

Departures from the Ruble Zone: The Implications of Adopting Independent Currencies

Linda S. Goldberg, Barry W. Ickes and Randi Ryterman

1. INTRODUCTION

Following the breakup of the former Soviet Union (FSU), Russia and the other FSU sovereign countries were faced with the choice between remaining in a common ruble zone and introducing distinct national currencies. Possessing an independent currency is usually perceived as an important element of national sovereignty. An independent currency is not only seen as a source of national pride; it may also enable a country to pursue an independent monetary policy.

The strength of the economic and political temptations for issuing new currencies was clearly evident by the end of 1993, when almost all countries of the FSU had either threatened or embarked upon independent currency initiatives. The status of these currency initiatives is summarised in Table 1. At the end of 1993 the first five countries shown in the table had introduced nearly complete monetary reform, with Kyrgystan, Latvia, Estonia, and Lithuania adopting independent currencies. By the last quarter of 1993, Georgia, Moldova, and Azerbaijan all took important steps towards instituting independent currencies. Ukraine and Belarus also had moved toward currency independence, but more so than the previously noted countries, continued to pursue extensive negotiations with Russia on managing their orderly withdrawal from the zone. Towards the end of 1993 Turkmenistan announced its intention to withdraw from

LINDA S. GOLDBERG is from the Department of Economics, New York University and NBER. BARRY W. ICKES is from the Department of Economics, the Pennsylvania State University. RANDI RYTERMAN is from the World Bank, Washington DC. They are grateful to Barry Eichengreen, Andre Sapir, Wolfram Schrettl, and Kaz Stanczak and anonymous reviewers for comments on an earlier draft of this paper. Linda Goldberg is grateful for the research support provided by the CV Starr Center for Applied Economics, the National Science Foundation, and the Social Science Research Council. Barry Ickes and Randi Ryterman appreciate the financial support from the National Council for Soviet and East European Research, IRIS, and the World Bank.

TABLE 1
The State of the Ruble Zone

<i>Republic</i>	<i>National Currency</i>	<i>Date of Monetary Reform/ Relationship with Russian Ruble</i>
Russia	Ruble	July–August 1993
Kyrgystan	Som	May–June 1993
Latvia	Lat	May 1992–June 1993
Estonia	Kroon	June 1992
Lithuania	Lit	October 1992–July 1993
Georgia	Lari	Georgian Coupon used as a transitional currency, some currency reforms introduced, but incomplete. Target complete introduction by end of 1993.
Moldova	Lei	Moldovan Coupon and old Soviet rubles in use. Intention to have Lei as legal tender by end of October 1993.
Azerbaijan	Manat	Uses Manat as transitional currency but also uses Russian and old Soviet rubles. Own currency was introduced in September 1993.
Ukraine	Grivina	Karbovanets used as transitional currency but monetary reforms and phasing out of ruble incomplete. Elimination of any external convertibility of karbovanets, 3 November 1993.
Belarus	Taler	Transitional settlement coupon in use and in parallel with rubles. Has announced it will not join the ruble zone, but continues negotiations.
Turkmenistan	Manta	Introduced currency 1 November 1993. Phasing out rubles.
Armenia	Dram	Planned to introduce own currency by end of 1993, but wants in on zone.
Uzbekistan	Sum	Planned to introduce own currency by end of 1993, but wants in on zone.
Kazakhstan	Tenge	Ruble remains in use. Wants in on zone, but claims Russia is trying to force it out.
Tajikistan	Sum	Uses rubles, and has announced its intention to remain in the zone.

the zone as soon as possible. By contrast Armenia, Kazakhstan, and Uzbekistan wavered on remaining in versus departing from the zone. Tajikistan maintained that it would remain in the ruble zone.

In this paper we assess the potential implication of issuing independent currencies in these countries. Specifically, an important rationale for departure from the ruble zone is that a country seeks to follow a different schedule of introducing reform initiatives than that adopted by Russia. The net economic benefits to a country will depend on a country's characteristics, including the extent to which economic reforms had already been introduced within the country and by a country's trading partners. While a sovereign currency does provide a potent symbol of independence, for some countries in the short run, the economic and distributional costs associated with introducing a national currency

may outweigh the pure currency sovereignty benefits. The extent of these costs depends on the timing of the currency introduction and the extent of reforms undertaken. Moreover, introduction of an independent currency, if properly timed, can reinforce the reform trajectory on which a country has embarked.

We question the relevance of using optimal currency area arguments for considering the adoption of independent currencies in the FSU. Typically these arguments are posed in terms of commonality of shocks, inter-regional labour mobility, and automatic stabilisers through fiscal federalist agencies. We argue that the main premise of this approach, that the role of the exchange rate may play an important role as an output stabilising mechanism, does not currently apply to the countries of the FSU. Thus, despite the fact that the typical reference criterion for introducing independent currencies may be satisfied, we argue that these criteria are irrelevant since *the exchange rate will not be able to effectively perform the task of short-term stabilisation to which it is assigned*. Although the short-term effectiveness of the exchange-rate instrument may increase when broader reform initiatives take hold, at the current stage of economic transformation, exchange rates will not effectively stabilise output across countries of the FSU.

We also consider an alternative set of implications of introducing independent currencies that are based on a 'public finance' approach. These criteria previously have been applied to the issue of country participation in the European Exchange Rate Mechanism (ERM), but also will have a counterpart in application to the FSU. This public-finance approach emphasises the cross-country competition for the gains from monetary coordination, most notably for seignorage (inflation tax) revenues. In the present context, we interpret the public-finance approach in broader terms, whereby participation in a currency union may facilitate the continuance of a pattern of fiscal transfers and political influence within a region that otherwise would be sharply altered. The decision of whether to introduce an independent currency is based on whether departure from the union would cause, on balance, a gain or a loss. We argue that many of the losses from departing from the zone are very short term. Consequently, they may be dominated by the long-term gains from stabilization that departure from the zone may afford.

2. TRADITIONAL ARGUMENTS FOR INDEPENDENT CURRENCY CONTROL AND THE FSU

a. The Optimal Currency Area Approach

The merits of departing from a common currency area are often argued in terms of the role of exchange-rate flexibility as an instrument of economic stabilisation.

According to the early 'optimal currency area' literature associated with Mundell (1961), the importance of establishing an independent currency (with a flexible exchange rate) is closely associated with the significance of the exchange rate (or independent money supplies) as a tool of output stabilisation.

To illustrate this, consider the case of two countries contemplating introducing monetary autonomy and flexible exchange rates in lieu of their pre-existing unified currency.¹ Both countries are subject to output disturbances which may be expansionary or contractionary. If these output disturbances across countries are perfectly positively correlated, a flexible exchange rate would not be an effective tool for output stabilisation. In periods of unemployment, neither country could take advantage of the automatic stabiliser function of the exchange rate, since the exchange rate could not successfully shift the relative prices of the products in each country to reallocate demand across countries and smooth output. By contrast, suppose the output disturbances were less than perfectly correlated. The flexible exchange rate could shift relative prices, reorient the demand for traded goods toward the more depressed economy, and thereby operate as an effective stabilisation tool. Thus, one advantage of an independent currency is that it affords a country greater capacity to respond to shocks, especially when shocks have varied impacts across countries.

The standard argument in the Mundell paradigm is that if nominal wages are rigid downward, then nominal exchange-rate flexibility may be desirable. For example, if an economy experiences a negative demand shock and nominal wage rigidity is absent, the real wage would fall and employment would remain the same. With nominal-wage rigidity, output and employment will fall. However, if the country had a flexible exchange rate, a depreciation of the domestic currency would, by its effect on the domestic price level and on real wages, alleviate the distortions that result from nominal wage rigidity.

We argue that even if the exchange rate is a potentially effective stabilisation tool, if it is a redundant tool then the case for independent currencies is weakened. Redundancy can arise if alternative mechanisms lead to rapid adjustment following disturbances. Such alternative mechanisms include: mobility of labour and other productive inputs; or, agreed upon mechanisms for cross-country transfers (such as a type of fiscal federalist system).

Finally, another early and maintained argument in favour of large common currency areas emphasises that fewer currencies are preferable on pure efficiency grounds, since transaction costs increase in relation to the number of currencies in circulation. The extent and scope of these transaction costs further increase

¹ Alternatively, the initial situation may be one of distinct currencies with non-discretionary monetary policy and fixed exchange rates.

with the uncertainty surrounding the values of the respective currencies and the institutional restrictions on currency conversions.²

b. Rejecting the Traditional Arguments in the Current Context of the FSU

In this section, we consider whether the traditional optimal currency area arguments apply in the context of the FSU. In other words, how important, as instruments of adjustment, are independent exchange rates to the successor states of the FSU?³ Based on these now standard paradigms,⁴ one may conclude that the countries of the FSU are natural candidates for independent currencies along Mundellian lines: the various regions are quite diverse, and, hence, would optimally respond to shocks in different ways. The more industrialised parts of the FSU — generally the western countries, Ukraine, Belarus, Russia — would be affected differently by a demand shock than the more agricultural Central Asian countries.⁵ Moreover, the seeming merits of independent currencies and flexible exchange rates are reinforced by the observation that inter-regional labour flows are unlikely to automatically stabilise output shocks both within large countries like Russia, and across the FSU. With limited inter-regional labour mobility, this mechanism for equalising real wages is not effective.

