhaps coax buyers by providing trade credit.

Interenterprise credit, which had been mostly confined to the "File No. 2" of banks, began to appear outside the purview of the banking system, and the "File No. 2" system was abolished in many states by the middle of 1992. 2/ Enterprises were free to instruct their banks which creditors to pay, if at all, and not necessarily in order of chronological seniority. At the same time, the outstanding amounts in the "File No. 2" were no longer guaranteed, and the quality of such claims suddenly became highly questionable.

Total interenterprise credits (including those not considered to be overdue) increased rapidly in almost all countries during 1992 and the first half of 1993. Indeed, these credits rose substantially in relation to the stock of broad money, contributing to inflationary pressures. Nevertheless, at the end of the period, the levels of interenterprise credits were modest (Table III.1) compared with the standards of both established market economies, and those of other reforming economies in eastern Europe such as Poland, Hungary, and the former Czechoslovakia, at a comparable stage of transition. As of mid-1993, total interenterprise receivables were in the range of 5 percent to 19 percent of GDP in Belarus, Russia, and Ukraine--the only three countries for which data on total interenterprise credits exist at higher than annual frequencies. 3/ 4/ In the 1980's, in the United

1/ This period begins with the dissolution of the U.S.S.R. and ends just prior to Russia's demonetization of pre-1993 Russian rubles.

2/ It has not been abolished in Azerbaijan, Turkmenistan, and Uzbekistan. In July 1992, the central bank of Russia changed the regulations regarding File No. 2: in case of insufficient funds, payment demands in most cases were not to be queued anymore but returned to the originator. Thus, the coverage of the data that continued to be compiled under File No. 2, clearly changed from July 1992. Regulations regarding File No. 2 were changed again in October 1993.

3/ In Russia, prior to the third quarter of 1993, the data on interenterprise credit and arrears cover only the industrial and construction sectors. However, data for the subsequent period, indicate that total interenterprise credits are typically 10-20 percent higher than the corresponding figures for industry and construction only.

4/ The corresponding levels of interenterprise payables in mid-1993 were in the range of 4 percent to 23 percent of GDP in these three countries (Table III.1).

Table III.1. Belarus, Latvia, Russia, and Ukraine: Interenterprise Credit

(Payables, end of period)

	1992	1993				1994		
	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.
<i>(As percent of GDP) 2/</i>								
Belarus	...	...	3.9	3.5	8.1	15.6	13.9	...
Latvia 1/	23.8	...	...	...	16.2	...	...	...
Russia	...	...	...	...	8.0	9.9	6.0	...
Of which: industry and construction	...	6.7	6.3	6.2	6.9	8.3	4.9	...
Ukraine	...	...	22.6	16.2	20.9	30.5	33.5	...
<i>(As percent of broad money)</i>								
Belarus	...	38.5	36.5	36.2	185.8	114.8	141.2	...
Latvia 1/	204.0	...	...	...	79.5	...	...	...
Russia	...	...	...	76.4	84.8	121.4	107.9	105.1
Of which: industry and construction	46.3	53.1	47.6	66.6	73.6	99.1	88.3	83.2
Ukraine	...	90.8	166.4	140.7	334.1	389.8	361.6	...

Sources: Data provided by the authorities; and staff estimates.

1/ Includes payables to the Government as well as banks.

2/ Defined as average during the quarter as a percent of annualized quarterly GDP.

Kingdom, interenterprise credit among industrial and commercial companies alone was in the range of 17-20 percent of GDP, 1/ while in the United States, trade credit of non-financial corporations stood at 17 percent of GDP in the first quarter of 1992. The levels of interenterprise receivables were equivalent to 20-60 percent of GDP in Poland and the former Czechoslovakia during 1988-1991 (Chart III.1).

Turning to the overdue portion (arrears), their levels--when measured in relation to GDP or in terms of total interenterprise credit--also remained relatively low (Table III.2). 2/ For example, in the Czech Republic, just under 50 percent of total receivables were overdue at end-1991, and in many western European countries nearly half the firms wait until bills are two weeks or more overdue before paying them. 3/

Nevertheless, by mid-1992, the rapid growth of interenterprise arrears became a major source of concern among policymakers, particularly in the countries of the Commonwealth of Independent States (CIS). While the Baltic states followed a policy of benign neglect, in the CIS meetings in Bishkek and Tashkent in May 1992, broad agreement was reached among officials on a four-pronged plan of action to: (i) increase the responsibility of enterprises for assuring prompt payment for their sales; (ii) raise the interest rate that enterprises were advised to charge on arrears; (iii) net out arrears first within each state and subsequently at the interstate level; and (iv) replenish the working capital of state enterprises. While action on the first two components of the policy package was not immediately obvious, all countries of the CIS carried out netting out exercises for interenterprise arrears and followed these up with additional bank credit to clear the net outstanding claims as well as to replenish the working capital of enterprises. In the event, these actions added to inflationary pressures, and the reprieve to the arrears problem achieved by the exercise proved to be temporary.

Russia, provides a clear example of these developments. By mid-1992, interenterprise arrears had risen to 21 percent of GDP, 4/ and deliveries started to become sensitive to payments, with reports of enterprises delivering cash by truck or plane against delivery of goods. In response, the authorities carried out a multilateral netting of arrears in the second half of 1992, through the establishment and operation of special accounts in

1/ See Begg and Portes (1992), Table 4.

2/ As explained in the Appendix, cross-country comparisons of interenterprise arrears are subject to the caveat that the definition of when a payment becomes overdue and hence when an interenterprise credit becomes an interenterprise arrear varies across countries.

3/ See Fan and Schaffer (1994), p. 158.

4/ The interenterprise payables of Russian enterprises on "File No. 2" of banks amounted to rub 3 trillion by end-June 1992. See Fan and Schaffer (1994), p. 174.

Table III.2. The Baltics, Russia and Other FSU Countries:
Interenterprise Arrears 1/

(End of period)

	1992	1993				1994		
		1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.
(As percent of GDP) 2/								
Azerbaijan	...	1.8	9.1	12.6	15.0	13.5	14.6	...
Kazakhstan	1.7	1.9	1.9	3.4	5.0	4.0	3.7	7.1
Kyrgyz Republic	...	9.1	8.7	9.0	7.9	...	...	...
Lithuania	...	6.8	8.3	11.5	8.8	5.4	...	...
Russia	3.0	4.0	2.6	...
Of which: industry and construction	...	2.6	2.3	2.2	2.7	3.6	2.3	...
Turkmenistan	2.9	...	...
Ukraine	0.8	0.7	1.8	4.6	...	...

(As percent of broad money) 3/

Azerbaijan	34.2	5.8	19.7	44.9	42.8	57.8	56.7	...
Kazakhstan	9.2	12.8	12.8	28.4	81.1	35.3	...	214.2
Kyrgyz Republic	107.8	105.0	129.1	160.5	250.7	248.1	256.4	227.8
Lithuania	52.2	74.6	181.1	119.7	50.2	43.8	45.5	...
Russia	...	...	...	26.5	33.1	49.5	48.0	54.7
Of which: industry and construction	19.3	19.9	17.1	24.1	29.6	44.6	42.9	45.5
Turkmenistan	...	...	...	...	63.1	66.2	81.4	100.8
Ukraine	...	1.5	6.9	6.7	33.2	70.3	...	...

Memorandum Items:

(Interenterprise payables as percent of GDP) 2/

Belarus	...	...	3.9	3.5	8.1	15.6	13.9	...
Latvia	23.8	...	...	...	16.2	...	...	...

(Interenterprise payables as percent of broad money) 3/

Belarus	...	38.5	36.5	36.2	185.8	114.8	141.2	...
Latvia	204.0	...	...	...	79.5	...	...	...

Sources: Data provided by the authorities; and staff estimates.

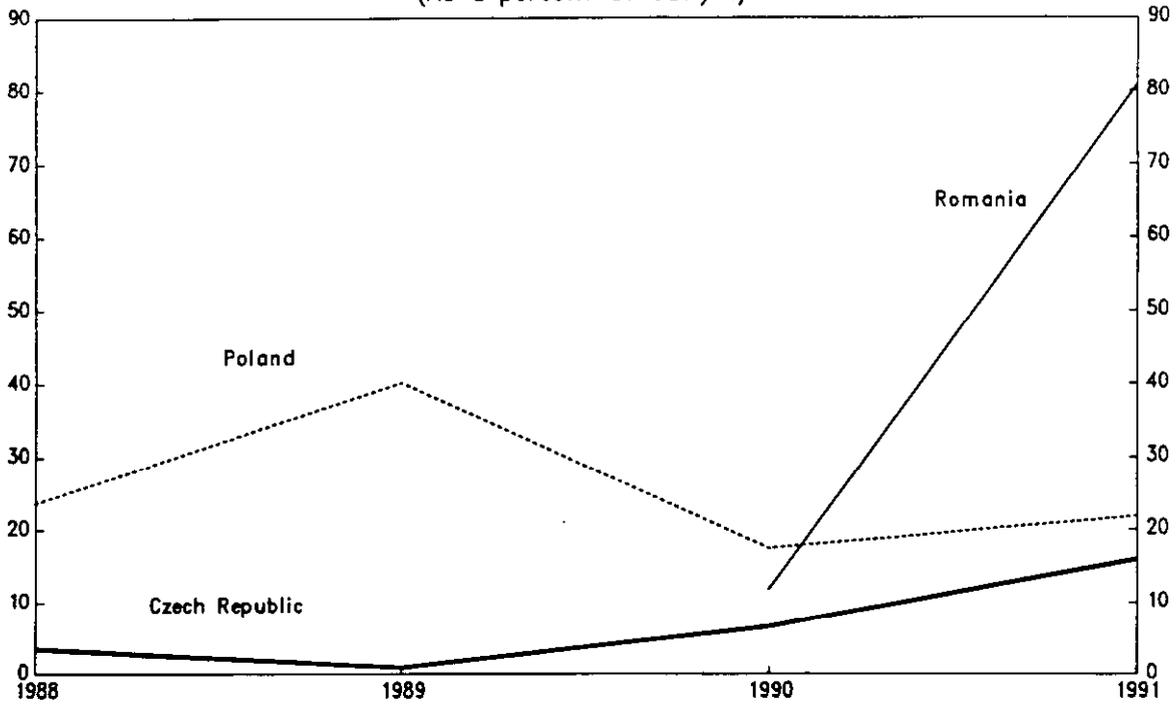
1/ Defined as overdue payables for every country except Turkmenistan, for which the data refer to overdue receivables.

2/ Defined as average during the quarter as a percent of annualized quarterly GDP.

