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**Experiences with Monetary Integration and Lessons for Korean Unification**

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**Abstract**

This paper discusses the timing of monetary integration and supporting economic policies during a rapid and largely uncontrolled process of Korean unification. The paper concludes that the transitory use of a separate currency in each region and supporting economic policies would help limit the initial costs of unification although the extent of the eventual cost reduction would depend critically on the success of ensuing economic reforms in the North during the transition. Maintaining the competitiveness of the northern economy would need to be a primary policy objective in the case of an early introduction of a common currency.

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## SUMMARY

If a rapid unification process were to start in Korea in the near future and to proceed in a largely uncontrolled way, the timing of monetary integration and supporting economic policies would be critical. The introduction of a common currency at the outset of the transition would accelerate political and economic unification, but its temporary postponement supported by proper economic policies would help mitigate likely problems from the economic integration.

Taking account of other countries' experiences with monetary integration, this paper concludes that the transitory use of a separate currency in each region and supporting economic policies would help limit the initial costs of unification. Flexibility in the northern currency value could help northern enterprises retain competitiveness, reducing transitory losses in jobs and output. The use of a separate currency in each region would also help protect the macroeconomic stability of the South. However, if political pressures for wage equalization were to dominate the transition and lead to unsustainably large wage increases in the North, this dual currency system could reduce unification costs only marginally and temporarily.

The macroeconomic performance of a unified Korea will in the end depend more on economic and financial policies than on the monetary regime. Price stabilization would need to be a top policy objective in the North in the case of a late monetary integration. Maintaining the competitiveness of the northern economy would have to be at the core of economic policies in the case of an early monetary integration. Incentives for migration from the North to the South are likely to be strong due to the large income gap between the two regions. Any attempt to reduce migration through substantially overvaluing the northern currency or sharply raising northern wages would only lead to massive unemployment in the North and this would in turn promote migration to the South.

## I. Introduction

Korea had been under a unified government since the 7th century until it was divided in 1945 after 36 years of Japanese rule. Under the Yalta agreements following the Second World War, South Korea was governed by the U.S. military and North Korea by the Soviet army, until separate Korean governments were established in the North and the South in 1948.<sup>2</sup> After the end of the tragic Korean war in 1953, the territorial division was maintained at the cease-fire line, with an uneasy peace prevailing since then. Meanwhile, the two states have developed entirely different and mutually independent economies, with the South prospering under a market system and the North stagnating under a centrally planned economy. Communications, trade, and movement of people between the two regions have been prohibited by both governments. The border between the two regions remains one of the most heavily fortified areas in the world.

Political developments on the Korean peninsula as well as the end of the Cold War and other recent international developments have changed the outlook and risks associated with Korean reunification. These events have increased the likelihood of unification. They have, however, also raised concerns about the nature of such a transition and, particularly in light of the German unification experience, the costs arising from a sudden and unprepared unification.

This paper takes as its hypothetical starting point a rapid and largely uncontrolled process of Korean unification and aims to provide policy guidance for such a contingency. This study focuses on the timing of monetary integration and supporting economic policies, because of their importance for the overall macroeconomic environment and the speed and costs of unification. If we accept the common notion that a country should have a single currency, one option would be to introduce a common currency at the outset of the transition and subsequently achieve economic and political integration. The other option would be to introduce most measures for economic and political integration from the outset of the transition but maintain two separate currency areas (a dual currency system) until a later stage of the transition.

This paper is organized as follows. Section II presents a set of stylized assumptions describing the situation on the Korean peninsula at the outset of the transition period and explores the advantages and disadvantages of the two alternative monetary arrangements during the transition. Section III reviews the experiences of selected countries (Germany, Yemen, states of the former U.S.S.R., and countries in the European Monetary System) that have introduced a currency union or have attempted to create one. Section IV draws some lessons regarding the proper timing of monetary integration in Korea. Section V outlines major policy measures that could be taken to support each monetary regime. Section VI summarizes the conclusions of this paper.

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<sup>2</sup> In this paper, the Republic of Korea is referred to as South Korea and Democratic Peoples Republic of Korea as North Korea for the sake of simplicity.

## **II. Theoretical Considerations on the Timing of Monetary Integration**

The appropriate timing of Korean monetary integration cannot be discussed meaningfully without first taking account of the political and economic conditions in Korea at the beginning of the unification process. The unification of two countries is a complex process involving monetary, economic and political integration. In view of uncertainties surrounding the policy-making processes in North Korea and complex interactions with neighboring countries, Korean unification could be very complicated. It was, therefore, necessary to introduce certain simplifying hypothetical assumptions regarding the initial political and economic conditions.

### **A. Hypothetical Conditions at the Outset of the Unification Process**

The following hypothetical assumptions specify the political and economic framework in which the timing of monetary integration will be discussed. First, it is hypothesized that the relationship between the South and the North has dramatically improved from the present one, and both sides have agreed on a reunification under the principles of democracy and a free market economy. Second, both sides have agreed to enter into a transition period for reunification but have left the timing of, and policy measures for, specific integration, including monetary integration, open for further consideration. Third, the economic situation has not changed substantially on either side from the situation that exists today. Thus, it is hypothesized that the North continues to have serious macroeconomic imbalances and has made little progress on economic reforms, while the economy of the South continues to grow steadily but remains vulnerable to both internal and external shocks.

### **B. Advantages and Disadvantages of Early Monetary Integration**

The immediate introduction of a common currency at the beginning of the transition has several advantages. In addition to providing an important symbol of unity and helping speed up economic and political integration, the immediate introduction of a common currency would reduce transaction costs between the two regions, facilitate interregional trade, and eliminate any speculation over the relative value of the two currencies. It would also help integrate the legal and institutional arrangements of the two regions, and facilitate the flow of much needed investments into the North.

Postponement of monetary integration would have the merit of retaining exchange rate changes as an instrument for mitigating likely problems stemming from a rapid economic integration between a market and a centrally planned economy. These problems include difficulties in absorbing negative shocks in the North, obstacles in carrying out the currency conversion smoothly, and the ensuing risk of damaging price stability in the South.

#### **1. Inadequate Shock-Absorption Mechanism**

The integration of the North with the southern economy is likely to result in a transition process for the North similar to what we have observed in the states of the former

U.S.S.R. since they joined the world economy in the early 1990's and began their transformation to market based economies. Strong negative shocks are likely to occur in the North as a result of the required sharp price realignments, swift demand shifts, and a sudden breakdown of traditional supply links. In these circumstances, an early monetary integration would deprive the North of mechanisms for needed exchange rate adjustments, and even some potentially profitable northern enterprises would have to choose between laying off workers on a large scale or cutting wages sharply and going out of business.

Although responses in labor and capital markets could, in theory, help reduce transitory losses in jobs and production,<sup>3</sup> neither the flexibility of nominal wages nor the mobility of capital and labor would be sufficient to cope with these shocks during an early transition period. Nominal wages, which are sticky downward in market economies, are likely to be even more so in the state dominated economy of the North. Private capital movements would be slow at first as investors usually exercise caution before entering a new market. The labor markets of the two regions would not be fully integrated for a while, as differences in technology and work practices would require the retraining of northern workers before employment in the South. Housing and commuting problems, which are already serious in large cities of the South, would probably also reduce labor mobility between the two regions. In addition, trade between the North and the South, which could lower the need for unilateral adjustments by the North through the transmission of regional shocks to the South, would most likely be too small to play such a role, given the small size of the northern economy compared to the South.