On the other hand, the degree of labour mobility may not even be an issue in our context since the problem of real wage rigidity across countries is just not present in the FSU. Since Russia liberalised prices on 2 January 1992, inflation has been quite variable throughout the FSU.⁶ As a consequence, real wages can adjust on a regional basis quite rapidly. This means that real wage adjustment

² In the FSU, the costs of transacting across borders in a single currency or in distinct national currencies depend on the type of inter-republican settlements and payments mechanisms. We return to this issue in Section 3, when inter-republican payments regimes in the FSU are discussed.

³ Goldberg (1993) analyses the foreign exchange regime in Russia through the end of 1992.

⁴ For the case of the FSU, Gros (1991) presents the standard arguments about commonality of shocks and labour mobility, without considering whether the exchange rate can effectively stabilise output.

⁵ The presence of petroleum exports further complicates the matter. The proper external value of the common ruble for a large raw material exporter may be far different than for a producer of low quality machine tools. The latter country needs a depreciated currency to make its products competitive. The former would find its currency appreciating in real terms due to the demand for its exports. A natural conflict of interest appears. This is, of course, an important problem within Russia, as well as across the ruble zone.

⁶ *Izvestiya*, 13 February, 1993, reported on wage variation in Russia. According to the article, average per-capita income in the Far East region is almost double that in the North Caucasus. The lowest incomes were found in the North Caucasus, Kabardino-Balkariya, Mordoviya, the Moscow and Penza oblasts; and the highest levels in the Sakha and Komi republics, the Kamchatka, Magadan, Murmansk, Sakhalin, and Tyumen oblasts, and the city of Moscow. Moreover, it is important to note that wages are only one part of the total compensation package of workers. The other benefits to workers can vary considerably over time.

across republics can occur even without movements of labour. The lubricating effect of an independent currency on wages is just not needed in this case.⁷

While the aforementioned type of optimal currency area discussion generally presents the starting point for analyses of whether or not a country should participate in a currency area, there are important reasons for doubting its relevance in our context. The absence of alternative instruments for stabilisation is not a sufficient condition for establishing that the exchange rate is itself an important and effective instrument of stabilisation. Instead, *it must first be established that the exchange rate is an effective instrument, i.e. that it can and does have a timely effect on a country's output.* But, given the current state of reforms across the FSU, important reasons undermine the immediate importance of independent currencies as effective instruments for short term output stabilisation.

First, to apply the traditional optimal currency area arguments, one must assume that exchange-rate changes will trigger rapid production responses. This assumption is extremely strong when applied to enterprises in the FSU. In the current early period of transition, enterprises have pursued a pattern of behaviour based on 'survival' constraints. For example, when faced with an adverse terms-of-trade shock, enterprises can provide their trading partners with large volumes of inter-enterprise credit, with the hope that the government will bail-out enterprises that are unable to collect debts in arrears.⁸ This behaviour reduces the enterprise focus on the bottom line, and hence, makes it more likely that the enterprise will 'pass through' are expected as a result of the type of industrial structure inherited from the Soviet period. Production in the FSU is characterised by enterprises that have large local market shares.⁹ This market structure increases the likelihood of low output sensitivity and high price sensitivity because the greater the market power of an enterprise, the greater the likelihood it will respond to exchange-rate changes by adjusting its output price to maintain market share.¹⁰

The tendency for enterprises to 'pass through' exchange-rate changes is likely to persist in the near future. The survival orientation of enterprises is a result of fundamental incentive and information problems that seem unlikely to be

⁷ One could argue that the differing rates of inflation are due primarily to the lack of central control of monetary policy in the ruble zone. Hence, the extent of nominal wage variability is due precisely to the lack of a workable FSU monetary policy.

⁸ For a detailed discussion of survival constraints on enterprises and the evolution of inter-enterprise arrears in Russia see Ickes and Ryterman (1992 and 1993).

⁹ Recent work by Brown, Ickes, and Ryterman (1993) suggests that the degree of industrial concentration is much smaller than conventionally believed. Concentration arises, not because of few firms in the national economy, but because of a poor distribution system creates powerful local markets.

¹⁰ See Dornbusch (1987) for a model of exchange-rate pass through. For an analysis of the Soviet case, see Goldberg and Karimov (1994).

eliminated in the short run. Enterprises are also likely to maintain market power in the short term. This structure is expected since the near term will remain characterised by: barriers to the entry of new firms and of existing firms into new markets; economic uncertainty; lack of information about potential suppliers and customers; absence of working real estate and capital markets; inadequate legal guidelines and instruments; and a poor system of communication and payments. These problems may be reinforced by the growth of local governments, which often enact local controls and further impede free domestic trade. Under such circumstances, exchange rates will have limited effectiveness for short-term output stabilisation goals.

A second reason why exchange rates are ineffective tools in the current period is that problems in the payments system continue to hamper inter-republican trade. These difficulties in arranging payments across the FSU lead to long and variable lags in the receipt of payments for goods.¹¹ In periods of high inflation, long and uncertain delays in clearing can introduce larger variability in the real return to exports than changes in the nominal exchange rate. Under such circumstances, enterprises try to insulate themselves as much as possible from entanglement in the payments system and thereby have placed a greater emphasis on barter transactions. This action, in itself, limits the effectiveness of the exchange-rate instrument, since it reduces the sensitivity of the decision to export to fluctuations in the nominal exchange rate.

Finally, it must be noted, of course, that these limitations on the exchange rate as an effective stabilisation instrument may be transitory. For countries that implement successful economic reforms, the importance of our criticisms against applying the traditional arguments will wane. Successful market reforms may erode the monopolistic structure of local markets and informational barriers to trade and production may be reduced over time. The countries that undergo rapid transformation are those most likely to be able to frame their discussions of optimal currency area participation in terms of the traditional Mundellian criterion. However, at the stages of economic reform achieved by the countries of the former Soviet Union by the end of 1993, the traditional arguments for introducing independent currencies are of limited relevance.

3. PUBLIC-FINANCE ARGUMENTS FOR INTRODUCING NATIONAL CURRENCIES

a. Public-Finance based Arguments

In discussions about whether the European Community should integrate as a

¹¹ This is true for domestic transactions as well as inter-republican transactions. The important point, in this context, is that the introduction of new currencies will not reduce the payments lags for transactions that go through the banking system. Hence, payments lags are still likely to dominate nominal exchange-rate fluctuations in the effect on revenues.

common currency area, the emphasis of the debate shifted away from the role of exchange rates as instruments of output stabilisation. Instead, more recent arguments for maintaining independent currencies consider whether a national money can provide a government with an important tool for budgetary finance. One source of finance is seignorage, often called the inflation tax because it taxes existing holders of money balances.¹² As applied to Exchange Rate Mechanism (ERM) participation, an important and quite contentious issue is the division of seignorage rents across participants in the common currency area. The desire of a country to secure a (disproportionately) large share of benefits and political influence in a currency union provides the compelling logic behind a country's decision to forego an independent currency and submit itself to centralised monetary discipline. Without some threshold level of political influence or transfers from the rest of the currency area, a country may choose to stay outside of a common currency area.¹³

The problem of seignorage division stressed in the European context can be more broadly interpreted in the context of the FSU. Given the initial integration of countries under the Soviet umbrella, departure from the ruble zone is likely to have widespread implications for a range of cross-country fiscal transfers and subsidies, of which seignorage is one particular example. These expected losses and gains expected for each country are enumerated in Section 3*b*.

Another important economic argument for participating in a common currency area is that the union may impose a degree of monetary discipline that a government desires but cannot itself commit to. The union is viewed as an enabling mechanism, whereby 'weak' central bankers unable credibly to commit to low inflation are able to borrow credibility from the independent central banking authority. In Section 4 we develop a variant on these themes by stressing that the adoption of independent currencies in countries of the FSU can provide a strong and reinforcing signal of a reform trajectory.

Finally, it should be recognised that if a common currency area is to be maintained, a mechanism is required for coordination and control of monetary emissions by the participating countries. Without such control, participants in the

¹² When a country prints money to pay for its expenditures, it generates inflation, lowering the real value of the payments. Another public-finance motive in favour of maintaining independent currencies is based on the principle that countries have different optimal inflation rates. From a pure public-finance perspective, any common currency constraint that makes the inflation rates of the two countries converge must decrease the income of at least one of the countries.