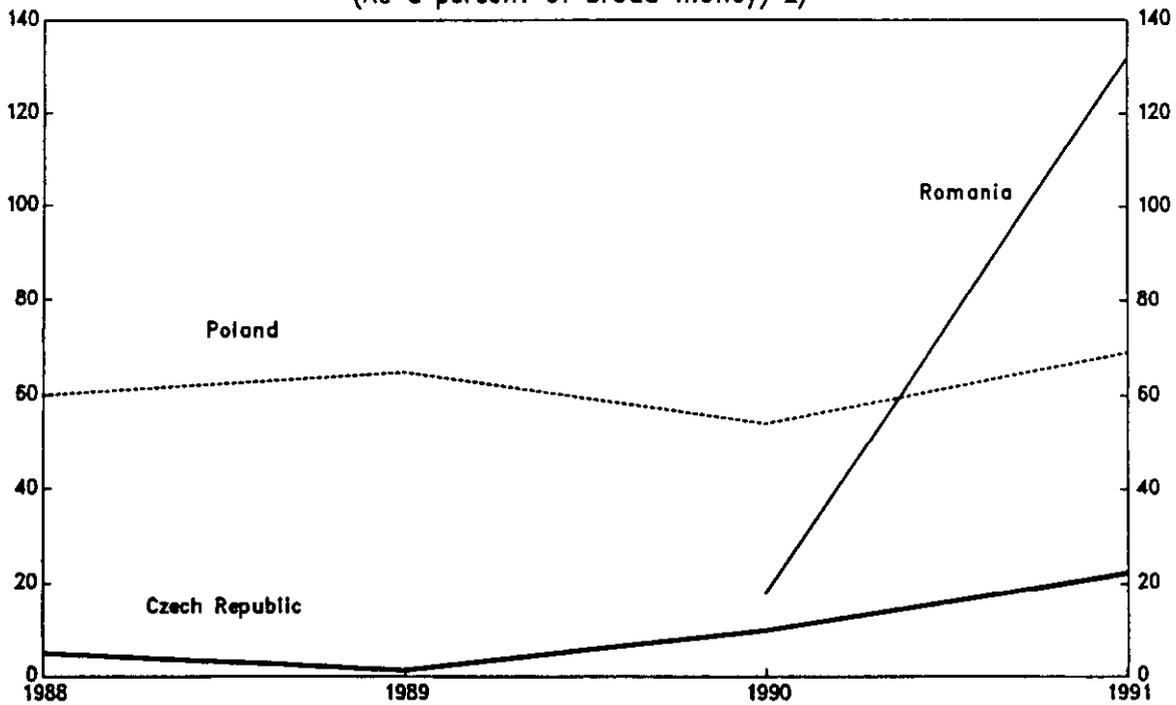
3/ Defined as the ratio of the end-of-period stock of broad money.

CHART III.1
Other Central and Eastern European
Countries in Transition:
Interenterprise Arrears, 1988-1991

(As a percent of GDP) 1/



(As a percent of broad money) 2/



Source: Staff estimates.

1/ End-year stock in relation to annual GDP.

2/ End-year stock in relation to end-year stock broad money.



commercial banks. Furthermore, net positive balances of creditors remaining after that operation--which amounted to about 3 1/2 percent of GDP--were then monetized by making them useable for tax payments and for paying off liabilities to banks. ^{1/} While a significant arrears problem did not re-emerge in Russia until end-1993, with the level of overdues averaging around 2 1/2 percent of GDP in the first half of 1993, the clearing and bail-out operation clearly had expectational and inflationary implications.

c. The mid-1993 to late 1994 period

For the period from mid-1993 to late-1994, the countries for which information is available can be placed in three distinct groups: (i) Latvia, Lithuania, and the Kyrgyz Republic, where the arrears problem diminished; (ii) Russia and Turkmenistan, where it slowly increased; and (iii) Azerbaijan, Belarus, Kazakhstan, and Ukraine, where it escalated in a rapid manner.

In Latvia, total interenterprise credits fell below 18 percent of GDP by the end of 1993, implying even lower values for overdues. In Lithuania, overdue payables, after a modest increase in the third quarter of 1993, declined steadily not only in relation to GDP, but also as a proportion of broad money (Table III.2). The evolution of arrears in the Kyrgyz Republic was similar to that in Lithuania with one exception: although the stock declined as a proportion of GDP, the ratio to broad money remained stubbornly high at around 2 1/2 until the third quarter of 1994.

There was a rather modest rise in interenterprise arrears--as measured against GDP--in Russia and Turkmenistan during this period. Overdue payables did increase more significantly in relation to broad money in both countries, however, with implications for the effective conduct of monetary policy. Also, the interstate component of interenterprise arrears was a problematic aspect of the arrears problem in both Russia (Table III.3) and Turkmenistan, reflecting in particular debts on energy deliveries. In Russia, arrears involving the fuel and electrical energy sectors amounted to almost one half of total interenterprise arrears in 1994 (Table III.4). In Turkmenistan, overdue receivables of gas companies from enterprises in other states of the region rose by about \$1/2 billion during the first nine months of 1994 to about 60 percent of GDP at end-September, 1994. These nonpayments significantly complicated inflation control in Turkmenistan, with the authorities granting additional credits to enterprises in lieu of the receipts from abroad.

In contrast, interenterprise payables and arrears rose to relatively high levels in Azerbaijan, Belarus, Kazakhstan, and Ukraine during this

^{1/} See Rostowski (1994), pp. 19-21.

Table III.3: Russia: Interstate Interenterprise Arrears
(as of October 1, 1994)

(billions of rubles)

State	Receivables of Russian enterprises from enterprises in the CIS 1/ and Baltic countries			Payables of Russian enterprises to the enterprises in CIS and Baltic countries			Net receivables	
	Total	Of which: overdue	Share of overdue in percent	Total	Of which: overdue	Share of overdue in percent	Total	Of which: overdue
Armenia	8.5	4.3	50.2	9.8	2.7	27.8	-1.4	1.5
Azerbaijan	33.9	28.3	83.5	16.4	8.4	50.9	17.5	20.0
Belarus	267.7	158.8	59.3	136.0	66.8	49.2	131.8	92.0
Georgia	21.8	11.1	51.3	9.2	7.0	76.4	12.6	4.1
Kazakhstan	404.8	274.0	67.7	341.5	229.9	67.3	63.3	44.1
Kyrgyzstan	33.9	26.9	79.6	27.8	19.2	69.1	6.1	7.7
Uzbekistan	147.2	92.7	63.0	64.8	36.4	56.2	82.5	56.3
Ukraine	769.8	513.4	66.7	354.5	209.3	57.3	415.4	310.3
Tajikistan	42.4	32.5	76.7	10.2	3.5	33.7	32.1	29.1
Turkmenistan	30.4	24.9	82.0	8.8	6.1	70.0	21.7	18.8
Moldova	42.1	35.1	83.2	14.0	7.9	56.2	28.2	27.2
Subtotal	1,802.9	1,202.4	66.7	993.2	591.2	59.5	809.7	611.3
Latvia	36.9	18.7	50.7	9.7	4.2	43.2	27.3	14.5
Lithuania	28.3	11.0	38.8	18.2	4.0	22.0	10.2	7.0
Estonia	46.2	17.5	37.8	26.0	4.7	18.3	20.3	12.8
Total	1,914.5	1,249.6	65.3	1,047.1	604.1	57.7	867.4	645.6

Source: Goskomstat

1/ Commonwealth of Independent States consists of Russia and the other states of the FSU, except the Baltic states.

Table III.4. Russia: Sectoral Composition of Interenterprise Arrears

(Overdue payables, end of period)

	1992	1993				1994		
	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.
<u>(Sector's share in total overdue payables in the economy)</u>								
Industry	...	...	...	83.1	80.9	81.0	80.9	75.1
Construction	...	...	...	8.1	8.6	8.9	8.6	8.1
Agriculture	...	...	...	3.1	4.8	4.7	4.3	4.6
Transport	...	...	...	5.7	5.8	5.3	6.1	12.2
<u>(Share of overdue payables in total payables in the sector)</u>								
Industry	41.6	37.6	36.4	37.0	40.5	45.1	49.3	55.9
Construction	41.8	36.8	32.8	30.3	37.5	43.7	42.9	45.7
Agriculture	...	...	...	22.4	34.1	40.7	42.1	50.0
Transport	...	...	...	24.5	29.4	15.9	20.0	39.5
<u>(Subsector's share in total overdue payables in industry)</u>								
TOTAL INDUSTRY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Electrical energy	3.2	4.3	3.2	5.1	7.1	13.0	15.2	16.2
Fuel	21.0	23.4	28.4	30.5	26.2	30.5	29.9	30.3
Ferrous metallurgy	15.1	13.1	10.8	12.6	11.0	9.7	8.9	9.1
Non-ferrous metallurgy	6.6	6.3	7.8	5.7	7.0	4.7	4.9	4.3
Chemicals	12.9	15.1	12.8	13.2	14.7	12.9	12.2	10.9
Machinery	20.3	17.6	16.1	15.5	15.7	13.0	14.1	16.0
Timber processing and paper	5.3	4.7	4.3	4.3	4.5	3.4	3.5	3.2
Building materials	4.0	3.7	2.8	2.5	2.9	2.7	2.5	2.3
Glasses industry	0.2	0.2	0.1	0.2	...	0.2	0.3	0.2
Light industry	3.6	2.6	2.5	1.7	1.8	1.7	1.7	1.5
Food industry	6.4	7.9	10.0	8.0	7.9	7.2	6.0	5.1
Other industry	1.4	1.1	1.1	0.8	1.1	0.9	0.9	0.8
<u>(Share of overdue payables in total payables in the subsector)</u>								
TOTAL INDUSTRY	41.6	37.6	36.4	37.0	40.5	45.1	49.3	55.9
Electrical energy	27.9	22.5	21.2	24.2	27.7	46.1	48.6	52.4
Fuel	33.4	34.5	35.9	39.4	39.4	46.4	53.0	64.3
Ferrous metallurgy	57.6	50.8	42.3	45.4	43.9	45.2	44.1	52.9
Non-ferrous metallurgy	45.2	34.2	36.9	31.1	49.5	40.3	46.5	45.3
Chemicals	48.6	50.0	45.2	50.1	54.8	55.8	60.6	63.1
Machinery	43.7	37.8	36.8	37.4	41.7	42.1	47.1	55.4
Timber processing and paper	52.9	44.9	45.1	46.4	50.2	49.2	55.8	60.2
Building materials	59.8	52.0	45.8	38.4	45.6	46.5	49.5	52.0
Glasses industry	37.3	26.0	24.6	29.0	...	34.8	48.9	46.4
Light industry	46.4	34.7	33.9	29.4	34.6	37.3	45.3	49.9
Food industry	27.6	29.2	30.3	24.5	31.4	37.0	37.8	41.4
Other industry	36.5	22.3	20.5	22.4	22.1	30.7	30.5	34.2

Sources: Data provided by the authorities; and staff estimates.

period. 1/ In Ukraine, arrears began to re-emerge relatively soon after an arrears clearing and bail-out operation conducted in February 1993, and increased sharply in late 1993 and early 1994, particularly in relation to broad money. Two further netting operations were carried out in Ukraine in 1994. In Kazakhstan, arrears rose sharply during the second half of 1993. In response, in early 1994, the Government of Kazakhstan carried out a netting operation, following which, net creditors were paid the full amount of their claims. Part of these payments were in the form of government bonds, where the debtors became liable to the Government, and their payments obligations were to be enforced through the threat of bankruptcy. In the event, most of the debt to the Government was not repaid, and liquidation proceedings have only been initiated for a small proportion of the debtors. 2/ Moreover, arrears once again rose sharply in the third quarter of 1994. 3/ Finally, in Azerbaijan and Belarus as well, interenterprise arrears escalated in spite of clearing operations carried out in the third quarter of 1993.

Although little information is readily available regarding the volume of interenterprise arrears in Uzbekistan, it is likely it also belongs to this third group of countries. And indeed, the Uzbek authorities undertook, under the auspices of the central bank, a netting out of gross overdue interenterprise claims and liabilities between August 15 and September 5, 1994.