Based on the German experience with unification, large scale financial transfers from the South to the North would probably be the only workable alternative that could cushion some of the adverse effects of the lack of exchange rate flexibility.<sup>4</sup> However, negative shocks in the North arising from sudden economic integration with the South could be too strong to cushion through financial transfers from the South alone.

## 2. Conversion Problem

If a common currency were to be introduced at an early period of the transition, conversion rates would need to be calculated under great uncertainties, due to severe price distortions associated with monetary overhang and price controls in the North. Price distortions seem to have been very severe already back in the 1980's, although comprehensive

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<sup>3</sup>For detailed discussions on these classic shock-absorption mechanisms, see studies on an optimal currency area including Mundell (1961), Flemming (1971), Boughton (1991), Krugman (1992), and Masson and Taylor (1993).

<sup>4</sup>The importance of fiscal transfers within a common currency area in absorbing regional shocks has been recognized by many studies, including Sachs and Sala-i-Martin (1992) on the United States.

price data are not available.<sup>5</sup> With the recent natural disasters and reported failures to adopt state budgets in North Korea, the price distortions are likely to have intensified further. The northern currency reportedly traded in 1996 in informal markets at a rate of more than 100 won to the US dollar while the official exchange rate is about two won to the US dollar.

In the absence of properly functioning foreign exchange markets, one reference rate for conversion might be the purchasing power parity (PPP) exchange rate of the northern currency. However, the PPP exchange rate should not be used as a primary conversion rate. Prices of many nontradable inputs such as transportation and utility are kept artificially low in the North, and this price distortion would make the northern currency much stronger in terms of overall purchasing power than it would be in the purchase of tradable goods alone. Thus, the application of the PPP exchange rate to all prices and wages would damage the competitiveness of northern firms.

A further alternative might be to seek to calculate an exchange rate that is consistent with potential output and sustainable regional external balance in the North. However, estimation of such an equilibrium exchange rate, which is already difficult for market economies,<sup>6</sup> would be even more so for the North due to pervasive price distortions and great uncertainties on the nature and magnitude of regional shocks associated with rapid unification.<sup>7</sup>

Finding proper conversion rates are likely to pose more than technical problems, if political considerations were to dominate the policy debates on conversion rates. Politicians would probably be pressed hard and tempted to use conversion rates as a tool for increasing, or at least preserving, the purchasing power of the northern currency. Workers in the North would very much like to increase their income overnight, probably unaware of its adverse impact on employment, and most workers in the South might support this demand in order to avoid labor competition with low priced northern workers. The political pressure for an overvaluation of the northern currency would be even greater if political unification were to involve new elections across the whole territory of Korea.

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<sup>5</sup>For example, according to Lee (1993), black market prices for selected goods diverged by a factor of five from official prices, and one noncash unit of money was over ten times cheaper than one cash unit in 1984. In comparison, noncash reportedly traded for cash at a rate of some 20 to 1 in Tajikistan in late 1994 due to expansionary credit policies and limited cash supply (IMF 1996 (a)).

<sup>6</sup>See, for example, Clark et al (1994) for the definition of equilibrium exchange rates and the discussion of various estimation methods.

<sup>7</sup>See Halpern and Wyplosz (1996) for reasons for difficulties in estimating equilibrium exchange rates in transition economies.



### 3. Inflation Spillover

Price stability could be preserved in both regions of a unified Korea if monetary policy in the unified Korea were under the sole, effective control of a strong and independent central bank. This would hold whether the two regions use separate currencies or share a common currency. Structural problems in the North inherited from the centrally planned economy could, nevertheless, impede price stabilization and create political pressure for loose credit policy. If this pressure indeed leads to occasional slippages in credit policy, a single currency system would spread inflation to both regions while a dual currency system could confine it to the North.

There would be two structural problems in the North that could impede price stabilization, especially during an early phase of the transition. First, the lack of financial disciplines of state firms would undermine the effectiveness of tight monetary policies through, for example, the issuance of commodity credits to each other. Without accommodative credit expansion by the banking system, inter-enterprise credits would soon become overdue and in turn trigger chain reactions from other firms in the form of arrears in wages, taxes and other obligation, a phenomenon which has been pervasive in most transition economies. Although comprehensive structural reforms would be imperative to impose hard budget constraints on state firms, they would not take hold rapidly, especially (as assumed in this paper) if the unification process starts before much progress in the North on market economic reforms. The financial discipline in the North could be weakened further under a currency union as the burden of an inflation tax would be partially shifted to the South.

Second, the distorted price structure of the North would need to be realigned to make it consistent with world market prices and prices in the South. A symmetric price realignment preserving the overall price level would, however, be slow and perhaps impossible as prices do not fall easily.<sup>8</sup> In these circumstances, the adjustment of relative prices would take place gradually, contributing to increases in the overall price level over an extended period.

### 4. Irreversibility of a Currency Union

Early monetary integration involves certain risks since monetary integration cannot be easily reversed if overwhelming problems were to arise afterward. In contrast, delaying the formation of a currency union could provide both regions with the time for preparing the ground for smooth monetary integration. For example, the two currencies could float freely against each other at the beginning of the transition and then could enter into an exchange rate corridor as stabilization policies are put in place in the North. Alternatively, the northern currency could be pegged to the southern currency early on, but not irreversibly, and a common currency could be introduced after the creation of more favorable macroeconomic conditions.

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<sup>8</sup>This downward price rigidity is common in market economies but appears to be more pronounced in transition economies. See, for example, Coorey, Mecagni, and Offerdal (1996) and Pujol and Griffiths (1996).

### III. Lessons from Other Countries

This section reviews the experiences of countries that have introduced a currency union or have attempted to create one. The review focuses on the following elements: the nature and effects of regional shocks associated with rapid economic integration between market and planned economies; the effectiveness of financial transfers, exchange rate flexibility and other market responses in absorbing regional shocks; and the importance of economic policies during the transition period.<sup>9</sup> Germany's experiences provide important lessons on most of these issues, in particular the nature of regional shocks and the importance of financial transfers, while the ruble zone states' experiences highlight risks involved in monetary integration of a market economy with a centrally planned economy. Yemen's experiences as well as a history of the European Monetary System show the difficulties in achieving smooth monetary integration under radically different circumstances.

#### A. Germany

In Germany monetary integration took place at the outset of the unification process. The unification process started in late 1989 with the sudden collapse of the communist dictatorship in the East and was accelerated by the massive migration from the East to the West. In response, a monetary and economic union between the two regions was created in July 1990, followed by political unification in late 1990, involving all-German elections and the accession of the eastern states to the West. Many German experts believe that the option of maintaining separate currency areas during the transition period was out of the question due to the political need for quick unification, although it might have been a preferable option from a purely economic point of view.<sup>10</sup>

The economic and monetary system of the East was rapidly integrated with the western system. The East adopted the currency, the social security system, and the economic laws of the West, liberalized most prices, dismantled price subsidies, and allowed free trade and factor mobility with the West. Wages and other current payments denominated in the eastern currency were converted at parity to the western currency, while financial assets and liabilities were converted at an average rate of about 2 east mark=1 DM. Although the one-

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<sup>9</sup>Other countries or groups of countries in currency union include Franc-zone countries in Africa (the CFA Franc); eastern Caribbean countries (the East Caribbean dollar); Ethiopia and Eritrea (the Ethiopian birr); Belgium and Luxembourg (the Belgium franc); and Puerto Rico and the Marshall Islands (the U.S. dollar). China after the political reintegration of Hong Kong in 1997 will be a case of a regional monetary arrangement involving the use of separate currencies.