¹³ Casella (1992) considers the type of transfers required for participation of a large country and small country within a union when there is a negative externality that the currency union is intended to address. The union is viewed as imposing a beneficial discipline on all agents, with deviation costly. The small country participates in the union only if it can receive a relatively favourable share of the seignorage revenues distributed within the currency area. The large country is willing to participate, up to a point, when it can still gain more from the discipline that the common currency imposes on its partner than it loses in control over domestic policies.

common currency area are able to independently print money (or extend credit) and the union will be characterised by excessive money creation. This inflation bias, noted early in this debate by Buiter and Eaton (1983), arises because each country attempts to print money and export part of the inflation tax to its partners in the common currency area.¹⁴

b. Relevance of Public-Finance Arguments for the FSU

The empirical relevance of public-finance arguments for currency zone participation can be established most directly by examining the quantitative importance of just one dimension of these transfers, seignorage. Based on worldwide experiences, we know that between the 1960s and the 1980s the ratio of seignorage to total government revenues was substantial for some countries, sometimes in excess of ten per cent.¹⁵ *Since inflation and seignorage reliance are strongly inversely related to the efficiency of tax collection systems, and positively correlated with political instability, seignorage reliance is expected to be high in the FSU.* This is exacerbated by the fiscal crisis which the transition clearly has imposed throughout the FSU. In Russia, the likelihood of relying on seignorage is increased even further by the inability of the central government to collect revenue from local governments.

While seignorage is likely to be important throughout the FSU, there may still be differences, across countries, in the degree to which it is relied upon. Based on the experiences of developed and developing countries, Cukierman, Edwards and Tabellini (1992) show that country reliance on seignorage significantly increases with the share of agricultural output in an economy, with the degree of urbanisation, and with observed political polarisation and instability.¹⁶ Reliance on seignorage declines with the extent of industrialisation and the dependence of an economy on foreign trade. Reliance on seignorage may be less important for those countries with strong extra-republican trade relations because these countries can rely on external tariffs as a revenue source.

¹⁴ See Canzoneri and Rogers (1990). This result is also noted by Aizenman (1992) and Casella and Feinstein (1989).

¹⁵ Fischer (1982; p. 301) found that during this period there were basically two types of countries that relied heavily on inflationary finance: those with 'active' and 'passive' seignorage collection. 'Seignorage use is active in the high inflation countries, such as Argentina, Uruguay, Chile and Brazil. It is passive in the rapidly growing countries, such as many members of OPEC. In the passive case, seignorage is obtained by providing high-powered money to meet the rapidly growing demand, without necessarily having high inflation.' Cukierman, Edwards and Tabellini (1992) found that between 1971 and 1982 thirty-five per cent of the 79 economies examined relied on seignorage for more than 10 per cent of their total government revenues.

¹⁶ The agricultural sector is viewed as a more difficult target for administering taxes than, for example, mining and manufacturing sectors. The degree of urbanisation is viewed as reflecting the ease with which market activities can move underground and evade taxes.

Those countries most likely to rely heavily on seignorage, and receiving a relatively small seignorage transfer from Russia, would find it most costly to remain in the ruble zone from this specific public-finance perspective. However, the clear exception arises if the potentially seignorage-dependent economy is sufficiently compensated via other fiscal transfers and subsidies by the other countries participating in the ruble zone, in particular by Russia.¹⁷ *The significance of the public-finance or seignorage arguments for independent currencies cannot be discussed in isolation from the other transfers associated with participation in the ruble zone.* In the remainder of this section, we identify two main classes of transfers, direct transfers via the monetary and payments regimes, and indirect transfers via the distorted system of inter-republican trade pricing. Given these forces, the section will then conclude with an assessment of the balance of the net inter-republican fiscal or public-finance effects for each country of departures from the ruble zone.

c. Monetary Control and Emission Across Republics of the FSU

The potential importance of seignorage and the role of independent currencies in the FSU depends on the system of control over monetary (cash and credit) emissions applied to the countries remaining in the ruble area. This system affects the ability of the former republics to capture the benefits and export the costs of inflation prior to introducing own currencies.

Monetary policy in the FSU has been greatly complicated by the co-existence of two types of rubles that circulate in the area, a legacy of the Soviet period. A strict separation between cash (*nalichnyye*) and non-cash rubles (*beznalichnyye*) has been enforced within the ruble zone. Under this regime, enterprises use non-cash rubles to make payments to other enterprises. Cash rubles are used for paying wages and for other incidental expenses.¹⁸ The purpose of this system was to separate payments between enterprises, where credit was lax, from payments to and from households, where hard-budget constraints applied. To some extent, this characterisation still applies today: many central banks have pursued a policy of easy credit to enterprises to maintain production. The countries that remained in the ruble zone after the breakup of the FSU retain this dual monetary structure. This duality complicates monetary control in the ruble

¹⁷ Inflation can also impact government tax and revenue collection by creating incentives for firms to delay or avoid paying taxes. This makes the tax collection system more inefficient and government financing more difficult. Aizenman (1992) provides conditions for a high-inflation equilibrium which arises when countries with heavy dependence on seignorage find themselves on the wrong side of the inflation tax Laffer curve.

¹⁸ In general, enterprises in the FSU must pay workers in either cash or commodities. Other instruments of payment, such as checks, are not widely recognised or used. During the cash shortage in 1992, some enterprises tried, with mixed success, to pay workers with vouchers that could be redeemed locally for commodities.

zone, since each of the countries in the zone has its own central bank, each of which can issue noncash ruble credits. However, the Central Bank of Russia (CBR) has exclusive authority to issue cash rubles.¹⁹

(i) *Inter-republican transfers via non-cash credit control and the payments regime*: The main monetary instrument of each central bank of a country in the ruble zone is the selective quantitative control over credit (or non-cash) ruble emissions. The fungibility of the credit emissions of the central banks located in different countries, and the implied ability of individual central banks to export the inflation tax and force transfers from Russia, are closely related to the type of inter-republican payments regime in place. We consider two payments scenarios: one in which the CBR automatically recognises and finances negative balances in inter-republican trade, and a second scenario in which a strict credit limit is specified. The first payments scenario was in place in the FSU during the first half of 1992.

As of January 2, 1992, all inter-republican transactions, including the provision of cash rubles from Russia, were to be carried out through bilateral 'correspondent accounts' held by each of the republican central banks with the Central Bank of Russia. When the non-Russian republics ran ruble deficits on trade, these were met in the correspondent accounts only up to the level of bilateral credit provided to the republic by the CBR. However, no effective mechanism was implemented to address overdrawn balances. Accordingly, the non-Russian republics used this system as a line of credit, without extreme concerns about repayment of these credit extensions. This led to free-rider problems and excessive inflation.²⁰

The political-economic benefits of credit expansion — the domestic output effects — are primarily internal to the country in question. But the costs of credit expansion are distributed throughout the FSU, in terms of higher inflation. Hence, each central bank has an incentive to extend credit. The resulting equilibrium is one of excessive domestic credit issuance.^{21,22}

¹⁹ The other monetary instruments of the CBR include interest rates on CBR lending to commercial banks, restrictions on the interest rates paid by the Savings Bank (which deals with household transactions) and commercial banks (which deal with enterprise transactions), and reserve requirements. Reserve requirements are fairly ineffective since there exist excess reserves in the banking system, partially due to the inefficiencies in the payments mechanism. Lending rates, often used for manipulating demand for credit in developed financial markets, are not particularly useful in Russia since they are not a central factor in the availability or disbursement of loans.

²⁰ Recall that inflation creation was to some degree checked by restrictions on flows of cash rubles.

²¹ The Nash equilibrium of this game is hyperinflation. Suppose that each central bank chooses a rate of credit expansion, π_j , and that the inflation rate is thus $\hat{\pi}$. Then, for central bank j , the best response is to choose a rate of credit expansion greater than π_j , so that real credit is expanding domestically. Hence, π_j cannot be a best response. Since this argument holds for any π_j , then there is no equilibrium inflation rate in this game. Hence, the result should be hyperinflation.

²² In principle, this system was partially reformed and tightened in Minsk in February 1992, when

The alternative payments regime, introduced on 1 July 1992, provided a clearer mechanism for reducing the inflationary tendencies of the republican central banks. The 1 July 1992 reforms of the inter-CIS payments regime limited the automatic financing of inter-republican trade deficits to fixed limits specified by bilateral correspondent accounts. Payments channelled through the CBR, including inter-republican cash transfers, thereafter were to be honoured by the CBR *only to the extent that there were sufficient funds in the relevant correspondent accounts*. These inter-republican payments were to be processed subject only to formal agreements and negotiated credit lines: the CBR effectively placed a cap on access to bilateral direct cash transfers from Russia.

The effect of this reform was to restrict the degree to which credit expansion in one country, say Ukraine, could spillover into the rest of the FSU. Once Ukraine had reached the ceiling in its correspondent account with the CBR, further credit expansion would not expand aggregate FSU credit. Rather, Ukrainian credit expansions would result in a depreciation of Ukraine credit rubles issued by other parts of the FSU. In effect, this tight payments system on ruble credit made each republic issue its own 'money', and the values of the respective moneys were determined flexibly. Uncertainty over these values, like uncertainty over any bilateral exchange rates, may have increased transaction costs on inter-republican trade.²³ The individual countries were restricted in their ability to export inflation, gain access to additional cash, and collect seignorage within the ruble zone.