Thus, indications are that by late 1994, while arrears ceased to be a serious problem in some countries, they appear to be a significant concern in a number of others. Moreover, in Russia (Table III.4) and Turkmenistan, while the aggregate level of domestic arrears appeared to be modest, they were highly concentrated in a few sectors. And it would seem that the higher the concentration, the more the pressure for an ultimate government bailout of such overdue obligations. Indeed, the one of Turkmenistan serves as a vivid example of this.

1/ For Belarus, separate data on overdues are not available, but one might presume that the rise in total payables was accompanied by a rise in arrears.

2/ Provisional results showed that there was a reduction in gross arrears of around Tenge 38 billion, or 8 percent of GDP. Claims of net creditor enterprises were settled by a payment by the Government of Tenge 1.1 billion (mainly to the energy sector) and Tenge 8 billion of one-year, U.S. dollar indexed treasury bills, bearing a 3 percent interest rate.

3/ Kazakhstan is a major producer of energy like Russia and Turkmenistan. While no information is readily available on overdue interenterprise receivables in Kazakhstan, a large part of it also appears to be concentrated in the energy sector.

3. Factors causing arrears

Interenterprise credit and arrears are common features in all market economies, and it can be argued that some increase in the volume of such credit and arrears--from very low initial amounts--can be expected as these economies move toward market-based systems. 1/ However, it is important to distinguish between the natural adaptation to markets and special factors present during transition that drive the accumulation of arrears. This section provides a brief discussion of these different factors.

a. Normal factors operating in a market economy

Interfirm trade credit is quite substantial and normal in market economies. 2/ The various explanations of trade credit include: (i) transactions costs associated with cash payments; (ii) informational costs associated with bank lending or credit market imperfections (e.g., interest rate spreads) that raise the relative cost of bank loans; and (iii) goods market imperfections that force firms to provide credit as a marketing activity. 3/

Market imperfections can be hypothesized to have played a significant role in the rapid growth of interenterprise credit in the Baltics, Russia, and other FSU countries from insignificant initial amounts. The process of replacing the previous system of planning and state orders by a set of perfectly functioning product markets will be gradual and tortuous. Furthermore, the system of distributing a large part of the available limited amount of credit to selected enterprises at subsidized rates continued well into 1994 in many of these countries, and was a source of credit market imperfections. 4/ The spreads between lending and deposit rates in many of the countries--for example, more than 50 percentage points on an annual basis in Russia in the second half of 1994--continued to be very high through 1994.

However, and although overruns on informal credits between firms also are common in market economies, 5/ the explanation of maturity overruns on the scale registered in some of these countries cannot rely on these

1/ See Begg and Portes (1992), and Fan and Schaffer (1994).

2/ For example, stocks and flows of trade credit, on average, are about twice the corresponding amounts of bank credit in the United States and the United Kingdom, see Crawford (1992).

3/ An overview of the literature of trade credit is available in Crawford (1992).

4/ According to enterprise surveys in Russia, part ownership of banks by enterprises made borrowing easier--another evidence of credit market imperfection. See Fan and Schaffer (1994), p. 174.

5/ For example, according to a survey of more than seven hundred firms in the UK, the maturity overrun on trade credit is about one month on the average. See Fan and Schaffer (1994), p. 158.

imperfections alone. This leads to possible explanations of the arrears problem in terms of structural factors including the expected policy stance of the governments.

b. Additional factors in the Baltics, Russia, and other FSU countries

In the initial stages of transition, the managers of state-owned enterprises have little experience with the rules of the market, and the institutional arrangements and incentives structure do not change in a dramatic way toward encouraging market behavior. The high level of uncertainty regarding relative prices and prospective stance of macroeconomic policies, and regarding the future ownership and management structure, compound the problem of inadequate incentives for efficient management. In such circumstances, managers seek to avoid conflicts with the work force on employment and wage issues, often buying raw materials and inputs on credit and maintaining a level of production even if there is insufficient demand. Such behavior may lead to either the accumulation of inventories or delivering output in exchange for future promises to pay to buyers with questionable prospects. When the promises to pay are not honored in time, arrears build up. The absence of a sound banking and payments system, of a stable macroeconomic framework, and of suitable laws and institutions, perpetuate a management culture inappropriate for a market economy and financial discipline. The role of these relevant factors in the evolution of interenterprise arrears is briefly discussed below.

(1) Underdeveloped financial systems

Underdeveloped financial systems are likely to have contributed to the growth of interenterprise credit and arrears in the region. The services provided by financial intermediaries in market economies, for example, making payments and facilitating transactions and risk management, monitoring firm managers, and credit assessment, were either irrelevant or of very minor importance under central planning. 1/ During the initial stages of transition, the supply of these financial services expanded, but generally fell far short of demand. Enterprises were led to organize financial arrangements among themselves to sustain trade and output. In the process, suppliers assumed high risks which at least partly ended up as overdue receivables.

Delays in the settlements system also were a factor. Under the newly emerging market system, payments orders could be executed only after clearing, and lack of adequate computing and communication facilities led to inordinate delays in both domestic and interstate payments. 2/

1/ See Caprio and Levine (1994), pp. 2-3.

2/ Reportedly, a payment order could take as long as three months to be executed.

The disintegration of large enterprises into many autonomous units, often across state boundaries, also may have contributed, by increasing overall credit needs of enterprises and the volume of financial transactions in the economy.

Credit market imperfections also may have exacerbated the arrears problem, particularly when restrictive monetary policies were pursued in some of the countries to combat high inflation. In imperfect credit markets characterized by widespread use of artificially low interest rates and credit rationing, a deceleration in the growth of credit expansion may have led to the substitution of bank lending by forced lending by enterprises to each other, and hence interenterprise arrears.

Thus, inadequate progress in financial sector reform is likely to have contributed to the build-up of arrears. Indeed, the containment of the interenterprise arrears problem in Latvia and Lithuania may partly be attributed to the progress made towards establishing sound and efficient banking and payments systems.

(2) Uncertainties, macroeconomic instability, and collusion

Transition in the Baltics, Russia, and other FSU countries has been characterized by unpredictability of the economic environment. Uncertainties have prevailed in relative prices, in macroeconomic policies, and in the availability of supplies of inputs and markets for output because of disruption in traditional interstate trade and financial linkages. In such circumstances, enterprises have had extreme difficulties evaluating credit risks of different buyers, and may have found it optimal to seek buyers indiscriminately but at a price adjusted upwards to take account of higher credit risk. 1/ A consequence of such behavior has been the accumulation of arrears, as a high proportion of credits have proven to be of bad quality.

Dramatic changes in relative prices following price liberalization, particularly with regard to energy products, has severely affected the profitability of enterprises--particularly those intensive in energy-use. Thus, the asset quality of receivables from such enterprises has suffered heavily in the process, and has contributed to the arrears problem. 2/

The failure to address large macroeconomic imbalances and associated balance of payments problems, also has had implications for the accumulation of arrears in Russia and some of the other FSU countries. After the

1/ See Kim and Kwon (1995).

2/ Residential and industrial customers were in arrears to utilities producing electricity and heating, which in turn were in arrears to the gas and petroleum companies. In energy importing countries, these led to large overdue payables to foreign suppliers.

dissolution of the U.S.S.R., the volumes of interstate interenterprise trade--historically high in energy, raw materials and intermediate products--remained substantial. Aside from the same factors influencing domestic interenterprise arrears, shortages of foreign exchange, and/or the escalating domestic costs of imports because of rapidly depreciating currencies, are likely to have contributed to the rise in interstate arrears.

The determination of the government in pursuing stabilization policies is often tested by enterprises in transition economies by collusive behavior. Such behavior, often only "implicit" and without a well coordinated scheme, may arise from the enterprises' rational beliefs about each other's likely response to policies in light of management's and workers' entrenched interests. 1/ Frequently the initial attempt at stabilization started off with attempts by the authorities to control inflation by curbing the supply of credit from the central banks. One of the aims of such a tight monetary policy was to promote financial discipline among enterprises, induce them to restructure, and to encourage them to substitute internal finance for bank credit. In response to a tightening in financial policies, enterprises--anticipating the likely response of other enterprises--may have delayed any adjustments in their behavior, guessing that if every enterprise built up arrears, the Government would be unwilling to risk the consequences of a systemic collapse and would be forced to ease policies. In other words, the Government's policy stance was not seen to be credible and enterprises stopped paying each other knowing that a general bailout was inevitable down the road. 2/

Developments in Russia during the first half of 1992 are a case in point: the uncertainties regarding the future policy stance--including the tenure of the central bank governor--are likely to have contributed significantly to the expectation of a bailout, a rapid build-up of arrears, replacement of the central bank's management and, indeed, an eventual bailout in the latter part of the year. 3/ Similarly, the rise in arrears that accompanied the tightening of monetary policy in Russia during the first quarter of 1994 may indeed partly reflect collusive behavior by some selected and big enterprises. The arrears were concentrated in the energy, ferrous metallurgy, chemicals, machinery and construction sectors, which are dominated by large state-owned enterprises from the Soviet era. The enterprises involved are typically those which are commonly perceived to be "too big to fail", and it is likely that expectations--or at least hopes--of an eventual bailout by the government encouraged the accumulation of

1/ See Perotti (1994).

2/ For example, according to an enterprise survey in July 1993 in Bulgaria, even when no clearing of interenterprise arrears was being actively debated, a fifth of the managers of state enterprises covered by the survey admitted that suppliers provide goods on credit to uncreditworthy enterprises in the expectation of a bailout. See Perotti (1994).

3/ See Hernández-Catá (1994), pp. 8-9.

arrears. 1/ The lack of credibility in the authorities' tight policy stance was likely reinforced by the earlier bailout in 1992, and also the departure of key reform-minded ministers from the Government in early 1994.

Any demonstration of the lack of steadfastness of government policies-- in the form of a *temporary* loosening of monetary policy, a selective doling out of subsidies to state enterprises, or netting out of gross interenterprise arrears and clearing the remaining claims by central bank credit--only adds to the arrears problem in the long run (see below). Thus, the determined pursuit of stabilization policies in Latvia and Lithuania resulted in a rapid deceleration of inflation, a stable macroeconomic framework, and a containment of the arrears problem. On the other hand, the stop-go nature of policies in a number of countries, and the bailout of enterprises through multilateral clearing of interenterprise arrears, seems only to lead to a quick re-emergence of arrears and contributes to the persistence of the protracted problem of high inflation and macroeconomic instability.

It should be noted that the sharp rise in the arrears to broad money ratio in some of the countries of the region has strengthened the appeal of the "excessive credit contraction hypothesis"--a hypothesis that has its root in the simultaneous drastic falls in real credit and output in those countries. 2/ 3/ But as already discussed above, the substitution of bank lending by interenterprise arrears reflects imperfections in the credit market and structural inadequacies. Any decrease in arrears brought about by a one-shot increase in credit is likely to be transient at best, with the gain quickly dissipated through a fast transmission of higher credits into even higher prices. 4/

(3) Structural inadequacies

In the Baltics, Russia, and other FSU countries, like in other transition countries, the transformation toward market-based systems began without the laws and institutions necessary to support the functioning of markets. Accurate and meaningful financial statements, clearly defined

1/ The prevalence of arrears may also differ between upstream and downstream industries. Producers and retailers of final goods may get paid in cash, but "pay" their suppliers with arrears, while producers of intermediate goods may "pay" and get "paid" with arrears. But it is unlikely that the upstream and downstream differences alone explain the sectoral concentration of arrears.

2/ See Chapter I on the output decline for a discussion of the general plausibility of this hypothesis.

3/ See Calvo and Coricelli (1994).