<sup>10</sup>See, for example, Tietmeyer (1990), Siebert (1991) and Sinn (1992).

to-one conversion rate did not diverge much from most estimates of the PPP exchange rate,<sup>11</sup> the rate made the eastern currency stronger than suggested by implicit exchange rates for foreign trade (4.3:1 in 1988) and black market rates (about 7:1 to 11:1 immediately after the breakdown of the Berlin Wall).

The outcomes of the currency conversion were mixed. The currency conversion was accomplished without an inflationary outburst, with the DM in circulation increasing only by about 10 percent in July 1990 compared with a year earlier. Many east German industries, however, lost markets overnight as wages became suddenly unaffordable and as east Germans suddenly in possession of the hard currency sharply shifted their demand to west German and imported goods.<sup>12</sup> As a result, overall production in the East was reduced by no less than one fourth in the 18 months to the end of 1991.

The competitiveness of the East was far more severely damaged by ensuing sharp and persistent wage increases in the East than by the currency conversion. Immediately after monetary integration, eastern wages were on average at about one third of the western level, while labor productivity reached only about 25 percent of the western level. By the end of 1991, wages had increased to about half the western level, and the total labor income of the East exceeded its national income by 2 percent. Eastern wages continued to grow afterwards and reached the western level in 1996 while labor productivity in the East reached two-thirds of the western level in 1996.<sup>13</sup>

The sharp, persistent increases in eastern wages far in excess of productivity gains could not be sustained for long without massive job losses in the East or large financial transfers from the West. Employment in the East fell in mid-1992 to less than two thirds of its pre-unification level, with the decline most pronounced in agriculture and industry. Reflecting the sharp employment cuts, the unemployment rate in the East rose roughly fivefold from 2.9 percent in 1990 to 15.7 percent in 1996. The overall unemployment rate in Germany has recently risen to 10.4 percent (seasonally adjusted), a postwar record. The twin increases in wages and unemployment in the East increased public expenditures far in excess of most initial estimates.<sup>14</sup> As a result, net official transfers to the East averaged about 5 to 6 percent of total German GDP between 1991 and 1995, contributing to persistent budget deficits (Table 1).

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<sup>11</sup>See Sinn (1992) for various valuations of the east German currency based on PPP.

<sup>12</sup>See Akerlof et al (1991), Sinn (1992) and Dornbusch (1994) for details of economic developments after monetary unification.

<sup>13</sup>Unofficial data from Oxford Analytica Daily Brief, February 13, 1996.

<sup>14</sup>See Lipschitz and McDonald (1990) for some initial estimates of German unification costs.

The wage developments in the East were driven by collective wage bargaining and the fear of massive migration to the West.<sup>15</sup> Before privatization had advanced significantly, several rounds of collective bargaining took place between western labor unions and managers of large state enterprises in the East. In the absence of legitimate representatives of eastern workers, these parties agreed to increase eastern wages successively to match the western levels by 1995. The western labor unions tried to justify this much-criticized agreement, by arguing that persistent inequality would encourage migration to the West, with damaging social consequences.<sup>16</sup> This argument appears to have been compelling to many policy makers, although they clearly understood what motivated the western labor unions to press for wage equalization (i.e., avoiding labor market competition).

**Table 1. Germany: Official Transfers to East Germany**  
(in billions of Deutsche mark)

	1991	1992	1993	1994	1995	1996 proj.
Gross transfers	156	194	215	212	199	197
Receipts (Taxes and Fees)	34	40	43	47	51	45
Net transfers: in percent of						
West German GDP	5.0	5.8	6.1	5.6	4.8	...
East German GDP	59.1	58.8	55.8	47.6	39.4	...
Budget balances (in percent of GDP of the unified Germany)	-3.2	-2.8	-3.5	-2.5	-3.5	...

Sources: Federal Ministry of Economics, *Wirtschaftsdaten Neue Länder*, April 1996 (recited from IMF 1996 (c)); and IMF country reports.

The overall impact of the increases in east German wages on migration is not clear. First, the number of migrants to the West, which had risen to about 2 percent of the east German population in the 12 months before the monetary integration of mid-1990, was sharply reduced to less than 1 percent of the population in 1991. This sharp reduction in migration took place despite large wage differentials, as high as a factor of two at that time. One interpretation of this phenomenon was that, when it became clear that the migration option would be permanently available, wage factors for migration were outweighed by non-wage factors including home ownership, differences in the cost of living (particularly housing),

<sup>15</sup>See Siebert (1991), Sinn (1995), and Flassbeck (1996).

<sup>16</sup>Other arguments were: (i) equity and solidarity would require rapid attainment of parity; (ii) it was the collapse of Eastern European markets, not high wages, that had caused a decline in labor demand; and (iii) given the widespread expectation of massive job losses through enterprise restructuring in the East, workers would anyway push for higher wages to ensure larger unemployment benefits. See FitzRoy and Funke (1995) for more details.

family ties, and the attachment to certain regions (Mayer 1990). Second, the sharp increases in east German wages might have increased rather than decreased migration, by increasing unemployment in the East. According to one survey, most east Germans who considered migration a serious option answered that wage differentials would not induce them to move but lack of work for a sufficiently long period would do so (Akerlof et al 1991).<sup>17</sup> A similar answer was registered in another survey (Dornbusch and Wolf 1994).

Sound monetary policy and large fiscal transfers were critical in minimizing the impact of adverse unification shocks in the East. Price stability was achieved through tight monetary policy; CPI inflation in the unified Germany was limited to 2.7 percent in 1990 and 4.6 percent in 1991, although CPI inflation in the East was 3 to 4 times higher than the national average. Also, massive public transfers from the West helped create jobs in the East and limit output declines. A decline in overall production bottomed out in the early months of 1992 due to a rapid growth in construction and retail trade more than offsetting a continued fall in manufacturing output. Between 1992 and 1995, GDP in the East grew at an annual rate of 5-10 percent due mainly to growing transfers from west Germany and a construction boom, but the growth rate is estimated to have fallen to about 3 percent in 1996 in reflection of the end of rapid reconstruction.

The key lessons from German monetary integration can be summarized as follows: (i) Monetary integration accelerated economic and political integration. (ii) The conversion rates undermined the competitiveness of many eastern export firms overnight, contributing to the sharp initial fall in output and employment. (iii) However, the competitiveness of eastern firms was far more damaged by ensuing sharp and persistent wage increases in the East aiming for parity with west German wages, and given these pressures the initial conversion rates probably mattered in the end little. (iv) Large and persistent wage increases in the East led to much larger than anticipated unemployment and fiscal transfers. (v) The impact of these wage increases in the East on migration is not clear as they caused large unemployment in the East and pushed the unemployed to the West. (vi) Large fiscal transfers were critical in reducing the impact of adverse unification shocks in the East. (vii) Sound monetary policy was crucial to maintaining price stability.