Although the July 1992 reforms worked to increase monetary discipline, by August 1992 they were once again modified to restore leniency into the system. However, the new payments regime further disrupted trade due to a sharp contraction in the availability of the credits generally used for 'trade finance'. In contrast to the previous regime, the CBR now required prepayment on inter-republican trade, i.e. payment prior to the delivery of goods. The purpose of this policy shift was to eliminate inter-enterprise arrears.²⁴ This policy posed severe constraints on enterprises, especially those in countries running deficit positions in inter-republican trade, since their primary source of credit was eliminated.

the CIS states agreed that states had the right to impose payments restrictions if imbalances in trade were to occur (IMF, 1992a, p. 20). As implemented, this system proved to be an unreliable payments mechanism with settlement delays ranging to two months or greater and with parties originating the transactions compensated at uncertain ruble values. Enterprise participation in market-based inter-republican trade was deterred, instead promoting heavy reliance on barter, inter-republican agreements, and incentives for clearing outside of specified channels. Inter-enterprise arrears soared during this time, threatening the progress of market-based reforms.

²³ During this period, the commercial banks in CIS countries actively discounted the value of non-cash ruble issues by different republics. Apparently, this discounting did not occur in organised markets, but rather in bilateral transactions among banks (*Commercant*, various issues).

²⁴ This is discussed further in Ickes and Ryterman (1993).

Payments from non-Russian enterprises slowed, worsening the arrears problems for the latter.

From Russia's perspective, there was a negative income effect from the slow receipt of payments and the contraction of trade volumes. Arguing that Russia was imposing overly severe burdens on the republics, by the end of August 1992 the CBR back-tracked on the previous settlements system reforms. The CBR thereafter selectively issued transfers, i.e. flows of cash and credits, to former republics and to choice industries. These actions re-established the incentives for countries to pursue highly inflationary policies by issuing ruble credits. In addition, it provided favourable terms to enterprises heavily reliant on traditional Russian exports, muddying market-based mechanisms for transacting and further biasing conditions against industrial restructuring. Through the end of 1992 and into 1993, officials of the central banks of the former Soviet Union continued to consider further changes in the inter-republican payments mechanism, examining alternative proposals for systems with multilateral rather than bilateral clearing procedures.

(ii) *Inter-republican transfers via cash emission and seignorage*: In its capacity as the single source of ruble banknotes within the ruble zone of the FSU, the CBR controls the division of seignorage revenues across members. Within the zone, each member has sought a rule that would maximise its share of the total: in principle, receipt of a 'fair' allocation would play an important role in decisions about whether or not to stay in the zone. This view of 'fair' and the costs of surrendering control of the money supply to Russia are linked to a country's size and its reform objectives. As we emphasise below, the more rapid reformers would be least satisfied with the patterns of seignorage distribution imposed by Russia.

Under the old regime, cash rubles were distributed *territorially* based on the aggregate wage bill of a region. Cash was allocated according to the needs of the plan. With the demise of the Soviet Union, and the break-up of *Gosbank* into 15 independent central banks, the form of cash distribution changed dramatically. But the nature of cash distribution hardly changed, since each country in the zone continued to demand cash rubles to pay wages. This history suggests that one natural criterion for dividing seignorage revenue across countries would be across levels of economic activity, which could be used as a rough proxy for aggregate wage bills. Such a scheme seems a natural successor to the Soviet one and has the advantage of being easy to negotiate. Alternative allocation schemes could be based on country-specific shares in the aggregated NMP (net material product) of the FSU or the share of the FSU population in each of the countries. In 1992 and early 1993, Russia apparently retained a much higher share of cash issuance than the approximate sixty to sixty-five per cent suggested by any of these rules. Some evidence suggests that Russia retained close to eighty of total

seignorage revenue during the 1992, rather than the approximate sixty-five per cent share retained in 1990 and 1991.²⁵

The issue of seignorage division and allocation of ruble banknotes for countries staying within the ruble zone has been more than just a revenue issue in which the former republics perceived themselves as receiving inadequate rents. This division of cash posed restraints on reform objectives. To understand this, consider the current state of the financial system in the FSU, in which wages are paid in cash. For countries in the ruble zone, this cash is produced only by the Russian central bank.²⁶ If deliveries of cash are inadequate, enterprises are unable to fully pay wages.²⁷ Indeed, during the period of cash shortage — in the first half of 1992 — delays in wage payments were a common occurrence, not only in parts of Russia, but in other parts of the zone as well. These cash shortages were differentially experienced across countries, in part due to the presence of non-uniform rates of reform of countries during the transition era.

Countries that pursue different rates of reform also differ in their needs for cash balances. The reason is that the demand for cash rubles depends on nominal income. Hence, it is related to the price level. Although inflationary pressures have been strong throughout the ruble zone, those parts of the zone that liberalised prices and wages first have, *ceteris paribus*, a higher demand for cash. This last consideration is not a minor issue. Since Russia liberalised prices on 2 January 1992, prices have risen dramatically. Throughout the first half of 1992, there was a cash shortage in Russia and the CBR was reluctant to distribute scarce cash outside Russia. The other countries of the FSU found themselves importing Russian inflation and having the real value of their cash holdings eroded. For both slow and more rapid reformers, the reluctance of the Russian central bank to distribute cash posed a serious threat to their own economies.

Those countries that implemented radical price reform and received inadequate cash shipments from the CBR experienced the greatest immediate erosion in the purchasing power of their populace. The inability of the governments to pay wages threatened to erode popular support for reform programs and potentially threatened the continued existence of the more radical reforms. In this setting, the introduction of independent currencies by reforming economies undertakes a new function, since these independent currencies could be used to prevent Russia's cash withholdings from undermining political momentum for more radical reform programs. At the same time, the decision to introduce an independent currency would free a country to obtain its own seignorage.

As we have noted, while the non-Russian republics are likely to achieve greater seignorage allocations with independent currencies as compared to their

²⁵ Noren and Watson (1992; p. 122).

²⁶ As opposed to checks. Wages are also, to some extent, paid in kind.

²⁷ The domestic banking system has an alternative source of cash: the deposits of the retail enterprises that sell to the public.

allocations within the zone, this fiscal issue cannot be divorced from other important transfers that are associated with remaining in the zone. The question of how to distribute the seignorage cannot be distinguished from the question of fiscal transfers in general, including the size of implicit to countries from the inter-republican pricing mechanism and explicit transfers from the inter-republican payments regime.

Before considering the size of these other transfers, two further considerations are worth noting on the seignorage issue. First, by leaving the zone, the country forgoes any other fiscal-cum subsidy transfers from Russia, *plus* the seignorage it would get anyway.²⁸ Thus, a comparison is required of the size of these bilateral transfers relative to seignorage revenue itself. Second, it is worth noting that the actual level of seignorage collection may differ within and outside of the ruble zone. While it is an open question whether leaving the ruble zone would lead to more inflation for countries, this may be the case for the non-oil producing nations.²⁹ Thus, the potential inflation cost of obtaining higher seignorage revenue must also be added to the ledger when assessing the value of monetary independence.

d. Implicit Inter-Republican Transfers via Trade Activity

One of the most important forms of implicit transfers across countries of the FSU occurred through patterns in and distorted pricing of inter-republican trade. Russia has threatened that countries that depart from the ruble zone will have to pay world market prices on inter-republican trade. In this section, we provide insights into the size of associated terms-of-trade and income effects of departing from the ruble zone, if the threat by Russia is carried out. We pay particular attention to the energy subsidies that remained on much of Russia's energy exports through 1993. These results are important for the theme of our arguments in Section 4: the timing of price reforms and new currency introductions is critical. It influences whether the decision to introduce a new currency is fully distinguishable from the choice of price structure, income shocks, and implicitly, a reform strategy. In Section 4 we also assess the conditions under which Russia would actually carry out its threat of immediate movement to world market pricing. These assessments help shed light on the observed timing of country departures from the ruble zone in 1992 and 1993.

²⁸ Recall the discussion of the required transfers to small countries to encourage participation in a union.

²⁹ Let us suppose that the non-oil producing countries of the FSU will have a greater reliance on inflation. Then, with higher inflation, the demand for real money balances will decrease. Hence, the *inflation-tax base* will shrink and to obtain the target level of revenue these countries may have to inflate even faster.

TABLE 2
Sectoral Composition of Import Transactions in Former Soviet Union
(domestic prices, millions of 1990 rubles)

Importing Country	All Products		Energy		Food & Agriculture		Machinery & Light Industry	
	Total Interstate Imports (mln. 1990 rbl.)	Russia's Share in Total Imports (%)	Interstate Energy Imports as % of Total Imports	Share Energy Imports from Russia (in %)	Interstate F&A Imports as % of Total Imports	Share of F&A Imports from Russia (in %)	Interstate M&LI Imports as % of Total Imports	Share of M&LI Imports from Russia (in %)
Armenia	3715	47.83	8.2	43.8	13.7	28.7	46.8	48.6
Azerbaijan	4247	52.78	10.6	55.4	13.6	24.1	43.0	55.9
Belarus	14841	62.63	12.8	91.0	9.3	21.9	44.5	57.4
Estonia	3158	59.01	7.7	86.3	12.5	30.8	47.4	52.7
Georgia	4949	54.57	7.1	59.9	16.2	31.4	43.1	56.2
Kazakhstan	14314	63.39	12.2	89.8	10.2	25.3	46.7	54.8
Kyrgyzstan	3179	48.39	10.7	41.7	13.1	24.7	46.6	48.6
Latvia	4711	52.43	12.1	38.0	7.2	19.7	46.8	52.1
Lithuania	6022	61.24	16.5	72.5	6.4	25.9	45.4	62.7
Moldova	4992	49.31	11.2	35.3	8.1	28.3	45.5	55.3
Russian Federation	67284	—	4.4	—	23.2	—	47.4	—
Tajikistan	3359	44.57	10.4	28.9	18.1	17.2	40.3	53.2
Turkmenistan	2923	43.63	3.2	11.4	19.7	13.1	51.6	48.4
Ukraine	38989	74.10	11.0	90.7	5.8	49.2	49.5	67.7
Uzbekistan	11864	50.04	9.3	29.1	18.4	13.8	44.1	56.0

Source: Michalopoulos and Tarr (1992), various tables.