4/ The containment of the inflationary impulse and establishment of credibility through price/wage controls is not an appealing option because of the high level of initial distortions in relative prices and wages in transition economies.

property rights and a legal system with full powers of enforcing contracts are necessary for the proper functioning of the loan market and limiting loan delinquencies. In a functioning market economy, failure to service a loan obligation on time has implications for future access to credit, and ultimately involves the threat of bankruptcy. Enterprises do not incur arrears when the costs of incurring them are high, ^{1/} and the legal and institutional framework is crucial for determining these costs. Of course, structural reforms need to be reinforced by a clear "no bailout policy"; since any bailouts strengthen the expectation of yet another bailout in the future.

In the event, in most of the region, accounting laws were inappropriate for a market economy, and enterprises did not have accurate and meaningful balance sheets or profit and loss statements. Property rights were not clearly defined and there was no bankruptcy law with the power to fully enforce contracts. The emerging private sector was dominated by an overwhelmingly large state-owned sector where corporate governance left much to be desired. The dismantling of planning along with the weakening of central controls led to the transformation of state-owned enterprises and banks into organizations controlled by insiders (managers and workers), particularly prior to privatization. In such circumstances, extremely weak balance sheet positions encouraged risk-taking by enterprise managers and actions were taken to protect short-term output and employment at all costs.

The interaction between inadequate bankruptcy laws and weak balance sheet positions of enterprises led to "creditor passivity" and contributed to the perpetuation of the interenterprise arrears problem. ^{2/} First, creditors may not have initiated bankruptcy proceedings because the costs of enforcing bankruptcy exceeded the expected value of the debtor's assets, or because of the option value of waiting. Second, initiating action against the debtor enterprise may have signalled the existence of financial problems in the creditor enterprise itself, and hence undermined the confidence of the creditor's creditors. Third, with multiple creditors, the incentive for individual creditors to wait for others to initiate proceedings may have been acute, particularly when the net worth of the debtor was in doubt.

Thus, together with better bankruptcy laws, restructuring--including recapitalization--and privatization of the state-owned banks and enterprises is crucial for establishing a framework of adequate incentives and efficient operation of economic activity in these transition economies. Indeed, the evolution of interenterprise arrears in the Baltics, Russia, and other FSU countries clearly demonstrate the importance of structural reform for

^{1/} For example, in a simple model, Calvo and Coricelli (1994) have shown that an enterprise will not incur arrears, if it reckons that arrears incurred this period increase into costs next period at a rate higher than the rate of interest that wage earners can earn on their deposits.

^{2/} See Begg and Portes (1992) and Mitchell (1993) for a discussion of creditor passivity.

containing arrears. Latvia and Lithuania, which have made significant progress in the structural front, have also been successful in managing the arrears problem.

4. Policy options

Interenterprise arrears can be contained on a sustained basis only by ensuring that enterprises adjust to the emerging market system and observe financial discipline. A stable macroeconomic framework and a structure of appropriate incentives are essential in this regard, and can be achieved only by the steadfast pursuit of strong stabilization policies and accelerated structural reform, including financial and enterprise sector restructuring. Such policies provide the best antidote to the arrears problem over the medium term.

Some transition countries, such as the former Czechoslovakia, Poland, and the Baltic states of Latvia and Lithuania have followed a hands-off policy towards interenterprise arrears. These countries have left the resolution of the problem to the market, and the general experience so far is that the approach is successful. On the other hand, the gridlock created by interenterprise arrears sometimes poses a serious threat--or a perception thereof--of an imminent collapse of the payments system, and hence production, in the process of transition. Thus, countries in the region have taken exceptional measures--some more than once--to deal with interenterprise arrears.

Romania is a country in eastern Europe which took exceptional measures on several occasions in 1991-92 to deal with interenterprise arrears. 1/ The measures included government-sponsored netting out exercises, the extension of central credits and government transfers and, on one occasion, a scheme under which banks were required to extend credit to enterprises, under government guarantees, for the sole purpose of clearing arrears. 2/ The creation of additional liquidity as a result of these operations was clearly inflationary; while there was a temporary reprieve to the arrears problem, ultimately the government moved to enact a stringent bankruptcy law

1/ Albania and Bulgaria also took some exceptional measures involving public sector financing to address interenterprise arrears. In January 1993, the Albanian authorities adopted a decree to move enterprises from a system of automatic post-shipment payments administered through banks to a system of pre-shipment payments, and also set aside funds to provide selective partial compensation to net creditor firms with good performance in the past six months. In Bulgaria, a debt write-off was organized in December 1992, mainly to enable the energy sector severely affected by the problem of unpaid bills to partially clear off its arrears to enterprises and banks.

2/ See Khan and Clifton (1992).

and launch a public campaign to combat the moral hazard problem inherent in the implementation of such schemes and convince enterprises that no further bailout was likely.

The experience with exceptional policy measures to deal with interenterprise arrears indicates the need for extreme caution in applying such measures in the Baltics, Russia, and other FSU countries. Thus, in designing any such measures to address the "stock" problem of existing arrears, it is critical to ensure that the measures include steps to avoid the emergence of new arrears (i.e., the "flow" problem), and also are governed by the following two key considerations. First, the creation of a market environment where enterprises must accept responsibility for their own indebtedness, and must behave in a financially responsible way or face the consequences. Second, at a time when the governments are facing the urgent and difficult task of reducing inflation, the measures must avoid additional credit creation that could lead to new inflationary pressures.

a. The stock problem

Resolution of the stock problem should be achieved by encouraging debtors to reschedule their overdue payables through voluntary bilateral contacts with creditors. In addition, enterprises should be encouraged to securitize their interenterprise claims to make them tradable: an enterprise in need of liquidity could sell an interenterprise claim at a discount to another firm; the buyer could then either hold the claim or set it off against its own liabilities to the original debtor firm (on whom it now owns a claim), if such liabilities exist. Banks could also become involved in this activity, purchasing and selling securities subject to normal prudential regulations. The opportunity for profitable trade in interenterprise claims in a market environment should help resolve the problem of arrears. Development of requisite safeguards to prevent insider trading and other manipulative practices in the securities market should proceed in parallel with the securitization of claims.

In the short-term, the governments and central banks can promote a solution to the "stock" problem of existing interenterprise arrears by promoting decentralized bank-enterprise debt work-outs with a menu of options, as well as a secondary market where arrears could be traded. Such an approach could lead to a netting out of interenterprise arrears without any extension of government or central bank credit, and send a strong signal to enterprises and banks that the authorities will no longer bail out firms with arrears or bad debts, thereby promoting the restructuring process through the adoption of hard budget constraints. ^{1/}

The involvement of governments and central banks should be limited to providing an adequate regulatory and institutional framework, for example,

^{1/} The approach played a part in the restructuring of enterprise debt in Poland.

regulations that appropriately govern trading in interenterprise credits. Rules allowing limited forms of multilateral netting, whereby a group of firms formed an arrangement to net out debts within the group, should also be considered. In any event, market-based solutions are unlikely to work without some credible threat of bankruptcy for notorious delinquencies, and there should be no government guarantees for the securities.

Public concern over the arrears problem does lead to pressure on governments to organize clearing schemes to net out gross arrears. Such explicit netting out exercises need not directly involve credit creation. However, an important argument against compulsory netting operations--whether or not they involve the creation of additional bank credit--is that the expectation of even these operations creates perverse incentives. Firms will be more willing, on the one hand, to withhold payment for their inputs and, on the other, to ship their output to customers they strongly suspect will not pay--calculating that these arrears will cancel out in the next netting operation. Moreover, there is always a strong risk, particularly because of uncertainties regarding the valuation of claims, that the governments' involvement creates expectations of a bailout of the net claims remaining after the implementation of clearing scheme. Furthermore, such netting exercises take time to complete, and create considerable uncertainty for macroeconomic management. These considerations argue strongly against a government-sponsored netting exercise.

b. Preventing new arrears

Apart from measures to improve the payments system, so as to shorten the period of uncertainty about the creditworthiness of the payer, policies to prevent new arrears should focus on convincing enterprises that they must accept responsibility for collecting their own claims on other enterprises, and that they should not expect government intervention of any sort. In addition to avoiding any bail-out component in the measures designed to deal with the stock of existing arrears, a few other specific steps could be helpful.

First, bankruptcy criteria and judicial procedures should be streamlined with a view to providing not only for the closing of insolvent enterprises, but also for their reorganization in an attempt to avoid future liquidation and closing. Creditors should be empowered to sell their debtors' assets if debts are overdue for more than a certain period of time. Any judicial protection debtors receive to delay such asset sales should be accompanied by appropriate interest and penalty payments on the overdue claims.

It is unrealistic, however, to expect a bankruptcy system to emerge rapidly just with the enactment of the appropriate laws. Given the relative inexperience of judicial courts in bankruptcy cases and the limited availability of trained liquidators, and hence the uncertainty of the judicial awards, creditors tend to fight shy of becoming "pioneers" and

incurring large start-up costs in bankruptcy proceedings. 1/ Until bankruptcy procedures are working smoothly in convincing enterprises to alter their behavior and be financially responsible, it will be essential for governments to clearly demonstrate their willingness to allow enterprises to close. The government should identify a narrow set of enterprises responsible for a large proportion of the arrears. After monitoring these enterprises for a clearly defined period, the Government should decide on their long-term viability. If these enterprises are deemed to be not viable, then bankruptcy proceedings should be initiated by the government. 2/ 3/

Second, to ensure that managers are accountable for all payments obligations of their enterprises (including taxes and wages), governments should impose financial and administrative penalties on managers of state enterprises, including termination of service, and should acquire the legal authority to place restrictions on the wage bill of state enterprises which have arrears in excess of agreed limits. 4/

Third, for customers with arrears in excess of agreed limits, state-owned enterprises should be required by law to ship products only on the basis of preshipment payment or on the basis of promissory notes of the receiver of goods and services, duly guaranteed by commercial banks. 5/

1/ According to Rostowski (1993), p. 155, in Poland in mid-1991, i.e., 18 months into the stabilization program, there were only six trained liquidators for the courts to hire. The slow start-up in bankruptcies is illustrated by the experience of the Czech Republic, where according to Hrnčíř and Kláček (1995), the number of declared bankruptcies went up from 5 in 1992 to 60 in 1993 and further to 254 in 1994.

2/ In exceptional circumstances, if bankruptcy is not a viable option for a particular enterprise because of strategic considerations, the flow problem should be dealt with by restructuring of the enterprise and identifying budgetary support over the medium-term. Furthermore, it is important to make the provision of budgetary support conditional on, *inter alia*, the clearance of existing arrears and their avoidance in the future.

3/ In Poland, more than 1200 enterprises have been liquidated by the government because of their financial non-viability. In late 1992, the Government of Estonia initiated bankruptcy proceedings against two state enterprises because of tax arrears and insolvency.

4/ In Hungary, for example, the 1991 law on bankruptcy made the failure on the part of managers to declare bankruptcy, when payments were overdue for more than 90 days, punishable according to the provisions of the Civil Code. See Hungary--Ministry of Finance (1991), Section 9, page 19.

5/ In the former Yugoslavia in the 1980s, promissory notes with a maturity up to 90 days, which were the most important category of interenterprise credits, had to be guaranteed by a bank and backed by a physical transaction. See IMF (1988), p. 39.

Fourth, central banks should impose prudential limits on the amount of guarantees that a bank can extend in relation to its total assets. Promissory notes issued by enterprises should never carry government or central bank guarantees.