## B. Yemen

The Yemen Arab Republic (North Yemen) and the People's Democratic Republic of Yemen (South Yemen) were unified politically in May 1990, with a currency union created at the outset of unification. North Yemen was four times larger in population and one and half times greater in per capita income than South Yemen, and it assumed a dominant role in the

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<sup>17</sup> Two other major findings of the survey were: (i) the great majority of people were reluctant to migrate and did not anticipate doing so; and (ii) the minority of people who considered migration very likely was large enough to create further migration comparable to what had occurred since September 1989.

process of unification. Before unification, macroeconomic imbalances had been severe in both countries, although the North, essentially a market economy, had less severe imbalances than the centrally-planned economy of the South. At the time of monetary integration, the southern currency was replaced by the northern currency, the Yemen rial (YRI), at a stronger than prevailing market rate.

Unification was followed by a sharp increase in macroeconomic instability. The budget deficit increased from 13 percent of GDP in 1988 to 17-22 percent of GDP over the period 1992-94, mainly due to wage equalization at the higher level of the North. The deficits were financed almost entirely by the banking system, leading to a sharp nominal depreciation of the currency from YRI 17.5 per U.S. dollar to about YRI 100 between end-1990 and end-1994. Annual CPI inflation almost doubled to 62 percent in 1993 and increased further in 1994. Unlike in east Germany, employment and output in South Yemen appear to have been affected little by unification due to its heavy reliance on subsistence farming. Real GDP of the unified Yemen declined, primarily due to a severe drought, by about 3 percent per year in 1990 and 1991, but it rebounded (6 percent per year) in the subsequent three years.

Amid continuing macroeconomic instability, political strains intensified between the two regions and civil war broke out on May 4, 1994. The domestic armed conflict was followed by the secession of the southern government in May, and the central government of the unified Yemen regained control over the southern region in July 1994.

The Yemen experiences show that monetary integration that is not supported by sound economic policies and strong macroeconomic positions could damage macroeconomic stability. Obviously, the macroeconomic instability would make it more difficult for a unified government to mobilize political support for maintaining unification if divisive political issues surface after unification.

### C. European Monetary System

A history, albeit a cursory one, of the European Monetary System (EMS) shows the complexities and difficulties in achieving monetary integration. The EMS started in 1979 with 12 member countries, with the ultimate objective of creating a European Monetary Union (EMU) in 1999. From the inception of the EMS through 1986, some members maintained persistently higher inflation rates than others. The resulting inflation differentials required occasional exchange rate realignments as well as the adoption of a wide exchange rate band for the country with the highest inflation rate (Italy). After a total of eleven exchange rate alignments through 1987, no further alignments were made. Most EMS members had removed their capital controls by early 1990.

Amid the remarkable success of the EMS since 1988, the Maastricht Treaty laid down in December 1991 four convergence criteria for countries wishing to participate in the EMU. These included criteria on price and exchange rate stability, long-term interest rates, and fiscal

positions.<sup>18</sup> Exchange rates among the member countries, however, became increasingly unstable after 1991 due to diverging economic fundamentals, and eventually the EMS suffered a major blow in the summer of 1992 when the U.K. and Italy left the Exchange Rate Mechanism of the EMS. Recent performance indicators of European Union states show that few satisfied all convergence criteria in 1995 and several states might miss some of them in 1997, the year to which the performance indicators will be applied.<sup>19</sup>

The EMS experiences show that it could take considerable time and effort to create a currency union if prospective members with insufficiently similar underlying macroeconomic conditions (including inflation, budget deficits, and long-term interest rates) maintain macroeconomic policy autonomy during the transition period.

#### D. The Baltics, Russia, and Other States of the Former Soviet Union

Although the U.S.S.R. was dissolved in December 1991, the dissolution of the ruble zone did not follow immediately. While some states--including the three Baltic states and Ukraine--introduced national currencies early on, most states attempted to remain in the ruble zone on account of their close mutual economic ties (Table 2). After prolonged discussions, seven member states of the former Soviet Union signed a protocol in March 1992, which established an inter-bank coordination council as a first step toward the coordination of monetary policy.<sup>20</sup>

The use of a common currency without supporting policy and institutional arrangements, however, could not be sustained for long. As the Central Bank of Russia could not effectively control or coordinate credit policy in other ruble zone states, a free-rider problem associated with securing seignorage gains became increasingly acute. Amid a growing concern over likely inflation spillover to Russia, Russia demonetized pre-1993 rubles

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<sup>18</sup>First, their average rate of CPI inflation during the 12 months preceding the initiation of monetary union can be no more than 1.5 percentage points higher than the inflation rates of the three EC member states with the lowest inflation. Second, countries would need to maintain stable exchange rates (within their normal EMS fluctuation bands) for the two years preceding entry. Third, long-term interest rates during the year preceding entry must be no more than 2 percentage points higher than those of the three member-states that best controlled inflation. Finally, the budget deficit could be no more than 3 percent of GDP, and the gross public debt should be at or below 60 percent of GDP or, if not, the debt to GDP ratio should be sufficiently diminishing and approaching the 60 percent reference value at a satisfactory pace.

<sup>19</sup>See, for example, IMF 1996 (b).

<sup>20</sup>They were Armenia, Belarus, Kazakstan, the Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.

in its territory and introduced new Russian rubles (1993 banknotes) in July 1993. Subsequently, Russia announced that it would extend new Russian rubles to other ruble zone states only on nonconcessional credit terms. In response, all remaining states, except Tajikistan, introduced their own national currencies in late 1993. Tajikistan, which continued to use pre-1993 rubles, suffered a monthly inflation of over 100 percent in December 1993, when pre-1993 rubles no longer valid in neighboring countries swamped its territory. Afterwards, it used new Russian rubles borrowed from Russia, but a failure to tighten domestic credit led to an acute cash shortage and a sharp depreciation of noncash against cash. Tajikistan finally introduced its national currency in May 1995.

**Table 2. States of the Former U.S.S.R.: Disintegration of the Ruble Zone**

Country, Currency Name	1992		1993		1994		1995
	1H	2H	1H	2H	1H	2H	1H
Latvia, Latvian ruble	A	B,C					
Lithuania, Talonas (coupon)	A	B,C					
Belarus, Belarussian ruble	A			B	C		
Estonia, Kroon	A,B,C						
Moldova, Moldovan coupon	A	B,C					
Azerbaijan, Manat		A		B	C		
Ukraine, Karbovanets		A,B,C					
Georgia, Georgian coupon			A	B,C			
Kyrgyz Republic, Som			A,B,C				
Russia, 1993 Russian ruble				A,B,C			
Armenia, Dram				A,B	C		
Kazakstan, Tenge				A,B,C			
Turkmenistan, Manat				A,B,C			
Uzbekistan, Sum (coupon)				A,B,C			
Tajikistan, Tajik ruble					B		A,C

Sources: Various IMF Economic Reviews

A: Dates of the introduction of national currencies including temporary currencies.