(i) *The shift to world market pricing on inter-republican trade:* Bilateral trade between the former republics and Russia remains extensive. Intra-regional trade still accounts for an extremely high share of all external activity of the non-Russian countries of the FSU, although for some the share is declining rapidly. Except for Russia most countries of the FSU conducted about 85 per cent of their total trade intra-regionally in 1992. This trade is also extremely important relative to the size of the economies of these countries, often directly accounting for more than 40 per cent of GDP. The actual sectoral composition of the import and export transactions for each country are presented in Tables 2 and 3, respectively.

Relative to prices in place prior to 1992, movements to world-market prices with hard-currency settlements on inter-republican trade would lead to significant changes in the pattern of bilateral inter-republican trade would lead to significant changes in the pattern of bilateral inter-republican subsidies and implicit transfers. A recent study by Tarr (1994) provides some insight into the short-term effect on income of moving to world market prices on inter-republican trade.

Based on bilateral agreements for 1992, Tarr estimates that only three countries — Russia, Kazakhstan, and Turkmenistan — would be likely to experience an improvement in their intra-FSU TOT if the prices of traded goods move to world market levels (Table 4). As net creditors in bilateral trade with Russia, Kazakhstan and Turkmenistan were not net recipients of Russian TOT subsidies.

In contrast, the remaining twelve former republics are likely to experience a decline in their intra-FSU TOT. In fact, Tarr predicts that eight of the twelve are likely to experience at least a 25 per cent decline in their TOT. The countries with the largest estimated declines are Moldova, Lithuania, Latvia, Belarus, and Armenia. Along with these TOT declines are corresponding losses of implicit subsidies from Russia and contractions of income.

Tarr's estimates of changes in the TOT are based solely on the removal of subsidies; they do not include any change in the pattern of trade that might be related to a production response on the part of enterprises. Consequently, they ignore two important dynamic forces caused by the TOT shocks. First, the change in the TOT will induce a short-run loss in economic coordination among

TABLE 3
Sectoral Composition of Export Transactions in Former Soviet Union
(domestic prices, millions of 1990 rubles)

<i>Exporting Country</i>	<i>All Products</i>		<i>Energy</i>		<i>Food & Agriculture</i>		<i>Machinery & Light Industry</i>	
	<i>Total Interstate Imports (mln. 1990 rbl.)</i>	<i>Russia's Share in Total Imports (%)</i>	<i>Interstate Energy Imports as % of Total Imports</i>	<i>Share Energy Imports from Russia (in %)</i>	<i>Interstate F&A Imports as % of Total Imports</i>	<i>Share of F&A Imports from Russia (in %)</i>	<i>Interstate M&LI Imports as % of Total Imports</i>	<i>Share of M&LI Imports from Russia (in %)</i>
Armenia	3429	54.01	0.2	0.0	12.1	88.8	65.8	48.3
Azerbaijan	6109	60.69	13.0	50.3	30.8	77.0	37.7	53.8
Belarus	17229	57.70	7.2	51.5	7.0	59.3	64.6	58.8
Estonia	2900	62.63	4.3	55.8	23.2	88.2	48.1	54.6
Georgia	5724	62.16	0.4	26.0	47.8	75.07	34.6	49.2
Kazakhstan	8443	50.65	15.6	63.8	27.2	23.1	18.0	37.3
Kyrgyzstan	2446	36.68	0.04	8.9	24.3	34.1	62.2	53.7
Latvia	5028	49.97	1.9	4.1	23.2	57.6	45.0	47.7
Lithuania	5349	50.61	8.1	25.1	17.3	75.4	60.3	49.6
Moldova	5853	59.60	0.4	0.0	52.1	68.4	36.6	51.5
Russian Federation	74710	—	13.0	—	4.5	—	45.0	—
Tajikistan	2377	49.11	3.2	0.0	20.9	60.9	54.2	45.6
Turkmenistan	2469	51.70	30.9	19.1	13.3	90.3	45.3	65.0
Ukraine	38319	65.89	1.9	41.8	20.0	63.2	46.1	65.6
Uzbekistan	8169	59.25	9.9	50.7	14.9	65.4	54.3	64.6

Data source: Michalopoulos and Tarr (1992), various tables.

TABLE 4
 Moving to World Prices: Terms-of-Trade and Short-run Output Effects
 (source: Tarr (1994))
 Estimates based on 105 sector aggregation of output, with 1990 data

	<i>Terms of Trade Effects of Moving to World Prices in Respective Market (in per cent)</i>			<i>GDP Impact of Terms of Trade Effects from Respective Markets (as per cent of 1990 GDP)</i>		
	<i>Inter-republican Trade</i>	<i>Extra-republican Trade</i>	<i>Total Trade</i>	<i>Inter-republican Trade</i>	<i>Extra-republican Trade</i>	<i>Total Trade</i>
Armenia	-30.2	54.5	-23.8	-11.1	3.5	-7.6
Azerbaijan	-19.1	167.9	-7.3	-6.7	10.5	3.7
Belarus	-28.6	86.6	-20.1	-11.4	7.2	-4.2
Estonia	-35.5	12.7	-32.1	-13.5	0.7	-12.7
Georgia	-33.8	167.9	-20.6	-12.1	12.1	0
Kazakhstan	13.5	81.5	19.0	3.4	4.0	7.4
Kyrgyzstan	-3.7	38.8	1.2	-1.3	2.6	1.4
Latvia	-29.0	3.0	-24.0	-11.6	0.2	-11.3
Lithuania	-36.5	77.5	-30.5	-15.6	5.9	-0.7
Moldova	-44.3	37.7	-38.4	-18.8	2.7	-16.1
Russian Federation	39.3	154.3	79.0	4.5	13.2	17.7
Tajikistan	-17.0	113.7	-6.8	-6.9	8.6	1.7
Turkmenistan	43.3	61.7	50.1	15.9	3.6	19.5
Ukraine	-27.2	56.1	-18.1	-6.4	3.8	-2.6
Uzbekistan	-6.3	49.9	-3.1	-1.9	3.1	1.1

enterprises and across countries. This can compound income losses. Second, over time enterprises are induced to make important adjustments over the long term that are critical to their ability to transact in the international market. However, the willingness of enterprises to make these adjustments will depend, at least in part, on the credibility with which their governments can commit to not mitigating the harsh effects of the shock *ex post*.³⁰

Through 1992 and much of 1993 Russia continued to provide many of the other former republics with energy and other products at highly subsidised prices. However, when countries left the ruble zone, Russia ended or seriously reduced many of these subsidies. For example, when the Baltic countries left the zone in 1992, energy prices rapidly rose from about 20 per cent to nearly 100 per cent of world market levels. Consequently, departure from the zone has caused these former republics to experience a serious decline in their terms-of-trade (TOT) with Russia.

³⁰ That is, the government must refrain from rescuing an enterprise after its losses from the TOT shock are realised, thus preventing it from any possibility of failure.

This type of cessation of subsidies and implicit transfers is not uniformly applied to countries. For some countries the TOT shock has been mitigated by reliance on bilateral trade agreements with Russia. An important share of Russia's trade with the other former republics continues to be transacted through these agreements, rather than through enterprise-to-enterprise negotiations. The persistence of such agreements, beyond the obvious role of limiting the impact of market forces on pricing and production decisions, sometimes undermines declared movements to world market pricing on energy and related products. For example, the pricing of oil in Russian-Ukrainian and Russian-Belarusian clearing agreements was complete at the end of 1993, set slightly below world market levels.³¹ However, the basket of goods exported to Russia from Belarus in exchange for this oil is 'softer' or of lesser value than the basket of goods exported from Ukraine for comparable volumes of oil.

Another factor moderating the declared movement of energy prices to world market levels on inter-republican trade are the permitted delays in payments for energy imports from Russia. According to estimates by the Russian government, the value of these delayed payments amounted to \$2.5 billion by November 1993.³² This phenomenon also amounts to a continuation of some energy subsidies from Russia, despite declared movements to world market pricing.

4. THE TIMING AND IMPLICATIONS OF INTRODUCING NATIONAL CURRENCIES

A variety of forces interact in a country's decision to adopt a new currency. In some cases the importance of an independent currency overrides other factors, such as the loss of transfers from Russia, that might otherwise have played a decisive role.³³ In other cases, events such as the shortages of cash that developed in the first half of 1992, or the Russian currency reform (confiscation) program of July 1993, pushed some countries in the direction of monetary independence even though they previously may have been reluctant to pursue this path.³⁴

³¹ Currently, part of Russia's oil is delivered at world prices, part is delivered at subsidised prices, and part according to barter arrangements.