Finally, the timely and regular monitoring of the underlying financial position of state enterprises as well as their arrears should be ensured. A standard definition of overdue claims should be introduced and firms should be required to observe well-documented and transparent reporting requirements on a periodic basis.

c. Interstate arrears

Interstate interenterprise arrears among the Baltics, Russia, and other FSU states are an important problem, contributing significantly to interenterprise arrears in a number of sectors (particularly energy). With regard to these arrears, it is important to distinguish between quasi-governmental arrears incurred by state enterprises operating under intergovernmental trade agreements, and others. Much of the interstate interenterprise arrears pertaining to the energy sector are of the quasi-governmental variety, as in most cases trade in energy products was, and still is, carried out on the basis of intergovernmental agreements on trade volumes, prices and means of payments. ^{1/}

Governments should take responsibility for interstate interenterprise arrears of the quasi-governmental variety. The existing stock of such arrears should be regularized through the negotiation of rescheduling agreements with a realistic mechanism for settlement. In working to prevent the emergence of new arrears of this type, governments should remove themselves from inter-governmental trading activities. In the process, they should make it clear that they will not undertake any future responsibilities for payments related to this trade, so as to avoid creating expectations of financial assistance to suppliers in the future. Should the Government feel compelled in the immediate future to remain involved in interstate trade to some degree, any payments obligations should be clearly defined at the outset and reflected in the budget. Moreover, all parallel trade features under inter-governmental agreements should be eliminated so as to make trade transactions and associated payments fully transparent. All this would also foster the development of a transparent and market-oriented trading environment within the region.

Enterprises with overdue claims on others across state boundaries, without any involvement of the Government, should be left on their own to take responsibility for their decision to supply goods on credit. However,

^{1/} Some of these agreements call for parallel deliveries of goods, or essentially barter trade. This frequently complicates both the measurement of the arrears problem and the determination of who bears the ultimate responsibility for the arrears.

any resolution of the past stock of interstate interenterprise arrears of the purely non-governmental variety is crucially dependent on debtor enterprises having full access to foreign exchange to settle their debts. Governments should ensure availability of foreign exchange for settlement of interstate interenterprise arrears.

d. The energy sector

It is clear that the energy sector (including electricity, oil, gas, coal and peat) plays a critical role in the arrears situation in Russia and Turkmenistan. Most of Turkmenistan's, and also Russia's exports, of energy products to other FSU states is still carried out on the basis of intergovernmental or quasi-governmental agreements on trade volumes, prices, and means of payment. As noted above, intergovernmental trading activities should be eliminated as soon as possible. In the interim, they should be regarded as quasi-fiscal operations and be brought on budget, and the energy enterprises should be paid market prices on their supplies to other FSU states.

5. Conclusions

Interenterprise credit and arrears have increased in the Baltics, Russia, and other FSU states during the transition process. Such an increase is to be in part expected as a natural response to the transformation from central planning to a market-oriented economy. Furthermore, in a number of countries the levels of these credits and arrears appear modest by the standards of other east European countries during comparable periods of transition. In a number of countries, however, there were attempts to check the rapid increases in arrears by official netting and clearing operations, although these had inflationary consequences and sustained the lack of financial discipline in the enterprise sector. Also, in some countries, these credits and arrears have been heavily concentrated in a limited number of sectors, raising concerns that governments will not succeed in imposing discipline because enterprises in those sectors will be perceived as "too important to fail".

The experience of Latvia, Lithuania and several east European countries clearly demonstrates the importance of moving towards an efficient financial and payments system, achieving macroeconomic stability and furthering structural reform in promoting the ability and willingness of enterprises to honor their financial obligations on time. The accumulation of interenterprise arrears in a number of countries (e.g., Azerbaijan, Belarus, and Ukraine), on the other hand, is one of the many manifestations of slippages in stabilization and reform effort during the transition process.

The experience with the exceptional measures taken in a number of countries clearly demonstrates the temporary nature of relief to the arrears problem provided by such measures. Netting and bail-out exercises merely address symptoms rather than underlying causes, and indeed perpetuate and compound the problem by strengthening expectations of future bailouts of

debtor enterprises by the Government. Instead, governments should maintain a hands-off policy, and deal with arrears by promoting the financial health and discipline of enterprises through the maintenance of a stable macroeconomic environment, ensuring a sound banking system, and establishing the legal and institutional prerequisites of a market system through accelerated structural reform. Among the latter are bankruptcy procedures. It should be recognized, however, that improvements in these procedures are likely to add to financial discipline only gradually because of the need not only to pass the relevant legislation but also to develop courts and other institutions and to improve the benefit-cost ratio of enforcing bankruptcies. Thus, until bankruptcy procedures are working smoothly, governments--as the formal owners of state-owned enterprises--should take a highly visible role by identifying state enterprises that are major offenders of financial discipline through the accumulation of arrears, and initiating steps to restructure, privatize or close them down.

IV. Stabilization: Fixed Versus Flexible Exchange Rates

This chapter discusses issues regarding the choice of exchange rate regime in achieving price stability in the Baltics, Russia, and other FSU states: in particular, the relative merits of exchange rate based stabilization versus the targeting of money (or credit) growth in conjunction with a degree of exchange rate flexibility are examined. ^{1/} Section 1 briefly reviews the main arguments for and against the alternative exchange rate arrangements in the context of stabilizing from high or moderate levels of inflation. Section 2 discusses the recent policy strategy in the region in light of these arguments. Throughout, the objective of the chapter is limited to discussing alternative nominal anchors as tools for achieving a substantial reduction in inflation in the region. There is no attempt to discuss the relative merits of different exchange rate regimes as *permanent* policy choices, i.e., beyond the disinflation phase.

1. General considerations and experience

In reviewing the general arguments affecting the choice of exchange rate strategy for the purposes of stabilization, one may focus on four key considerations: (a) the costs of stabilization while the program is in place; (b) the effectiveness of the policy approach in bringing down inflation; (c) the costs resulting from program failure; and (d) the chances of failure and the conditions that would minimize the risk of failure. In the following, the two benchmark cases of fixed and flexible exchange rates--in conjunction with a monetary anchor--are compared along these lines.

a. In assessing the relative costs of disinflation of money versus exchange rate based programs with comparable stabilization objectives, two distinct considerations apply. First, the process of disinflation itself will usually have consequences for output, although probably less so in transition economies than in more developed market systems (see Chapter I). Standard arguments suggest that the output costs of a preannounced disinflation will depend on its credibility. ^{2/} Thus, the question is which type of nominal anchor is more likely to be viewed as sustainable--an issue to be taken up separately below. Second, since stabilization from

^{1/} IMF-supported programs involving flexible exchange rates in the Baltics, Russia and other FSU countries have typically entailed binding credit targets established on the basis of indicative monetary targets or projections. While, strictly speaking, such programs did not entail a nominal money anchor, with credit expansion the primary factor determining money growth in these countries we follow the literature (e.g., Sahay and Vegh, 1995) in referring to such programs as "money based".

^{2/} For example, Sargent (1982). See also Calvo (1989) and Chadha, Masson and Meredith (1992).

high levels of inflation in transition economies is not instantaneous (see Table IV.1), the total output cost of each approach will also depend on the nature of economic shocks other than the disinflationary shock itself which affect the economy during the stabilization period. 1/ Money demand shocks will have smaller consequences for output under a fixed exchange rate regime, since they can be absorbed by endogenous responses in the money supply. In contrast, under flexible exchange rates such shocks will lead to swings in domestic interest rates and the exchange rate (or, in the absence of a well developed capital market, rationing and cash shortages) and consequently fluctuations in output and velocity. On the other hand, unless goods and labor markets were perfectly flexible, real shocks affecting the demand for goods or the terms of trade would tend to be amplified under a fixed exchange rate regime, since the exchange rate and interest rates are not available as adjustment mechanisms. 2/

Unfortunately, both types of shocks are likely to be present in the economies in the region during the initial stabilization phase. On the one hand, as discussed in Chapter II, a number of factors have contributed to substantial volatility in money demand over the past several years. On the other hand, the initial stabilization period has coincided with external opening, domestic and other structural changes that have led to substantial real and external shocks. 3/ In practice, it is difficult to argue a priori which type of shock, in addition to the impact of disinflation itself, is more likely to impose significant output costs during stabilization. However, it is likely that relative to the huge output declines in the Baltics, Russia, and the remaining FSU which are an immediate consequence of structural change and political developments, the added output losses from choosing the more "costly" stabilization strategy will be minor. This suggests that the relative costs of stabilization

1/ See Fischer (1986), pp. 257-259 for a discussion of the effects of shocks under the alternative regimes.

2/ These arguments can be appreciated most simply in an open economy IS-LM framework, where a credible fixed exchange rate regime amounts to fixing the interest rate to world levels, implying a complete isolation of the real sector of the economy from money demand shocks, but at the same time eliminating interest rate adjustment to goods demand shocks. Fixing money has the opposite effect, since all short run adjustment to money demand shifts takes place through the interest rate and exchange rate and is thus passed on to the real sector, while goods demand shocks are mitigated by interest rate adjustment.

3/ For example, see Tarr (1994) and Chapter I for estimates of terms of trade shocks affecting the Baltic states, Russia, and other FSU countries since 1992.

Table IV.1 Countries in Transition: Stabilization and Inflation Performance

(Average quarterly percent changes)

	Quarter of Stabilization Attempt (Q0)	Q-1	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Money-based stabilization:											
Albania *	III/92	30.5	51.6	33.3	12.4	1.6	10.2	5.7	3.8	12.0	-3.0
Bulgaria	I/91			48.0	17.7	11.6	13.8	18.7	12.7	15.7	18.2
Croatia *	IV/93	109.9	77.4	-1.3	-2.7	0.6	0.4				
FYRM *	I/94	36.5	44.6	8.2	2.5	6.0					
Romania	I/91		40.6	40.3	24.2	34.3	50.3	26.7	16.3	34.5	36.7
Slovenia *	IV/91	31.8	63.7	48.5	24.1	10.1	8.1	7.0	3.9	4.0	6.3
Belarus	II/93	78.6	90.0	98.4	181.1	127.1	84.1	127.0	130.6		
Kazakhstan	II/93	139.6	84.6	86.8	170.2	137.4	122.8	92.6	50.4		
Kyrgyz Republic *	II/93	143.7	78.2	72.4	102.7	50.1	19.5	7.6	...		
Latvia *	II/92	222.5	69.5	57.4	53.8	12.9	3.4	1.7	12.7	13.3	5.8
Lithuania *	III/92	47.7	69.0	91.1	57.6	61.6	13.5	18.0	14.8	10.1	8.3
Moldova *	IV/93	70.5	74.2	82.7	23.3	5.1	9.1				
Russia	II/93	94.2	70.9	83.6	69.0	46.6	25.4	18.0	37.4		
Exchange rate-based stabilization:											
Czechoslovakia *	I/91	3.8	34.4	9.3	1.7	1.5	2.6	1.7	2.6	5.1	...
Poland *	I/90	48.9	49.2	23.0	10.4	15.4	26.1	11.7	6.1	9.7	12.9
Yugoslavia	IV/89	135.8	225.4	117.7	12.5	5.2	20.4	17	22.9	23.9	58.5
Estonia *	II/92	279.0	61.2	55.0	27.0	11.3	7.0	5.6	9.2	17.0	11.9

Sources: Data provided by authorities; and staff estimates.