B: Dates of the withdrawal of pre-1993 rubles.

C: Dates for a national currency to have become a sole legal tender.

The introduction of national currencies in the former ruble zone countries greatly facilitated real wage adjustments through movements in nominal exchange rates. Between 1990 and 1996, wage differentials among those countries substantially increased compared with the ruble zone period. The coefficient of variation in relative wages across the 15 former



ruble zone states increased substantially during the relatively short period, compared with the preceding 10 years under the ruble zone (Table 3, Chart 1). This wage divergence among the former ruble zone countries reflected mostly the combination of productivity differentials and varying degrees of exchange rate overshooting.

**Table 3. States of the Former U.S.S.R.: Relative Wages (Russia = 100), 1980-96**

	1980 1/	1985 1/	1990 1/	1993 2/	1994 2/	1995 2/	1996 2/
Armenia	92	90	81	9	7	14	12
Azerbaijan	84	81	66	27	10	12	12
Belarus	85	86	89	34	24	61	57
Estonia	106	107	115	130	131	193	157 3/
Georgia	82	83	72	...	...	8	11
Kazakstan	94	93	89	...	47	75	65
Kyrgyz Republic	83	81	74	28	22	34	25
Latvia	97	97	98	119	140	175	129
Lithuania	94	94	96	67	93	122	111
Moldova	78	78	79	30	26	29	25 3/
Russia	100	100	100	100	100	100	100
Tajikistan	82	78	70	23	17	8	6 3/
Turkmenistan	99	95	82	113	10	16	9
Ukraine	87	86	84	23	28	47	48
Uzbekistan	88	82	73	36	12	28	33
<b>Coefficient of Variation</b>	<b>8</b>	<b>8</b>	<b>13</b>	<b>41</b>	<b>46</b>	<b>58</b>	<b>47</b>

Sources: Goskomstat U.S.S.R.; and IMF.

1/ Based on monthly Soviet ruble wages.

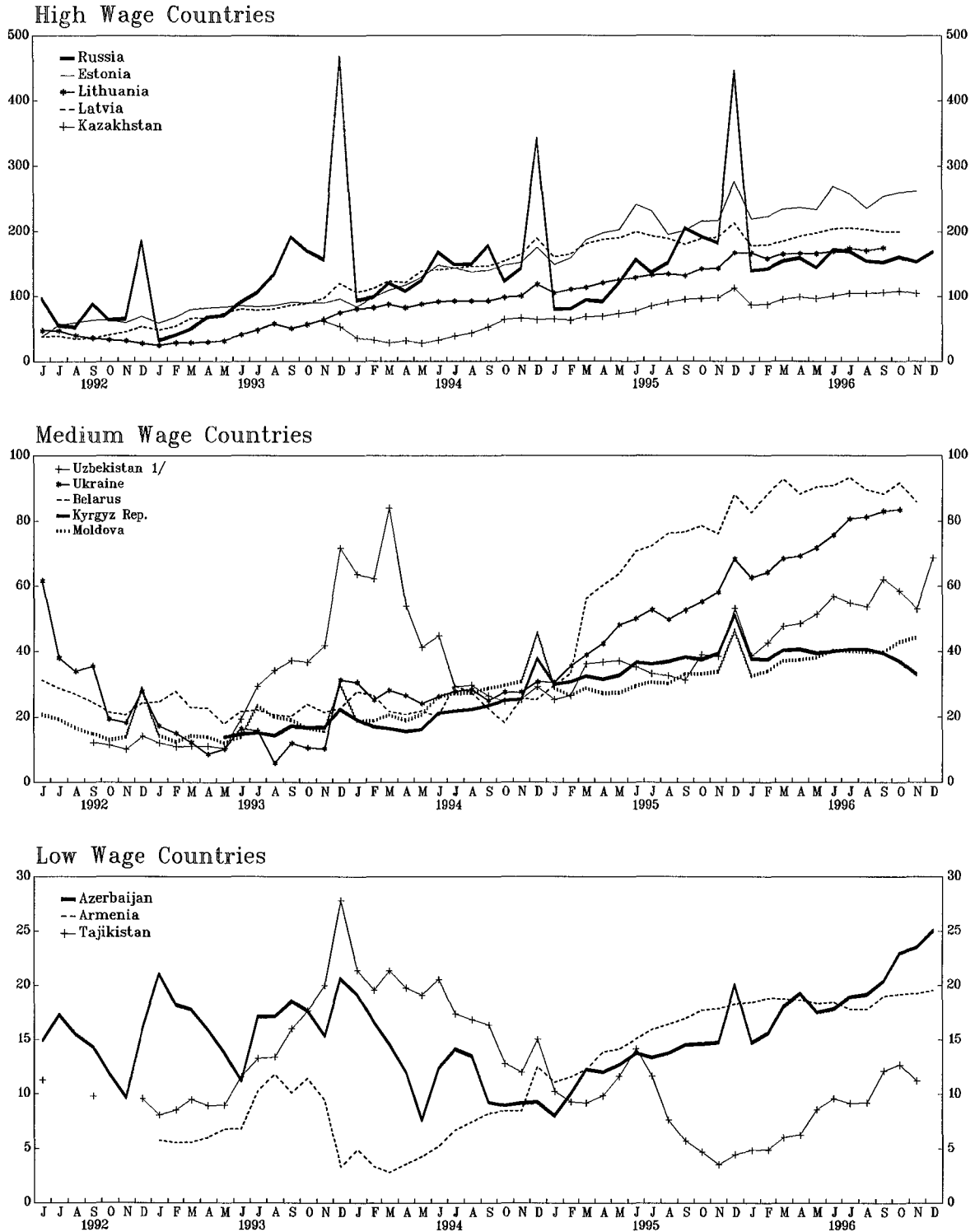
2/ Based on monthly dollar wages.

3/ Based on the latest available data.

These wage movements imply that ruble zone countries could have maintained a stable common currency only with huge fiscal transfers among them or a high degree of nominal wage flexibility combined with tight, coordinated credit policies. None of these conditions, however, could have been met. Russia, undergoing its own painful transformation, could not afford open-ended financial transfers to other countries. Also, when contractual wages were too high, they were left in arrears rather than being reduced, thereby increasing political pressures for loose credit policies. Central bank independence was rare and most central banks continued to finance state enterprises in accordance with government directions. Budget deficits grew rapidly, as revenues from the state sector declined sharply while the taxation of the private sector improved only gradually. With few nonbank financing

Chart 1

### States of the Former U.S.S.R.: Monthly Average Wages (In U.S. dollars, period average)



Source: National authorities.

1/ Dollar wages are based on official exchange rate.

mechanisms in place, the deficits were covered primarily by central bank financing. As a result, in 1993 for example, broad money increased on average about fivefold, and consumer prices surged about tenfold in these countries.

Loose credit policies, large budget deficits, and monetary financing of most budget deficits were also quite common in other transition economies. Table 4 shows the magnitude of macroeconomic disturbances in 26 transition economies. On average, inflation surged to about 3,300 percent per annum before the start of successful stabilization programs. Broad money grew on average by about 500 percent, and fiscal deficits reached about 10 percent of GDP in 1993. In contrast, successful stabilization in these countries led to rapid real appreciation, boosting the external purchasing value of their incomes. For example, between 1994 and 1995 when inflation fell in most transition economies, dollar GDP based on market exchange rates increased on average by 48 percent in CIS countries and 36 percent in economies in transition (EBRD 1996).