³² *Radio Free Europe/Radio Liberty Daily Report* November 23, 1993. The source of this estimate was Deputy Prime Minister Shokhin.

³³ One important factor in this choice may be distributional, in an ethnic sense. One of the most significant costs of introducing a new currency is the burden placed on enterprises that are most integrated with Russia. These enterprises tend to be former all-union enterprises, and are dominated by ethnic Russians. The adoption of an independent currency may then have significant ethnic effects. A government that wishes to signal its bias in favour of its own ethnic group may wish to play this card. This may be one factor explaining the early adoption of new currencies in the Baltics. For an analysis of the ethnic reaction to the introduction of the som in Kyrgyzstan, see Huskey (1993; p. 41).

³⁴ This motive is independent from the seignorage motive. The shortage of cash allocations from

Monetary independence is important in order to signal that a comprehensive economic reform will be undertaken. This decision begins to address a key problem in the transition: governments have difficulty making their reform programs credible. Adopting a new currency signifies a break with the past. If combined with a comprehensive reform package, the independent currency can improve the country's situation, even when the country is a net loser of explicit and implicit transfers from Russia. Overall gains can arise if the new currency is successful in enhancing the credibility of the reform package. We return to these issues below.

Although economic transfers do not therefore provide a complete picture of the implications of currency independence, their magnitude and direction are important for understanding the 'winners' and 'losers' from departures from the ruble zone. Moreover, understanding the 'balance sheet' of the consequences of introducing a new currency is helpful in understanding the timing of this move. Our discussion is based on two alternative scenarios about the timing of pricing reforms on inter-republican trade: (i) world-market pricing is not yet introduced on inter-republican trade, and (ii) world-market pricing is already introduced on inter-republican trade. These scenarios help to explain the actions of countries of the FSU in 1992 and 1993.

In periods before world market pricing is introduced on inter-republican trade, the introduction of national currencies is associated with large terms-of-trade shocks. As discussed in Section 3, for all former republics, possibly with the exception of Kazakhstan, Turkmenistan and Russia, these shocks almost certainly would imply that significant income losses are experienced in the short run. A country (or governing group) that does not want to implement rapid reforms and accept a radical shift in prices therefore may view departure from the ruble zone as leading to an unacceptable outcome. Moreover, the income losses would be prolonged if impediments to the reallocation of resources within the economy are maintained. Therefore, one would expect countries engaged in more gradual programs of economic reform to avoid departure from the ruble zone in the periods preceding world-market pricing on inter-republican trade. These slow reformers would also be under less pressure to accumulate large cash allocations in order to pay wages, since nominal wages might not increase as rapidly as the nominal wages of rapid reformers. For these countries, it is difficult to imagine that the 'undesirable' economic effects would not outweigh the relative symbolic importance of having a national currency.

The argument that 'gradual' and non-reforming countries would choose to remain in the ruble zone prior to the adoption of world prices in inter-republican trade fits well with the paths followed by Armenia, Azerbaijan, Moldova,

the Central Bank of Russia interfered with economic activity and reform agendas in countries of the FSU.

Tajikistan, and Uzbekistan. These countries have been relatively slow reformers, and each refrained from introducing new currencies until Russia began to press the issue in the Summer of 1993. Kazakhstan and Turkmenistan are possible exceptions to this rule. These countries could seek independence to speed the introduction of a new pricing regime on trade and absorb associated income gains.³⁵ These gains are possible even without a reallocation of productive resources. For Kazakhstan and Turkmenistan, participation in the ruble zone makes sense mainly if Russia had been providing shares of seignorage that were larger than both the allocations possible with independent national currencies and the amount of their implicit transfers to Russia.

For more rapid reformers, the choice of currency area participation is more complex in the period preceding relative pricing reforms, but likely to weigh in favour of independent currency introduction. Weighing against new currency introduction, in addition to negative income effects from the TOT changes, will be strong sectoral and distributional effects. In principal, these could be dispersed via a redistribution program. More practically, longer run negative effects would be reduced under a regime which allows productive inputs to reallocate rapidly in response to the new relative prices. In addition, the reforming countries would be able to capture a higher proportion of seignorage revenues and of cash allotments than they captured within the system dominated by Russia. In this case, it also is less likely that reform efforts which led to relatively high inflation would be undermined by the inability of a government to make adequate wage payments to the population. Even without resorting to arguments based on symbols of sovereignty, governments undertaking radical reforms may be politically strengthened if their country departs from the ruble zone.³⁶

The important exceptions are Estonia, Latvia, Lithuania and Moldova, all of whom were expected to experience very large immediate income losses on departure from the zone in 1992. Moreover, the losses of implicit subsidies from Russia were unlikely to be compensated by the net gains from the seignorage revenues that these countries are able to extract with independent national currencies. These countries would require an extremely rapid adjustment — more rapid than regional and global history would suggest — for departure from the ruble zone prior to movements toward world market pricing on inter-republican trade to be associated with less crippling economic losses. These sharp losses would likely lead to political instability and bode poorly for the tenure of the political parties that initiated monetary independence.³⁷

³⁵ Although it is possible that reductions in trade volumes could offset these gains.

³⁶ In addition, as we argue in Section 5 below, a reforming country may also derive a 'signaling benefit' from the adoption of an independent currency.

³⁷ This conclusion is based on the assertion that the consequences of TOT adjustments will be attributed to the introduction of a national currency, and the blame therefore assigned to the introducers of the national currency.

The political implications of the reforms are less controversial under the scenario wherein a country's departure from the ruble zone follows price reforms on inter-republican trade. In this case, the negative income shocks from inter-republican TOT adjustment have already buffeted the former republics and may even be viewed as having been imposed by Russia. The negative income shocks experienced by countries cannot be reversed if a country alters its position *vis-à-vis* the ruble zone.

The timing of the price reforms on inter-republican trade depends, to a large extent, on the will of Russia. The key point, however, is that the willingness of Russia to continue to provide transfers to non-Russian republics is most likely to continue to decline over time. This suggests that the current calculus of costs and benefits of ruble zone departure is not constant over time, and is more likely to shift in favour of independence when the transfers from Russia dwindle significantly. The speed of lost transfers from Russia depends on the balance of forces within Russia. Pro-reform forces are less likely to favour continuing these transfers, as they put less weight on the preservation of inter-republican ties in industry.

Unless the non-Russian republics receive a new allocation of direct subsidies from Russia, which is quite unlikely, both slow reformers and more rapid reformers are likely to capture larger shares of seignorage revenue under independent currencies than within the monetary union. At the same time, these countries, after attributing the TOT shocks to Russia, can make an affirmative statement of political sovereignty by introducing their own currencies. The introduction of an independent currency acts to signal and affirm a country's reform trajectory.

a. Russia's Role in the Ruble Zone

We have not yet fully developed the implications of these alternative scenarios for the centre of the ruble zone, Russia. Russia implicitly subsidizes the other former republics through the price structure on inter-republican trade and, in turn, extracts rents from these countries in the form of seignorage. In terms of income and net transfer effects, Russia is a net loser from this strategy.³⁸ But, this regime also permits Russia to maintain a degree of influence over the activities of the other nations of the FSU. This influence promotes demand for some Russian products and indirectly props up traditional Russian industries. Although the assertion of influence and control is not generally expressed publicly as a goal of Russian economic policy, historic precedent and the December 1993 Russian

³⁸ The magnitude of this transfer is estimated to be as much as 14 per cent of Russia's GDP in 1992 (Whitlock, 1993a; p. 35).

elections suggest that this factor probably retains considerable force among some circles in Moscow.

Politically, Russia may have gained by delaying the demise of the pricing structure. As long as Russia avoids responsibility for imposing a large TOT adjustment, it also avoids responsibility for important issues of inter-enterprise income redistribution that follow a large shift in relative prices on inter-republican transactions. Since established industries in Russia still maintain considerable power, and since these industries are expected to lose from changes in the system, their representatives are likely to try to favour policies that encourage maintenance of a large ruble zone.

The game on pricing reforms that evolved in Russia is an interesting one: groups advocating support of 'traditional' industries used the threat of shifting trade to world market prices to deter countries from departing from the ruble zone. However, as we observed in 1993, and as will be discussed further in Section 5, for larger countries of the FSU these threats were not credible: even if these non-Russian republics depart from the ruble zone (so that Russia is unable to collect further seignorage rents from them), for distributional reasons the same groups in Russia would advocate that the threats of imposed world market prices should not be carried out. Some established groups would attempt to block the relative price adjustment to avoid internalising the unfavourable TOT outcomes.

In Russia, the primary supporters of the ruble zone have been those with the most to lose from a disruption in the *status-quo*. Large enterprises that rely heavily on inter-republican trade would object to the (perceived) increases in the cost of inter-republican trade and to anticipated reductions in markets for their products. Maintenance of the ruble zone is one way to preserve 'large economic space' of the former Soviet Union and to minimise the short-term disruptions faced by these industrialists.