* Successful stabilizations.

should be a less important consideration in guiding the choice of nominal anchor than the effectiveness of the anchor in reducing inflation quickly and the chances and consequences of failure, which are discussed in what follows. 1/

b. There are reasons for believing that exchange rate anchors may be more effective in controlling inflation than monetary anchors in the case of transition economies. 2/ First, the effectiveness of a disinflationary program will depend on how tightly the intermediate target--i.e., either the exchange rate or money--is linked to the ultimate target, namely the price level. If the situation of transition economies is one of shifts in money demand and unstable velocity--a view corroborated by the findings in Chapter 3--then this will reduce the effectiveness of money as an anchor, while an exchange rate peg continues to anchor the price level through its impact on tradables prices. Second, the control of the money supply may itself require more sophisticated policy mechanisms than the establishment of an exchange rate peg, which merely involves a decision to passively buy or sell foreign exchange at a given price.

While these arguments are valid and important, one should bear in mind that if the objective is to reduce inflation from very high to moderate levels, rather than achieving narrowly-defined low inflation targets, then the looseness in inflation control associated with monetary anchors might be of secondary importance. Also, as to the control of the monetary aggregates themselves, bank-by-bank credit ceilings--even though undesirable as permanent policy tools--may in certain circumstances provide an effective way of reigning in monetary expansion during the initial stabilization effort.

c. In general, the costs of failure may be expected to be higher in the case of exchange rate based stabilizations. First, the demise of an exchange rate peg typically involves a speculative attack on the currency, often with a large loss in foreign official reserves. In contrast, failure to attain monetary targets is likely to lead to an exchange rate depreciation broadly in line with excessive money growth, which does not impose a comparable direct cost on the government and may be reversible without requiring the program to be called off immediately. Second, the reputational cost to the government will in general be higher after the failure of an exchange rate based program. The Government will be faced with having failed to sustain a highly visible economic objective and the ensuing loss in credibility is likely to make it more difficult to stabilize in the future. This notion is supported by evidence suggesting that failures of exchange rate based stabilizations have typically resulted in a return to inflation levels higher than at the outset of the program (see Vegh (1992)).

1/ The question of which considerations are important beyond the disinflation phase would be a separate matter.

2/ See, for instance, Sahay and Vegh (1995).

The failure to observe monetary objectives under a money-based stabilization, accompanied by downward pressures on the exchange rate, would also do damage to credibility. However, missing monetary targets may be perceived less explicitly as a failure of the Government than the forced floating of the currency or a substantial devaluation, and it is easier for the target path to be subsequently adjusted to recoup slippages and preserve the essential goals of the stabilization program.

d. It has been argued that the public observability of the exchange rate at any point in time--as opposed to monetary or credit aggregates, which are only observable at substantial intervals based on data which is usually supplied by the government--will enhance the credibility of an exchange rate based approach. 1/ In addition, since the unpleasant consequences of failure should act as a deterrent to abandoning the program, an exchange rate based stabilization may induce a higher commitment to undertake the necessary accompanying stabilization measures--in particular fiscal adjustment--and thus a higher probability of success. On the other hand, while losses in confidence and private capital outflows may be harmful under both exchange rate based and money-based approaches, they will pose a direct threat to the program's nominal anchor only under an exchange rate based stabilization. Thus, success in stabilization under an exchange rate based approach will also *require* greater confidence in the Government's ability to stick to its target path of fiscal adjustment. 2/ In addition, the *magnitude* of necessary fiscal adjustment needed under a fixed exchange rate regime will most likely be higher than that under a money-based program, since pegging one's exchange rate will dictate a low inflation target that a money-based stabilization would not necessarily need to observe. 3/

These arguments seem to leave us with an open question, but one might argue as follows. Exchange rate based stabilization may be preferable whenever the underlying commitment of policymakers to fiscal discipline is

1/ See Sachs (1994) and references quoted therein.

2/ This fiscal adjustment would include reductions in quasi-fiscal expenditures, such as central bank directed credits and interest rate subsidies, where they are significant.

3/ Note that this argument need not apply to a crawling peg policy, since under a crawling peg a less stringent path of fiscal adjustment could be accommodated by designing the pre-announced exchange rate depreciation schedule accordingly. However, in conditions of uncertainty regarding future economic shocks and the political feasibility of achieving fiscal targets, the relatively high costs of failure associated with an exchange rate based approach may lead to a less ambitious inflation objective under a crawling peg than under a money-based program.

high ^{1/} and the risk of adverse shocks which are beyond their control is deemed reasonably small--i.e., when it is likely that policymakers will be in a position to undertake the necessary fiscal adjustment, thereby increasing the chances of success of the peg. On the other hand, if there are serious questions regarding the Government's underlying commitment to fiscal restraint or large uncertainties that may render adherence to fiscal targets difficult to achieve, then an exchange rate peg would hardly be credible. If tried, it would soon fail, with high costs to reputation and to reserve holdings.

In short, the commitment to an exchange rate peg is only one of the factors likely to influence fiscal discipline. It may be that the degree of discipline required for the peg to be sustainable simply exceeds the discipline that is likely to arise because of a desire to avoid the costs of failure. A fixed exchange rate regime may enhance the determination to adjust fiscally, but it is unlikely to work political miracles.

Before turning to a discussion of the experience with alternative anchors, it may be useful to briefly discuss the case of a currency board, which has been established in two countries in the region. A currency board may be viewed as an extreme form of pegging in the sense that it leaves even less room for discretionary monetary policy. ^{2/} Thus, the arguments presented so far regarding the standard case of a fixed exchange rate--the potential superiority of the exchange rate as a nominal anchor, the problems associated with adjusting to real shocks, the higher costs of failure and the more stringent implications for fiscal adjustment--will also apply to the currency board arrangement. However, both because of the implied hard currency backing and the institutional shielding of monetary policy from credit demands, a currency board has the advantage of being more credible than a simple peg, implying a lower risk of failure and lower cost of disinflation. This advantage must be traded off against the lack of flexibility which follows from the rigidity of the arrangement, in particular with regard to adjusting the exchange rate peg and supplying short-term liquidity to the banking system. In a situation of financial fragility and external shocks, this rigidity could imply significant costs. A currency board might thus be accompanied with stipulations for the emergency situations that would allow liquidity support without undermining the institution's integrity in normal circumstances. ^{3/}

* * * *

^{1/} The "underlying commitment of policy makers to fiscal discipline" refers to the *exogenous preferences* of policy makers, as opposed to the actual behavior of policy makers which will most likely be endogenous to the choice of nominal anchor.

^{2/} See Bennett (1993, 1994).

^{3/} On the problem of introducing some elements of discretion in the currency board arrangement, see Camard (1994).

The above arguments on both the relative effectiveness and the risks of exchange rate and money-based stabilization strategies are broadly corroborated by the experience of countries outside the Baltics, Russia, and other FSU area (the latter will be discussed separately below). First, as shown in Table IV.1 and emphasized by Sahay and Vegh (1995), all three attempts at exchange rate based stabilization in Central Europe (Yugoslavia, Poland, and Czechoslovakia) 1/ were highly effective in the sense that inflation was reduced to single digit quarterly levels within less than one year. However, one of the three--Yugoslavia--subsequently failed as the peg soon became unsustainable in the absence of adequate supporting adjustment measures and inflation returned to very high levels. 2/ The recent record of money-based stabilizations in Central Europe is also relatively favorable, in the sense that stabilization was effective within a year and there were no major relapses, in four out of six cases--Albania, Slovenia, Croatia, and the FYR of Macedonia (three out of five if the Croatian approach is not interpreted as a money-based stabilization). 3/ Since this type of comparison does not control for other differences among the countries and circumstances of stabilization, it does not constitute very hard evidence; moreover, the sample sizes involved are small. Nevertheless, it illustrates (i) that exchange rate based stabilization can be very effective in reducing inflation quickly from high levels and (ii) that money-based stabilizations can also be both effective and ultimately successful when monetary and credit policies are consistently tight.

With regard to evidence from a broader set of countries, two major studies are noteworthy. Vegh (1992) reviews ten major exchange rate based plans to stop high chronic inflation in market economies (all in Latin American countries except for the 1985 Israeli stabilization). Seven of these are classified as failures, in the sense that the peg could not be

1/ Note that Hungary has not been included in Table I.1 as either a case of money-based or exchange rate based stabilization for two reasons. First, inflation in Hungary was never very high in the first place, hovering between 5-15 per quarter percent in 1990-91, and stabilization attempts in 1991 did not make much of a difference. Second, Hungary's approach to stabilization is difficult to classify, since its policy of "adjustable pegging" can be viewed either as a managed float or as an extremely loose exchange rate "anchor". See IMF (1992), p. 16.

2/ See IMF (1991), p. 5.

3/ Croatia pursued a money-based stabilization strategy in the sense that during the stabilization phase, in which inflation was spectacularly brought down to practically zero in only four weeks (October 3, 1993 to early November 1993), the National Bank of Croatia (NBC) relied on tight and publicly announced base money targets and there was no exchange rate peg. Because of the fast ensuing remonetization of the economy, the original base money targets were allowed to be exceeded, and from mid-November onward the NBC began to focus much more on the exchange rate as the nominal anchor, see EBS/94/190, pp. 2-3. However, price stability had already been achieved at that point.

sustained and initial reductions in inflation were subsequently reversed. 1/ In two of these cases the failure is attributed to a real appreciation of the currency following slow convergence of inflation, in spite of achieving fiscal balance (Chile and Uruguay, 1978). In the remaining five cases, however, failure to adjust fiscally is the main culprit. This experience shows that the discipline induced by the exchange rate anchor may not in itself be sufficient to ensure the fiscal adjustment necessary to sustain the peg.

An even broader set of stabilization experiences is analyzed in the recent IMF conditionality review (EBS/94/84, Section I). The study concludes that--measured by the mean reduction in inflation in the first year after stabilization, as compared to target inflation--exchange rate based stabilizations have been generally more successful than stabilization attempts that did not use the exchange rate as a nominal anchor. At the same time, the study finds that in the group of five countries that used exchange rate anchors to stabilize from high levels of inflation (in excess of 50 percent per annum), two failed after the first year (Argentina 1989 and Yugoslavia 1989). The study concludes that exchange rate anchors should be considered superior in a first best world, but that when programs were not as strong as the ideal and indexing was not addressed, exchange rate anchors were more likely to end in crises than to work. It thus argues that decisions to use an exchange rate anchor in Fund-supported programs should place greatest priority on the prospects for resolute fiscal adjustment. 2/ In the context of transition economies, indexing is as yet not a major problem; however, the prospects for fiscal adjustment are indeed of critical importance in deciding whether or not an exchange rate anchor is appropriate.

* * * *

To sum up, both the arguments and the experiences reviewed suggest that exchange rate anchors are an effective and possibly superior approach to stabilization if supporting adjustment measures are adequate. On the other hand, stabilization attempts in Central Europe which were money-based (or at least did not involve pegging) have in most cases been effective as well. Whether or not a peg can be sustained will largely depend on whether it is accompanied by resolute fiscal adjustment. The latter needs to be assessed explicitly, since the evidence shows that adequate fiscal adjustment is not automatically induced by the commitment to peg. Given the great disparities in the ability and willingness to adjust fiscally across countries in the region which is the subject of this paper, one cannot say in general which approach is likely to be best overall. Careful consideration of the individual circumstances of each country is required.

1/ See Vegh (1992), p. 644-648. The successful exceptions are Brazil (1964), Israel (1985) and Mexico (1987).