Although these experiences followed the breakup of a nation rather than its unification, they exemplify the risks involved in monetary integration between market and centrally planned economies. Institutional arrangements and soft budget constraints in centrally planned economies would impede price stabilization, at least during an initial period of the transition. Moreover, contractual wages in centrally planned economies are not likely to be flexible downward, raising an issue of wage adjustments in a currency union in which wages in a centrally planned economy lose competitiveness during and after monetary integration.

#### **IV. The Timing of Monetary Integration in Korea**

If a rapid unification process were to start in Korea in the near future and to proceed in a largely uncontrolled way, immediate monetary integration may appear to be the only practical choice available to Korea. As shown in the previous section, west Germany faced a similar challenge of the sudden unification with a centrally planned economy and introduced a common currency early on. A unified Germany was subsequently exposed to various shocks, including initial shocks from the currency conversion and ensuing macroeconomic disturbances from rapidly progressing wage equalization far in excess of any productivity gains in the East. Germany, however, successfully maintained macroeconomic stabilities through sound economic policies and large financial transfers. Thus, it might be argued that South and North Korea should form a currency union from the outset of the transition period and seek to deal with problems arising after sudden monetary integration through proper economic policies and large resource transfers. This argument could be compelling in Korea where much of the public regards unification as a national objective, beyond economic considerations.

**Table 4. Economies in Transition: Key Macroeconomic Indicators, 1989-94 1/**

Output decline: <u>2/</u>	less than 10%	10% to less than 20%	20% to less than 30%	30% to less than 50%	over 50%	Total
No. of countries	0	4	5	7	10	26
Inflation: <u>3/</u> Maximum monthly rate	less than 5%	5% to less than 10%	10% to less than 100%	100% to less than 400%	over 400%	Total
No. of countries	0	1	14	9	2	26
Inflation: Pre-stabilization annual rate <u>4/</u>	less than 50%	50% to less than 100%	100% to less than 1000%	1000% to less than 2000%	over 2000%	Total
No. of countries	3	1	11	8	3	26
M2: annual percentage increase in 1993	less than 10%	10% to less than 100%	100% to less than 400%	400% to less than 1000%	over 1000%	Total
No. of countries	0	8	6	6	5	25
Fiscal deficits in 1993: <u>5/</u>	Surplus	0% to less than 3%	3% to less than 10%	10% to less than 20%	over 20%	Total
No. of countries	4	4	7	8	3	26

Sources: Fischer, Sahay and Vegh (1996) and the International Monetary Fund.

1/ Includes 15 states of the former U.S.S.R., Albania, Bulgaria, Croatia, Czech Republic, Hungary, Macedonia, Mongolia, Poland, Romania, Slovak Republic, and Slovenia.

2/ Output declines from 1989 to the year of the lowest output or 1994.

3/ From 1989 through mid-1995 except for several countries of which monthly inflation data were available only from 1990 or 1991.

4/ Inflation in 12 months before a month starting the stabilization program. For Turkmenistan, the figure is for 1994.

5/ Fiscal balance of the consolidated general government in percent of GDP.

However, the financial burden of German-style unification would probably be unaffordably large for South Koreans and certainly heavier at least in relative terms than it was to west Germans.<sup>21</sup> First, the income and demographic differences between the South and the North would drive up the unification costs relative to GDP far more than those in Germany. Due to a small population gap and a large per-capita income difference between the South and the North, each South Korean would have to support twice as many persons in the other region than each west German did, and spend much more of his income if there is a need for a rapid reduction in the income gap (Table 5). Chart 2 shows a simplified relationship between annual expenditures for income support and gaps in the income and population, for Korea in comparison with Germany and Yemen.<sup>22</sup> Annual financial transfers of 5 percent of west German GDP to the East, for example, would boost the eastern per-capita income by about 50 percent, to about half the western level.<sup>23</sup> In contrast, the same percentage point transfers of South Korean GDP would double the North's income, but only to one fifth of the South's income--a level most likely inadequate to appease many North Koreans who would call for equality. A rapid increase in the North's income to half the South's level would, however, require about 20 percent of South Korean GDP per year, an amount that is too large for the southern government to generate the necessary political support in the South for correspondingly raising taxes or cutting back on other expenditures. A formal estimation by Horn (1996) based on wages, productivity and various hypothetical conversion rates arrives at a similar conclusion.

Second, each dollar spent on Korean unification would be more costly than in Germany, as the macroeconomic situation of South Korea would not be as favorable as it was in west Germany at the time of unification. International perception of a country risk is much higher for Korea than it was for Germany. Given the widespread concern over Korean unification costs, it could deteriorate even further in the wake of a sudden unification, making

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<sup>21</sup>Costs of Korean unification usually refer to short-term costs to the South arising from unification. More accurately, they should be the short-term net income losses of a unified Korea due to unification. This paper uses these two definitions interchangeably since the unification expenses of the South are not likely to be offset by gains in the North in the short term.

<sup>22</sup>The relationship for Korea can be expressed as  $C = P_{N/S} * (X - I_{N/S}) / (1 + P_{N/S} * X)$ , where C is the total compensations in percent of South Korean GDP;  $P_{N/S}$  is North Korean population relative to the South; X is the per capita income of the North relative to the South after income compensation; and  $I_{N/S}$  is the current per capita income of the North relative to the South.

<sup>23</sup>The actual outcomes in Germany (i.e., per capita income of the East reaching roughly half the western level soon after unification with annual transfers of about 5 percent of western GDP) were similar to this rough projection although some public expenditures were not directly used for income support.

the borrowing by the South in international financial markets more expensive. The external financing of unification costs might be limited and unsustainable, given the persistent and widening current account deficits of the South, which reached about 5 percent of GDP in 1996. In contrast, west Germany had registered sizable current account surpluses (3-5 percent of GDP) for several years before unification.

**Table 5. Korea, Germany and Yemen: Selected Economic Indicators**

	Population (millions)	Per capita income <u>1/</u>	Area (‘000 sq km)	Trade ratio <u>2/</u>	Budget balance <u>3/</u>	Public expenditure <u>3/</u>
South Korea 94	44.5	10076 <u>4/</u>	99	52.5	0.5	19.8
North Korea 94	23.0	923	122	9.9	...	89.2
<b><u>Ratio</u></b>	<b><u>1.9</u></b>	<b><u>10.9</u></b>	<b><u>0.8</u></b>	<b><u>5.3</u></b>	<b><u>...</u></b>	<b><u>0.2</u></b>
West Germany 89	61.4	38500 <u>5/</u>	249	50.0	0.1	46.5 <u>6/</u>
East Germany 89	16.7	12700 <u>5/</u>	108	80.9	-5.5 <u>6/</u>	78.7 <u>6/</u>
<b><u>Ratio</u></b>	<b><u>3.7</u></b>	<b><u>3.0</u></b> <u>5/</u>	<b><u>2.3</u></b>	<b><u>0.6</u></b>	<b><u>...</u></b>	<b><u>0.6</u></b>
North Yemen 89	9.5	650	195	71.2	-13.0 <u>6/</u>	37.0 <u>6/</u>
South Yemen 89	2.3	420	333	...	...	...
<b><u>Ratio</u></b>	<b><u>4.1</u></b>	<b><u>1.6</u></b>	<b><u>0.6</u></b>	<b><u>...</u></b>	<b><u>...</u></b>	<b><u>...</u></b>

Sources: IMF country reports; Korean Overseas Information Service; Sinn (1992) and Genser (1990).