However, despite these objectives of supporters of traditional industries, throughout the second half of 1992 and early 1993 the magnitude of Russian transfers to other members of the ruble zone became increasingly transparent. Continuation of the *status-quo* was more problematic, as the government struggled to stabilise and reduce the budget deficit.³⁹ Moreover, attempts to limit the size of the Russian trade surplus with the rest of the ruble zone, estimated to be between six and eight per cent of Russian GDP, already provided some impetus to enterprise adjustment, despite their continued reluctance to do so. Consequently, the forces within Russia that sought to hold the ruble zone intact were seriously weakened.

The paradox of 1992 was that the attempts to maintain the ruble zone increased the costs of trade between the former republics. This made an alternative

³⁹ The Russian government and the IMF estimate that Russia's financing of trade with non-Russian republics was more than one trillion rubles in 1992.

currency control and allocation regime imperative. One of the alternative regimes, wherein Russia itself would leave the ruble zone, was not a serious alternative. Russia's abandonment of the ruble is not an idea well motivated by any sovereignty or nationalist motives: the ruble is already controlled by Russia and already is a national symbol (even if a weak one). Moreover, Russia's withdrawal from the ruble zone would lead to a collapse of the entire monetary system in place in the zone.⁴⁰ If combined with the cessation of oil and raw materials sales at subsidised prices, Russia would be freed from its transfers problem but at the expense of essentially declaring 'economic war' on its neighbours. This would impact poorly on Russia's designs to maintain some influence in the region.

In the absence of Russian withdrawal from the ruble zone, three more plausible alternatives were available to Russia in this economic and political environment:

- (i) A Ruble Area Arrangement: Russia maintains the ruble, other former republics introduce new currencies, and a common payments system is established to reduce the costs of trade;
- (ii) Russia maintains the ruble as its sovereign currency and forces other countries to depart from the ruble zone;
- (iii) Russia maintains the ruble as its sovereign currency, and leaves other countries to decide unilaterally to depart from the zone.

The first option, setting up a payments system that uses the ruble as a means of settlement, has been widely discussed and a proposal to set up an Interstate Bank for smoothing trade was approved in late 1992. The basic idea of this scheme is to use the ruble as a reserve currency for settling payments imbalances incurred in the course of normal trade activity. The advantage of this system is that it would facilitate trade within the area. While countries would have their own currencies, they would settle imbalances with their ruble reserves. This mechanism would require a continuation of Russia's status as a structural creditor to the system. However, a major hurdle to the success or feasibility of this payments system was the absence of a prior agreement on how to deal with Russia's structural creditor status.⁴¹ Despite the fundamental flaws in this system, there was still a point in

⁴⁰ This is reminiscent of the asymmetry in the Bretton Woods system. Other countries could devalue their currencies against the dollar, but the US could only devalue against gold. This was often referred to as the *n*-1 country problem.

⁴¹ Suppose there is an agreement that other members of the area will have a fixed credit or inter-republican deficit ceiling in the ruble area. As long as Russian inflation remains high, the other members have incentives to front-load their import purchases from Russia and move quickly to these deficit ceilings. Payments thereafter would be disrupted. This defect of the payments union could be remedied by using an external currency, such as the dollar, as the reserve currency. But, this would require either a transfer of dollars to the area by the international community or a purchase of dollars by the area participants. The former does not seem likely and the latter does not seem feasible.

time when the Ruble Area was politically feasible. But, by 1993 this point had passed. The increased transparency and more widespread knowledge of the extent to which Russia transferred resources to other members of the zone closed any windows of opportunity that may have existed for the ruble area.

In the absence of a workable agreement on a ruble area, Russia is left with the options of forcing other countries out of the ruble zone, or just raising the costs of letting them remain in the zone. The former option, maintaining the ruble but explicitly forcing other countries to abandon it, is a possibility, but as such must be assessed in light of Russia's other objectives and its inter-republican relations. In part, if Russia forces countries to depart from the ruble zone, Russia assumes blame for the consequent internal and inter-republican effects from the change in the relative price structure and from the costs of collapsing the pre-existing monetary regime.

If Russia can avoid responsibility for imposing a large TOT adjustment, it may also avoid direct responsibility for important issues of inter-enterprise income redistribution that would follow a large shift in relative prices on inter-republican transactions. Moreover, by initiating the breakup of the existing system in such a heavy-handed way, Russia risks reducing both its influence in the area and any change of gaining the cooperation of the other former republics in settling the debt of the former Soviet Union.

This leads to the last option. Russia maintains the ruble as its sovereign currency, but creates a set of circumstances within which the other members of the zone initiate their departures. As we have observed, Russia can create these conditions by limiting seignorage allocations and reducing various transfers to zone members. This strategy partially isolates Russia from the wrath of lobbying groups from Russia's large enterprises and also reduces some of the immediate fiscal burdens associated with outward transfers from Russia. This approach does have distributional impacts on Russia (and on its trading partners) but Russia could still receive the benefits from the improvements in its own terms of trade without receiving the full brunt of the blame for causing the contractions experienced by its trading partners.

An important factor motivating Russia to choose the second or third option is the increasing domestic importance of stabilising the ruble. As domestic inflation has worsened, the costs of not eliminating the ruble zone impediments to stabilisation (including outward transfers to the other former republics) appear to outweigh any of the potential gains to keeping the zone intact. Moreover, a range of transfers from the West to Russia are associated with liberalising energy prices on inter-republican trade. Both of these forces reduce the weight of the industrialists in blocking both the disintegration of the ruble zone and Russia's movement toward world market pricing on inter-republican trade.

A major complication with any policies that induce countries to leave the ruble zone is that the rubles may return to Russia. Some schemes for retiring the ruble

may lead countries to dump their rubles on Russian markets, sharply contributing to inflationary stimuli in Russia.⁴² For example, when Ukraine left the zone at the end of 1992 a mechanism needed to be implemented to prevent the excess rubles from flowing back to Russia.⁴³ Russia's fear of 'inflation spillover' from the 'ruble return' has given some countries, in particular the larger countries of the FSU (Belarus and Ukraine) negotiating power in smoothing the movement toward independence from Russia.⁴⁴ The lack of a significant inflationary and retaliatory threat by small countries, such as the Baltic nations, underscored the weakness of their negotiating position in their attempts to ease the TOT and income effects from their departure from the ruble zone.

Russia's response to the ruble zone dilemma has been a combination of the second and third alternatives. The currency reform/confiscation of July 1993, which required pre-1993 rubles to be exchanged for new rubles in limited quantities, forced the hand of the other remaining ruble zone countries. Even prior to the currency reform, the Russian government sought to reconstruct the ruble zone along lines that were more favourable to Russia; i.e., that reduced the size of the fiscal transfers. In mid-June 1993, for example, Russia insisted that Belarus subordinate its monetary policy to that of Russia, or else risk the end of cash ruble shipments (Whitlock, 1993a, p. 37). The other remaining members of the ruble zone resisted such moves, all the while hoping that the zone would remain. Russia's currency reform accelerated the breakup of the zone. The recall of pre-1993 rubles provided Russia with the chance to credibly impose a new set of rules on its partners. Russia offered new terms for countries that wanted to continue to use the ruble, most importantly complete subordination of monetary policy and use of the Russian ruble as exclusive legal tender, and used as the conversion of old rubles as the 'carrot.'

The response to these developments has been varied. Tajikistan has stated its willingness to meet Russia's terms for remaining in the zone. Armenia, Kazakhstan, and Uzbekistan have announced intentions to introduce new currencies, but have also announced their intentions to join the 'new ruble zone.' Belarus has not made any commitments. Other countries have opted not to join, choosing instead to introduce their own currencies. These countries include Azerbaijan, Georgia, Moldova, and Turkmenistan.

⁴² Indeed, the Central Bank of Russia claims that during the first half of 1993 alone, Russia absorbed R500 billion from other states in the whole zone (Whitlock, 1993b; p. 36).

⁴³ If one country leaves the ruble zone, the remaining members, with the exception of Russia, can partially insulate themselves by stamping their currencies. Were Russia to attempt this, however, it would amount to the introduction of a new Russian ruble, and hence an end to the zone.

⁴⁴ There are also third party spillover effects. For example, when Kyrgyzstan introduced its own currency, the som, Uzbekistan and Kazakhstan reacted angrily. Uzbekistan cut off gas and telephone lines to southern Kyrgyzstan. The source of this anger was the fear that these countries would suffer from ruble dumping in their markets.

5. CONCLUSIONS

Throughout this paper we have described the tradeoffs that countries of the FSU confront as the ruble zone disintegrates. This disintegration is already well underway. The Baltic nations have left the zone: Estonia has introduced the kroon, Latvia has introduced the Latvian ruble, and Lithuania has introduced the talonas coupons, soon to be replaced by the lit. As noted, the independence of these relatively small economies poses little economic threat to Russia. In turn, there was little Russian hesitation in moving to world market pricing on associated trade transactions and cutting off transfers to these nations. Indeed, while a most favoured nation trade agreement with Latvia is in place, Estonia and Lithuania have not yet signed agreements with Russia, and taxes on imports from these countries are assessed at twice the MFN (most favoured nation) rates. All of the Baltic states have experienced sharp TOT losses and declines in real income, and each recently has gone into arrears to Russia in its payments on oil and gas imports. In June 1993 Kyrgystan began to introduce a new national currency. Azerbaijan, Moldova and Belarus all have in place coupons traded in parallel to the ruble, and have separate national currencies under consideration.