2/ EBS/94/84, pp. 41-42.

2. Exchange rate policies in stabilization programs in the Baltics, Russia, and other FSU States

To date, most financial programs supported by Fund resources in the region have entailed a degree of exchange rate flexibility. Of the eleven countries in the region for which programs were approved between August 1992 and December 1994, ten pursued flexible exchange rate strategies during the main stabilization attempt (Armenia, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, 1/ Moldova, Russia, and Ukraine). In contrast, Estonia stabilized under a currency board arrangement.

In the cases of Armenia, Georgia, and Ukraine, the stabilization effort has only just begun, and it is too early for an assessment. For all other countries, inflation data is reproduced in Table IV.1. According to the criteria used above, stabilization has been effective in four out of the seven countries which pursued a money-based approach (Latvia, Lithuania, Kyrgyz Republic, and Moldova). Stabilization has also been effective in Estonia, the only country that stabilized under a fixed exchange rate strategy.

This section first describes the considerations that led to the choice of a given anchor, and then reviews the performance of both types of anchors in program countries, beginning with a comparison between Estonia and Latvia and then turning to the experience with monetary anchors in the remaining program countries. Finally, some conclusions regarding future stabilization policies in the region are presented.

a. The choice of exchange rate regime in Fund-supported programs

The choice of nominal anchor in these program countries has reflected the general arguments and trade-offs described above. While the staff has encouraged the authorities to adopt ambitious disinflation programs, the key requirements to underpin the success of a fixed exchange rate strategy were not present in most cases. First, the political commitment and implementation capacity required to achieve the fiscal adjustment needed to support an exchange rate peg was generally not apparent. With the exception of the Baltics, prevailing fiscal deficits were extremely large when the first stabilization programs were introduced in these countries (Table IV.2). These underlying imbalances cast serious doubt on the feasibility of achieving the required fiscal adjustment. Moreover, in most of these countries, there was no clear consensus on the desirability of radical stabilization and reform, implying that any program predicated on a sharp fiscal contraction that left little room for maneuver carried great risks.

1/ Subsequent to the main price stabilization phase, Lithuania introduced a currency board in March 1994, while Latvia has maintained a de facto peg vis-à-vis the SDR (without formally committing to a fixed exchange rate) since February 1994, also after the main stabilization phase.

Table IV.2. Baltics, Russia, and Other FSU Program Countries:
General Government Fiscal Balance
Actual and Program, 1991-1994 1/

(In percent of GDP)

	1991	1992	1993	1994 <u>2/</u>
Estonia <u>3/</u>				
Actual	5.2	0.9	2.3	0.9
SBA, 8/92		0.6		
Latvia <u>3/</u>				
Actual	6.3	0.0	1.0	-1.7
SBA, 8/92		-1.8		
Lithuania <u>3/</u>				
Actual	7.2	1.0	0.9	-1.3
SBA, 9/92			-0.7	
SBA, 10/93				-1.0
Kyrgyz Republic				
Actual	4.8	-14.8	-8.2	-3.8
SBA, 4/93			-6.9	
ESAF, 6/94				-4.1
Moldova				
Actual		-23.4	-8.9	-7.7
SBA, 11/93				-3.5
Russia <u>4/</u>				
Actual	-16.0	-18.8	-8.0	-10.3
STF, 6/93			-10.0	
STF, 4/94				-6.5
Belarus				
Actual	1.2	-4.5	-8.3	-1.5
STF, 7/93			-9.7	
Kazakhstan				
Actual	-7.9	-7.4	-1.2	-6.0
STF, 7/93			...	...
SBA, 1/94				-4.0
Ukraine				
Actual	-15.8	-29.3	-13.2	-8.0

Source: Staff estimates.

1/ All program projections refer to original program targets.

2/ Actual 1994 data reflect current estimates.

3/ For the Baltic Republics, both actuals and program numbers refer to the financial balance (i.e. they exclude net lending).

4/ Russian numbers refer to enlarged government deficit (i.e. they include unbudgeted import subsidies).

Second, most of these countries lacked access to foreign exchange reserves that would be large enough both to withstand normal temporary swings in the net supply of foreign exchange and to inspire market confidence in the sustainability of the peg (Table IV.3). Indeed, in the seven program countries that have operated with flexible exchange rate regimes, foreign official reserves averaged less than one month of imports at the time of the first Fund-supported program, and it was not clear that most of these countries would have access to borrowed reserves, even in the face of an ex ante strong program.

In contrast, a number of conditions prevailed in Estonia that supported the pegging of the exchange rate. Estonia registered budget surpluses in 1991 and the first half of 1992. A deterioration in the fiscal position at the beginning of 1992 was quickly corrected through a strong fiscal package that included a set of revenue-enhancing measures in June. Thus, there was little doubt in Estonia's ability to undertake the fiscal restraint necessary to sustain the exchange rate peg. Moreover, the return of pre-war Estonian gold from Sweden, the Bank of England, and the BIS provided sufficient reserves for the full backing of domestic base money under a currency board arrangement.

As for Lithuania, the currency board was introduced in April 1994 only after the Lithuanian government had demonstrated its capacity to adjust fiscally, reduce inflation and stabilize the exchange rate. With monetary policy tightened significantly from early 1993, the monthly rate of inflation had been stabilized at low single digit levels for some time, and the budgetary position was strong. The litas had been stable for some time, and by the time the currency board was established, the level of reserves was sufficient to provide more than 100 percent backing of base money at the then market exchange rate. Thus, while the new currency board arrangement was deemed important to buttress the credibility of stabilization through an institutional anchoring of fiscal and monetary restraint, the authorities' basic commitment to stabilization policies was clear.

In the case of Latvia, the necessary conditions for pegging were also broadly satisfied, with widespread political support for strong stabilization policies. However, the Latvian authorities opted for a strong independent central bank in conjunction with a flexible exchange rate arrangement. In terms of credibility and the likelihood of fiscal restraint, the Latvian arrangement thus promised to be as effective as a credible exchange rate peg. In view of this, and the advantages of the Latvian arrangement in coping with external and real shocks, the Fund staff supported the authorities' desire to employ a money-based approach in stabilizing.

Table IV.3. Baltics, Russia, and other FSU Countries:
Gross Reserve Holdings, 1992-1994

(In months of imports)

	1992		1993		1994	
	June	Dec.	June	Dec.	June	Sept.
Estonia	1.4	4.5	3.4	4.8	2.8	3.0
Latvia	1.6	1.4	3.0	5.5	4.2	4.6
Lithuania	0.4	1.2	0.9	2.3	2.6	2.8
Kyrgyz Republic	...	0.9	1.4	1.5	1.5	2.3
Moldova	...	--	0.2	0.9	2.5	2.1
Russia	0.5	0.9	1.4	1.8	1.9	1.2
Belarus	...	...	--	0.2	0.6	0.6
Kazakhstan	...	0.3	...	1.3	...	2.6
Ukraine	...	0.4	...	0.7	...	0.2 <u>1/</u>
Armenia	...	...	...	0.1	0.1	0.2
Azerbaijan	...	0.6	...	0.3	0.1	-- <u>2/</u>
Georgia	...	--	--	--	0.1	--
Turkmenistan	...	...	...	5.9	6.6	6.6
Uzbekistan	...	0.5	0.3	2.2	2.6	4.9

Sources: Data provided by authorities; and staff estimates.

1/ October 1994.

2/ August 1994.

b. Stabilization performance under alternative anchors: Estonia versus Latvia

Estonia and Latvia have been broadly similar in many of the circumstances that have influenced economic performance: location, size, factor endowments, external relations with Russia, and other FSU countries, and the timing of the stabilization effort. Moreover, as Saavalainen (1994) points out, the overall monetary and fiscal stances of the two countries since mid-1992 have been comparable. Thus, Estonia and Latvia present a useful pair of countries for a more detailed comparison of the effects of alternative stabilization approaches. 1/

In comparing the behavior of macroeconomic variables during the disinflation process in these two countries, the main official indicators would suggest the following:

- The initial disinflation paths were very similar for both countries. Over the last year, however, inflation has been lower in Latvia than in Estonia (Table IV.4);
- The estimated output decline during disinflation was larger for Latvia than for Estonia;
- A comparison of domestic deposit rates between Latvia and Estonia for 1993 and 1994 (Table IV.5) reveals large nominal interest rate differentials in favor of Latvia. Most importantly, a substantial differential remains for 1993 and the first half of 1994 even after controlling for differences in domestic credit risk by taking into account differentials between the Latvian and Estonian Forex deposit rates. 2/ 3/ This suggests that a large part of

1/ This was forcefully argued by Hansson and Sachs (1994) in a first systematic comparison of the Baltic stabilization experiences.

2/ The Latvian deposit rate refers to government securities, whereas the Estonian rate refers to central bank securities. Thus, "some residual risk" may apply to the former relative to the latter, "since only the latter are guaranteed to be honored in cash (which is also a central bank liability)", (Saavalainen 1994, p. 30).

3/ For the first half of 1994, there is a substantial differential between the Latvian and Estonian deposit rates, even after subtracting the corresponding Forex deposit rates (which capture differences in credit risk but not in the exchange arrangements--see Table IV.5, last row). For 1993, there is no data on Estonian Forex deposits, since such deposits only became legal in 1994. However, even if we assume that Estonian Forex deposit interest rates would have been zero at that time, thus maximizing the implicit differences in credit risk between Latvia and Estonia, a substantial differential would have remained between the credit-risk adjusted Latvian and Estonian rates.

Table IV.4. Estonia and Latvia: Disinflation and Output Loss, 1992-1994

	1992			1993				1994		Percentage point change	
	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	1st qtr.	2nd qtr.	1992 1994	2nd qtr.- 2nd qtr.
Estonia											
Real GDP Index (1991=100)	85	80	76	77	82	85	82	77	85		-0.5
Annualized inflation (in percent)	1,028	1,167	1,122	293	135	61	38	44	50		
Latvia											
Real GDP Index (1991=100)	64	62	60	51	55	56	59	52	56		-8.6
Annualized inflation (in percent)	722	1,097	1,272	398	186	85	34	34	37		

Sources: Saavalainen (1994); and staff estimates.

Table IV.5. Latvia and Estonia: Interest Rate Differentials, 1994 1/

(In percentage points)

	1993				1994			
	January	April	July	October	January	April	July	October 2/
1. Latvia								
Deposit Rate (A)	86.4	65.8	61.0	50.1	42.5	32.3	34.0	23.7
Forex Deposit Rate (B)	26.3	18.4	17.4	25.4	26.3	21.2	22.0	19.4
Difference A-B (C)	60.1	47.4	43.6	24.7	16.2	11.1	12.0	4.3
2. Estonia								
Deposit Rate (A)	15.5	18.6	17.7	14.2	11.5	11.5	12.1	11.2
Forex Deposit Rate (B)					7.5	11.4	5.2	5.5
Difference A-B (C)					4.0	0.1	6.9	5.7
Differential (1.A-2.A)	70.9	47.2	43.3	35.9	31.0	20.8	21.9	12.5
Differential (1.B-2.B)					18.8	9.8	16.8	13.9
Differential (1.C-2.C)					12.2	11.0	5.1	-1.4

Sources: Data provided by authorities; and staff estimates.

1/ End-of-month data. All rates refer to 3-6 months time deposits.

2/ End-September data for Estonia.

the differential between Estonian and Latvian deposit rates in 1993 and early 1994 can indeed be attributed to the different exchange rate arrangements.