1/ In US dollars for Korea and Yemen. In DM for Germany.

2/ Export and import in percent of GDP.

3/ In percent of GDP.

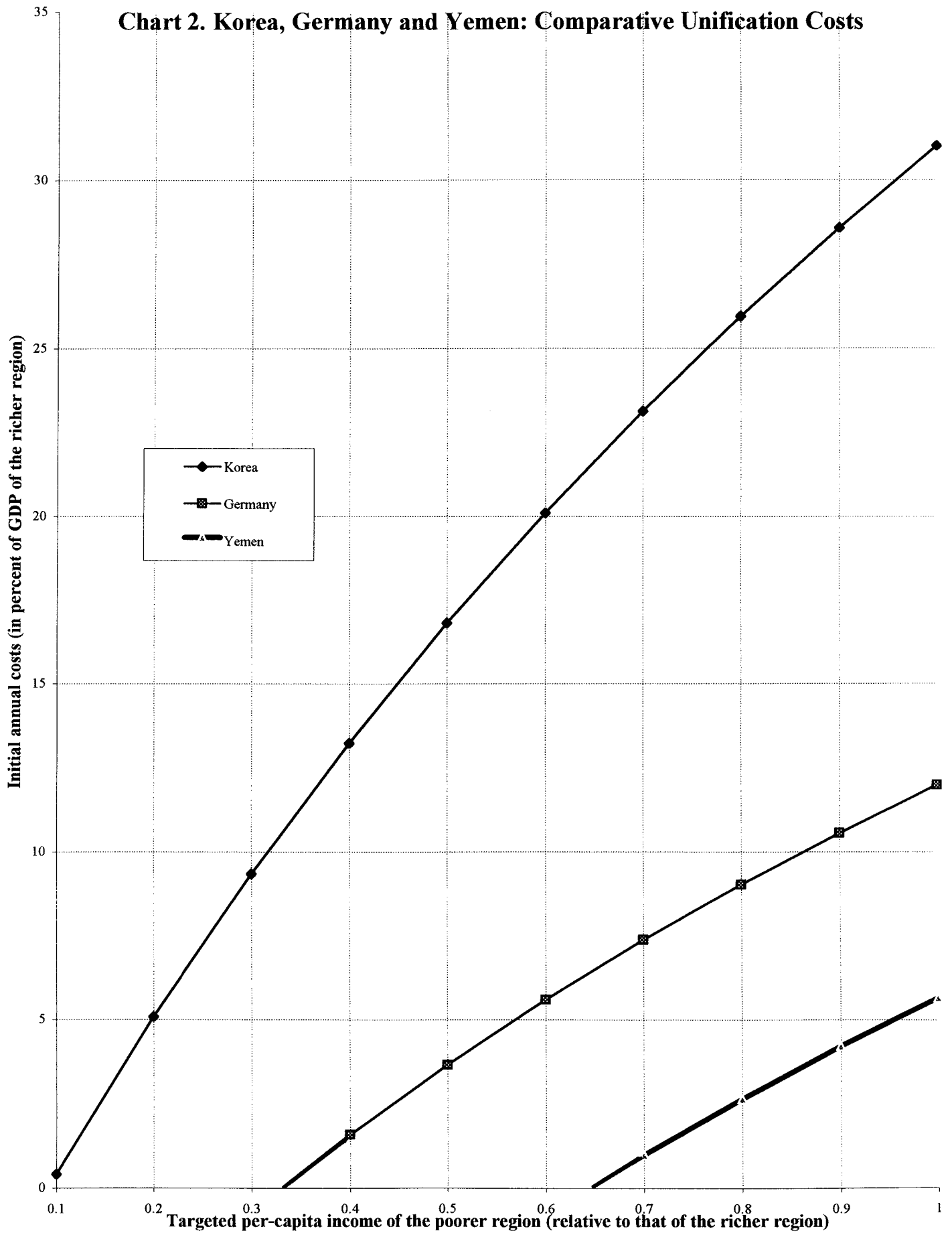
4/ For 1995.

5/ Based on average gross earnings of a household and a parity exchange rate between the east and west German currencies. A conventional estimate of east German GDP relative to the West used in, for example, Tietmeyer (1990) was some 10 percent, implying the west-east per-capita income ratio of 2.7.

6/ For 1988.

The potentially huge unification costs suggest that Koreans should be far keener to reduce unification costs than Germans were, and seek to find the best mix of economic policies and a unification sequence to minimize unification costs. The use of separate currencies during the transition, supported by proper economic policies, would have the merit of limiting the initial costs of unification, although the extent of the eventual cost reduction would depend critically on the success of ensuing economic reforms in the North and the political environment, including the political strength of labor unions and the capacity of the political leadership to resist the political pressure for wage equalization between the North and the South.

**Chart 2. Korea, Germany and Yemen: Comparative Unification Costs**



First, the experiences of many transition economies indicate that the degree of negative real shocks during the transition would be very strong initially but moderate in the North as economic reforms take hold in the region. It implies that, through the transitory use of a separate currency and supporting economic policies, the northern region could reduce, rather than merely defer, the output losses that would have otherwise occurred due to the fixity of exchange rates.

Second, South Korea would be able to mobilize domestic and international resources for unification relatively easily and less costly by announcing and adopting the dual currency system at the outset of the unification process rather than by signaling and forming a monetary union with the North during an early period of the transition. The cost advantage would come from the high likelihood and the perception that the macroeconomic stability of the South would be better protected under the dual currency system. With the use of a separate currency in the North, unsustainably large wage increases and accommodative credit expansion in the North for example, which could occur occasionally for reasons noted before, would lead to a depreciation of the northern currency rather than to inflation in the South. This advantage of the dual currency system would largely hold even if political pressures for wage equalization were to undermine the flexibility of the exchange rates of the northern currency occasionally.

Third, stable market exchange rates for the northern currency would emerge in the foreign exchange market along with price stabilization and structural reforms in the North. In view of the experiences of transition economies, market exchange rates are most likely to form and remain for a considerable period of time at ranges preserving the competitiveness of northern firms, provided that foreign exchange regulations are reasonably liberal.<sup>24</sup> The emergence and persistence of such market rates could ease transitional difficulties in adjusting wages and pave the way for a smooth introduction of a common currency.

A likely concern over massive migration as a result of the dual currency system is probably unfounded. If current incomes indeed affect migration decisions more strongly than other factors including unemployment, incentives for migration to the South could be reduced only by resource transfers either in the form of indirect seignorage transfers or, preferably, explicit public transfers, not by the introduction of a common currency. Migration appears to have been a major concern that has driven sudden monetary integration in Germany. However, primary factors that have reduced migration in Germany were massive public transfers from the West to the East and the perceived freedom of migration, not the use of a common currency.