For Ukraine and Belarus, Russia has been slow to enforce the threat of pricing inter-republican transactions at world market prices. The continuing political problems in Russia have slowed Russian reforms and lent a greater voice to existing large industries within Russia which, in turn, mean delaying the threatened imposition of world market pricing on some inter-republican trade. This implies the continuance of implicit subsidies by Russia to the some former republics, despite that fact that these countries have departed from the zone. While this delays some of the consequent short-term output contractions, it also further delays the adjustment process.

If the pricing threat is carried out, the loss of implicit transfers from Russia is likely to cause large contractions in Ukraine and Belarus. Without reform initiatives that facilitate adjustment, these contractions can be prolonged. While the reforms lead to louder objections from the groups unfavourably affected by the new system, the threat of prolonged losses places greater pressure on the government to encourage resources to be reallocated in response to the new set of relative prices. Thus, the act of initiating independent currencies could reinforce a reformist trajectory.

One of the implications of our analysis appears to precisely contradict the turn of events in some countries of the FSU. Our analysis has suggested that income and output contractions are likely to be large for the Baltic nations while the consequences of an independent currency for Kazakhstan and Turkmenistan are relatively small. If there is any prediction to be made from the analysis of the short-term costs and benefits of leaving the zone, it is that the former countries would try to remain in the ruble zone, while the latter would opt for a new

currency. Why have new currencies been introduced in the former but not the latter? Why, in other words, is our analysis of the costs and benefits of independent currencies yielding opposite predictions from events for some countries?

The main point is that our analysis is not meant to be predictive but rather is intended to indicate the economic consequences of ruble zone departures. The order of departures from the ruble zone entails more than an economic decision. Politics matter. Our analysis is directed at analysing the consequences of introducing a new currency. We mentioned in the introduction that independent currencies are a symbol of sovereignty. Hence, unless a population is exceptionally informed about the range of issues presented in this paper, one should not expect the calculus of costs and benefits to predict which countries will be first to adopt independent currencies.

Another more powerful explanation of why the calculus of costs and benefits does not predict the pattern of departures from the ruble zone is associated with the signaling role of an independent currency. The move to an independent currency link with the other countries of the FSU, a government may hasten the process of economic reform. Indeed, to make the move to a new currency a success, a set of ancillary reforms are needed which may be painful to implement, such as price liberalisation and control over fiscal deficits. It may be easier to undertake these reforms if they can be tied to the successful adoption of an independent currency.

The ability of an independent currency to reinforce a reformist economic strategy is well exemplified by the experience of Estonia. When the kroon was introduced, its value was strictly pegged to the Deutschmark. To enhance monetary stability, Estonia opted for a currency board,⁴⁵ the strictest type of monetary arrangement. Under this arrangement the Central Bank cannot engage in an independent monetary policy and fiscal deficits cannot be monetised.⁴⁶ The currency board simply converts foreign exchange earnings into domestic currency at the fixed peg. While this is an expensive way to re-monetise the economy, Estonia's policies sent strong signals that reform intentions were serious and that a radical break with the past would be enforced. The reformers hoping to accelerate the process of economic adjustment harnessed the nationalistic fervor associated with the new currency to signal a willingness to work to end the painful reform policies that otherwise may have been unsustainable.

The introduction of the kroon was thus seen as a means of enforcing a radical break with the past. This forces enterprises to end their dependency on the old structures, and enhances the reform process. For reformers who seek to

⁴⁵ See, for example, Hansson (1992).

⁴⁶ Thus, Estonia did not gain, in terms of seignorage revenue, from leaving the ruble zone. As long as the currency board is maintained, the government cannot obtain such revenue.

accelerate the process of economic adjustment, choosing an independent currency may be a good strategy. It harnesses the nationalist fervor surrounding the new currency to the painful reform policies that may otherwise be unsustainable. This suggests that countries that are most likely to leave the ruble zone are those that seek a reform path that is more progressive than that of Russia.

While Ukraine also has introduced an independent currency, the karbovanets, its monetary break with Russia was much less dramatic than those of the Baltic nations. Ukraine still receives some (negotiated) credit from Russia via the correspondent accounts on trade transactions. Goods prices on inter-republican trade conducted via 'indicative' and 'obligatory' lists continues the process of terms-of-trade subsidies from Russia. While volumes of recorded trade have contracted, Ukraine has been temporarily shielded from the sharp TOT blow that was received by the Baltic nations. In turn, Ukraine has proceeded with an orderly withdrawal of rubles from circulation and has refrained from dumping these in Russian markets and further aggravating Russian inflation.

There is an ironic postscript to our analysis, especially in light of the discussions that have taken place in the European Community. In the European Community, participation in the Exchange Rate Mechanism has, in part, been linked to the desire of countries to import the monetary discipline imposed by a strong centre, Germany. This embracing of monetary discipline in Europe does not threaten the sovereignty and independence of the member countries.⁴⁷ By contrast, the decision of countries to stay in the ruble zone clearly restricts the pace and direction of their economic reforms. Departure from the ruble zone is a rejection of both Russia's control over monetary policy as the centre and of Russia's reform strategy.

REFERENCES

- Aizenman, J. (1992) 'Competitive Externalities and Optimal Seignorage', *Journal of Money, Credit and Banking*, 24, 1, 61–71.
- Brown, A., B. Ickes and R. Ryterman (1993), 'The Myth of Monopoly: A New View of Industrial Structure in Russia,' World Bank, Working Paper.
- Buiter, W. and J. Eaton (1983), 'International Balance of Payments Financing and Adjustment' in G.M. von Furstenberg (ed.), *International Money and Credit: The Policy Roles* (International Monetary Fund: Washington, DC) –48.
- Canzoneri, M. and C.A. Rogers (1990), 'Is the European Community an Optimal Currency Area? Optimal Taxation versus the Cost of Multiple Currencies' *American Economic Review*, 80, 419–33.
- Casella, A. (1992), 'Participation in a Currency Union,' *American Economic Review*, 82, (4), 847–863.

⁴⁷ Except for those restrictions on monetary policy required for maintaining tightly controlled exchange rates.

- Casella, A. and J. Feinstein (1989), 'Management of a Common Currency,' in A. Giovannini and M. de Cecco (eds.), *A European Central Bank?* (Cambridge: Cambridge University Press) 131–56.
- Cukierman, A., S. Edwards and G. Tabellini (1992), 'Seignorage and Political Instability', *American Economic Review*, 82 (3), 537–555.
- Dornbusch, R. (1987), 'Exchange Rates and Prices,' *American Economic Review*, 77 (1).
- Fischer, S. (1982) 'Seignorage and the Case for a National Money,' *Journal of Political Economy*, 90, 295–313.
- Goldberg, L. (1993), 'Foreign Exchange Markets in Russia: Understanding the Reforms,' *Staff Papers* (International Monetary Fund, December).
- Goldberg, L. and I. Karimov (1994), 'Policy Reform, Internal Currency Markets, and Production Choices in Emerging Market Economies,' *Journal of Comparative Economics* (forthcoming).
- Gros, D. (1991), 'Economic Costs and Benefits of Regional Disintegration in the Soviet Union,' CEPS Working Document 55.
- Hansson, A. (1992), 'Estonian Currency Reform: Overview, Progress Report and Future Policies,' *Ostekonomiska Instiuet* (Stockholm, August).
- Huskey, E. (1993), 'Kyrgyzstan Leaves the Ruble Zone,' *RFE/RL Research Report*, 1.2 (35).
- Ickes, B. W. and R. Ryterman (1992), 'The Inter-Enterprise Arrears Crisis in Russia,' *Post-Soviet Affairs* (formerly *Soviet Economy*), 8 (4).
- Ickes, B.W. and R. Ryterman (1993), 'Roadblock to Economic Reform: Inter-Enterprise Arrears and the Problems of Transition,' *Post-Soviet Affairs* (formerly *Soviet Economy*), 1.9 (3).
- International Monetary Fund (1992a), *Economic Review: Russian Federation* (IMF: Washington, DC).
- International Monetary Fund (1992b), *Economic Review: The Economy of the Former USSR in 1991* (IMF: Washington, DC).
- Michalopoulos, C. and D. Tarr (1992), *Trade and Payments Arrangements for States of the Former USSR* (The World Bank: Washington DC).
- Mundell, R. (1961), 'A Theory of Optimal Currency Areas,' *American Economic Review*, 51, 657–65.
- Noren, J.H. and R. Watson (1992), 'Inter-Republican Economic Relations After Disintegration of the USSR,' *Soviet Economy*, 8 (2), 89–129.
- Tarr, D. (1994), 'The Terms-of-Trade Effects of Moving to World Prices on Countries of the Former Soviet Union,' *Journal of Comparative Economics*, vol. 18 (March), pp. 1–24.
- Whitlock, E. (1993a), 'Obstacles to CIS Economic Integration,' *RFE/RL Research Report*, 2, (27).
- Whitlock, E. (1993b), 'The Return of the Ruble,' *RFE/RL Research Report*, 2, (35).