The Latvian experience confirms that inflation can be effectively and rapidly reduced under a money-based stabilization, and that the exchange rate peg is not a precondition for fiscal discipline and quick stabilization. At the same time, interest rate differentials suggest that Estonia's exchange rate strategy may have commanded greater credibility than Latvia's, which may have reduced the real cost of stabilization. And indeed, the path of recorded output appears to favor Estonia.

However, substantial care should be exercised in concluding that Estonia had a more favorable output performance that owed to its fixed exchange rate strategy. Indeed, in spite of their many similarities, there are important differences in the conditions under which Latvia and Estonia stabilized which worked to Estonia's advantage. In particular, Estonia's closer ties to Finland and Sweden may have contributed to relatively high levels of foreign investment. In addition, Latvia was slow to privatize relative to the other Baltic countries. ^{1/} Finally, and perhaps most importantly, the data on output for the two countries are not comparable. The official national accounts data for Estonia incorporate an estimate of private sector activity--which is said to have grown rapidly to account for a large share of total value-added--whereas the Latvian figures do not include any such estimate. Thus, the recorded difference in output performance almost certainly overstates the actual difference; indeed, the actual situation may not have been significantly different.

c. The experience with money-based programs outside the Baltics

We now turn to the stabilization experience in Belarus, Russia, Kazakhstan, the Kyrgyz Republic, and Moldova, the five countries which, in addition to Latvia and Lithuania, used money-based strategies to combat high inflation. Belarus and Russia have had programs supported under the STF, while the remaining three countries presently have programs supported by stand-by arrangements (followed by an ESAF in the case of the Kyrgyz Republic).

In the absence of a benchmark country(ies) operating with a fixed exchange rate but otherwise similar economic conditions, it is impossible to disentangle the effect of the exchange rate arrangement from other factors affecting inflation and output performance. Our approach is thus to ask whether the conditions under which a monetary anchor ought to be the better choice--based on the general arguments--in fact turned out to be present in the five countries. The difficulty with this approach is that it is not straightforward to infer these conditions from the realized paths of

^{1/} See Saavalainen (1994).

economic variables. Our conclusions will thus necessarily remain tentative and will need to consider information about the political environment and the motivation of certain government actions as well as economic conditions.

The experience indicates that, with the exception of Russia, all of these countries experienced large swings in velocity following the adoption of their first stabilization programs (see Chapter II, Table II.2). The instability in velocity has been particularly pronounced since mid-1993, with a large rise at the end of 1993 and the first quarter of 1994. This implies that, at least until the spring of 1994, money was a rather ineffective nominal anchor. Abstracting from all other considerations for the time being, an exchange rate peg might have been warranted for two distinct reasons. First, in the cases of the Kyrgyz Republic, Kazakhstan, and Moldova, the initial rise in velocity in part may have reflected low confidence in the new national currencies; a credible exchange rate peg may have served to enhance confidence. Second, apart from any confidence effects, an exchange rate anchor may have had a direct moderating impact on inflation through its effect on prices of tradables.

On the other hand, it is also true that over the course of the same period, the five economies (particularly the energy importers) were hit by large real shocks, both internally--because of structural reforms and changes in profitability in the traded and non-traded sectors--and externally--owing to sharp rises in energy import prices (see Chapter II, Table II.4). As a result, the equilibrium real exchange rate must have been subject to large swings during the period which might have undermined any given exchange rate peg, even though a significantly undervalued rate at the outset would of course have guarded against this risk to some extent.

In addition, all countries in this group failed--by a wide margin in certain cases--to meet fiscal and credit targets. Surges in credit to the agricultural sector occurred in the Kyrgyz Republic (September-October 1993) and Kazakhstan (March-May 1994); similar credits contributed to excessive monetary expansion in Russia in the fall and winter of 1993, and again from the summer of 1994 onwards. In Belarus, fiscal targets were nominally met, but monetary targets were missed by wide margins from late 1993 onwards as the government effectively transferred budgetary operations--including credits to agriculture--to the banking system. Slippages in Moldova primarily reflected delays in foreign financing and the effects of natural catastrophes.

Under an exchange rate based program, these slippages would have forced an abandonment of the peg or at least a devaluation. The crucial issue thus becomes whether the commitment induced by a peg would have had a substantial effect in preventing or reducing the slippages. In the absence of a counterfactual, it is impossible to know this with certainty, however, we would argue that the answer is likely to be "no" in all cases. Indeed, some of these targets themselves did not reflect a sufficiently ambitious disinflation that would have been consistent with a fixed exchange rate; and the size and nature of the financial slippages indicate that the even

greater fiscal adjustment needed to sustain an exchange rate peg could not have been achieved. In Russia and Belarus, the underlying political willingness and consensus to undertake the required adjustment policies was lacking, in spite of the efforts of some reform-minded government officials. ^{1/} This absence of sufficient commitment to disinflation was reflected in the considerable policy failures under various Fund-supported programs in 1992-94 some of which have been highlighted above. In the case of Kazakhstan, the main source of fiscal slippage under the 1994 stand-by arrangement was a large, ill-designed bail-out of interenterprise arrears, which reflected the magnitude of underlying imbalances in the enterprise sector and lack of commitment to financial discipline at that time (see Chapter III). For the case of the Kyrgyz Republic, the expansion in credit in late 1993 primarily resulted from the perceived need to sustain agricultural production for the purposes of ensuring oil and gas deliveries under barter agreements with Russia and Uzbekistan. The size of the problem and the authorities' policy response strongly suggests that a peg would not have been sustained. In the case of Moldova, finally, the domestic slippages were responses to exogenous shocks that were outside the control of the authorities.

The Moldovan case is an example of a situation where a monetary anchor could be the preferable stabilization regime in a transition economy even if there exists a strong underlying commitment to adjust. If a transition economy is affected by exogenous shocks of the type experienced in Moldova, a temporary departure from fiscal consolidation may well be warranted. In the absence of large reserves, this would generally require a devaluation under an exchange rate based program which, even though justified by the change in underlying fundamentals, could be seen as a policy failure by the public. A money-based program, however, provides the opportunity of making such adjustments while keeping the reputational losses involved small and ensuring that the deviation is indeed temporary. Moreover, in the case of Moldova, the perception appears to have been that the Fund had modified the program, not that the authorities had failed. Thus, the commitment of the authorities to the stabilization goal and its credibility in the eyes of the public was preserved in a way that may not have been possible under a devaluation.

In short, a review of the shocks that affected the five transition economies during 1993-94 does not point to one or the other exchange rate approach as the preferred choice. It is possible that exchange rate based stabilizations--if they had been successful--would have provided a tighter control of the price level in these countries than was possible under the money-based programs. However, the political economy in these countries during the period of review suggests that exchange rate based programs would have carried unduly high risks and, given changing circumstances, may not

^{1/} See Hernández-Catá (1994) for the case of Russia.

have allowed a sufficiently flexible response. In the cases of Russia and Belarus, money-based programs appear to have been the only *feasible* alternative.

d. Conclusions for future stabilization policies

The experience so far indicates that money-based programs have succeeded in bringing inflation down in a number of countries in the region. Nevertheless, recent developments in a number of states appear to have strengthened the case for adopting a fixed exchange rate strategy. Specifically, with progress in price and trade liberalization, many of the required real shocks have already been registered in a number of countries. Moreover, political support for reform and stabilization has recently grown in some countries, perhaps reflecting the increasing realization that the gradualist approach has not yielded favorable results. Thus, the most important precondition for pegging--a strong underlying commitment to fiscal adjustment--may increasingly be present.

In assessing the appropriateness of alternative exchange rate arrangements in the region during the period ahead, the different situations of individual countries need to be borne in mind:

(1) Certain countries (including Armenia, Georgia, Kazakhstan, Russia, and Ukraine) are at a stage when fixing the exchange rate could make a valuable contribution to macroeconomic stabilization. Whether or not a peg would ultimately be warranted would depend crucially on whether the fiscal adjustment set out in these programs was sufficiently deep--and the likelihood that it will be followed sufficiently high--to give to the exchange rate peg a reasonable chance of success. In addition, the feasibility of pegging would of course depend on sufficient access to reserves from external sources, including possibly a currency stabilization fund (CSF).

(2) In other cases (e.g., Latvia, Moldova, and the Kyrgyz Republic), consideration of an exchange rate peg might not be actively pursued, even though the fiscal preconditions for such an approach might be satisfied. In Moldova and the Kyrgyz Republic, money-based programs have been successful in substantially bringing down inflation, and re-monetization of the economy is well under way. Thus, there seems little reason to change these arrangements now. Indeed, the authorities in both countries strongly advocate retaining the current money-based approach. As for Latvia, it has maintained an unannounced peg since February 1994, and there is an issue as to whether this state should be formalized through the introduction of a formally fixed exchange rate or through a currency board arrangement. Given that the monetary authorities in Latvia enjoy high credibility, that inflation is the lowest of any FSU country, and that output recovery is under way, there are good reasons for retaining the current arrangement. The credibility gain from switching to a formal peg would seem minor in this case, and may be offset by the loss in flexibility.

(3) In the remaining countries, it would appear at the moment that the preconditions for adopting an exchange rate peg are unlikely to prevail in the near future: either the fiscal adjustment required under a peg will not yet be feasible, or the countries will be undergoing severe structural changes which imply large changes in the equilibrium exchange rate, or both.

The appropriate exchange rate regime is likely to remain an important issue as reform in the region progresses. It is likely that political and economic uncertainties will remain unusually large, and underlying circumstances highly fluid. A continual reassessment of what may be the appropriate policy approach will therefore be required.

Data Issues on Interenterprise Arrears

The data on interenterprise credit in the Baltics, Russia, and other FSU countries, where available, are collected on the basis of enterprise surveys in most of the countries. Only in Azerbaijan are banks the source of the data on interenterprise arrears. Interenterprise arrears for Azerbaijan are the sum of enterprises' payment orders which could not be executed because of insufficient funds as of that date. 1/ The frequency of the data is monthly in most countries, except in Latvia, where it is annual.

The data typically consist of enterprises' payables to and receivables from other enterprises, including a decomposition into domestic and foreign components, as well as by sectors. Total receivables and payables do not necessarily match because of the incompleteness of the surveys. The figures on interenterprise credit and arrears reported in Tables III.1-III.4 do not include the interstate components except for Belarus and the Kyrgyz Republic. Furthermore, the figures on credit and arrears include components relating to governments in Kazakhstan and the Kyrgyz Republic. For these reasons, the data on interenterprise credit and arrears are not strictly comparable across countries.

Some countries distinguish between overdue and other categories of receivables and payables, but no information exists on the length of maturity overruns for overdues. Furthermore, the definition of when a payment becomes overdue appears to vary from country to country. For example, in Russia the classification of a payment as overdue is left to the discretion of the reporting enterprise, but in Ukraine debts not paid within sixty days of falling due are defined to be in arrears, while in Lithuania any payment overdue by more than five days is defined to be in arrears. 2/ Also, arrears may be somewhat understated in the data for several reasons, particularly because accumulated interest and penalties are not included in trade credit arrears.

1/ Thus, receivables and payables are the same in the Azeri data. Furthermore, the figures on arrears for Azerbaijan, reported by banks only, have a downward bias compared to similar figures compiled for the other countries through enterprise surveys.

2/ In Lithuania, for transactions without any specified payment date, the payment is considered to be in arrears if it is not settled within five days of the transaction.

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Chapter I

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