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<sup>24</sup>See Halpern and Wyplosz (1996) for stylized facts on real exchange movements in transition economies.



## V. Supporting Policies

No matter which monetary regime is adopted between the South and the North during the transition period, the macroeconomic performance of a unified Korea will in the end depend more on economic policies than on the monetary regime. The dual currency system would be a disaster if a stabilization policy were not properly implemented in the North, while likely problems from a sudden monetary integration could be mitigated by appropriate economic and financial policies. This section outlines major policy measures that could be taken during the transition period to support each monetary regime between the two regions.<sup>25</sup>

### A. Policies in the Northern Region Under a Dual Currency System

If the North and the South were to agree to a transition period, during which separate currency areas would be maintained, sweeping economic reforms would need to be undertaken in the North with large financial and technical assistance from the South to prepare for smooth monetary integration at a later stage. One urgent reform measure would be the removal of most price controls. This price liberalization might need to take place in conjunction with a currency reform that eliminates monetary overhang, so as to achieve internal convertibility of the northern currency.

Without free trade, price distortions might persist to a large degree and obstruct the needed reallocation of resources, given the apparently monopolistic economic structure of the North. It would, therefore, be crucial to break up the state trade monopoly. Equally important would be the full external convertibility of the northern currency and the availability of trade infrastructures including commodity exchanges, warehouses, and transportation facilities to current and prospective traders.

The northern monetary authorities would need to take immediate steps to implement a tight credit policy. Otherwise, price liberalization would be followed by persistently high inflation, which would further erode the already low public confidence in the northern currency. For the effective enforcement of tight credit policy, the northern monetary authorities might need to rely initially on direct monetary instruments such as bank-by-bank credit ceilings. Direct incomes policy might also be needed to stem a wage-price spiral. Indirect incomes policy, such as taxes on excessive wage increases, was largely ineffective in many transition economies, as workers in state enterprises found loopholes easily in collaboration with managers. The southern monetary authorities would need to provide their northern counterparts with immediate financial and technical support for price stabilization, so

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<sup>25</sup>This section does not cover several equally important policy areas such as financial sector reform, fiscal reform, and privatization since policies in these areas are not significantly affected by the choice of monetary arrangements between the two regions.

as to limit inflation in the North and thereby gain the necessary political support for the dual currency system.

Price stabilization would not succeed without tight fiscal policies. Bank financing of budget deficits should be limited to a minimum, and the remainder of the deficits would need to be covered mainly by large scale financial supports from the southern government. The tax system and tax administration of the North would have to be improved urgently, with the technical assistance from the South, in order to minimize declines in revenue during the transition period. In particular, extrabudgetary operations, especially foreign exchange operations, would need to be fully integrated into the regular budget. Certain budgetary items such as defense and foreign affairs expenses could be integrated in a unified Korean budget in order to consolidate unification.

Migration policy would need to take account of a large income gap--as much as tenfold--between the two regions. Although migration from the North to the South would, in principle, benefit both regions by reducing redundancies in the North and easing labor shortages in the South, massive influxes of northerners to the South might be too much for the South to handle in the short term. Imposing control over the border could be one way to prevent excessive migration if it were politically acceptable and administratively feasible. Various incentives could also help reduce migration. The social safety net of the North, for example, could be reformed in a way to discourage migration into the South.<sup>26</sup> Privatization of state assets including enterprises, housing, and land could be designed in a way to provide additional incentives to stay in the North. An early success in stabilization could also contribute to reducing migration by decreasing uncertainties and increasing expected future incomes.

Relatively smooth monetary integration could be achieved after price stabilization and the accomplishment of basic structural reforms, including price and trade liberalization, in the North. Experiences of the Baltics, Russia and other states of the former Soviet Union provide a useful benchmark for the time that is likely to be taken to satisfy these conditions, although the exact time would depend on many factors including the size and effectiveness of assistance from the South as well as economic conditions in the North at the time of unification. Most states of the former Soviet Union started economic reforms in early 1992 under more difficult environments, including wars and the sudden breakdown of external trade, than other transition economies. Nevertheless, between 1993 and 1996, annual CPI inflation was reduced from over 1000 percent to less than 40 percent in most of these countries, and other macroeconomic indicators including budget deficits, monetary expansion, and real GDP also improved dramatically (Table 6).

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<sup>26</sup>See Park and Lee (1994) and Park (1996) for various proposals to limit excessive labor migration from the North to the South.

For eventual monetary integration, two alternative approaches could be considered. The first approach involves moving gradually to a currency union, through a floating exchange rate system followed by a managed float system. The other approach fixes exchange rates at an early stage, and moving to a currency union may necessitate occasional realignments of exchange rates.<sup>27</sup> The latter approach could be adopted if sufficient external financing were to be secured and, more importantly, the authorities in charge of monetary policy in the North were to have a credible commitment to stabilize prices and an institutional capacity to implement the necessary policies.

**Table 6. States of the Former U.S.S.R.: Selected Macroeconomic Indicators, 1993, 96 1/**

	CPI inflation <u>2/</u>		Fiscal balance of general gov't <u>3/</u>		Broad money <u>2/</u>		Real GDP <u>2/</u>	
	1993	1996	1993	1996	1993	1996	1993	1996
Armenia	3732	19	-54.3	-9.4	1444	41	-14.8	6.5
Azerbaijan	1130	20	...	-2.6	689	26	-23.1	1.3
Belarus	1188	51	-4.5	-2.0	573	77	-10.7	-3.0
Estonia	89	23	-0.7	-1.5	95	37	-5.5	3.1
Georgia	3126	39	-26.1	-4.4	1225	38	-25.4	10.5
Kazakstan	1662	39	-1.2	-2.8	725	15	-12.0	1.0
Kyrgyz Republic	1209	30	-14.4	-6.3	166	23	-15.5	5.5
Latvia	109	19	0.3	-1.2	109	...	-16.1	2.5
Lithuania	410	25	-4.6	-3.6	177	-1	-18.4	3.5
Moldova	788	24	-7.4	-6.3	320	21	-1.2	-8.0
Russia	896	25	-9.1	-5.6	436	34	-12.0	-1.3
Tajikistan	2195	420	-23.4	-7.3	1587	143	-11.0	-7.0
Turkmenistan	...	1011	1.1	0.3	872	316	-10.2	-4.0
Ukraine	4735	81	-6.2	-3.1	1557	43	-14.2	-8.0
Uzbekistan	534	64	-17.5	-7.6	987	99	-2.3	1.6
<b>Average</b>	<b>1454</b>	<b>125</b>	<b>-11.2</b>	<b>-4.2</b>	<b>731</b>	<b>65</b>	<b>-12.8</b>	<b>0.3</b>
<b>Median</b>	<b>1130</b>	<b>30</b>	<b>-6.2</b>	<b>-3.6</b>	<b>686</b>	<b>38</b>	<b>-12.0</b>	<b>1.3</b>

Sources: Authorities and IMF estimates

1/ 1996 figures are mostly IMF estimates.

2/ Percentage change over a year ago.

3/ In percent of GDP.

## B. Policies in a Unified Korea Under a Single Currency System

If the unification process were to evolve in such a way that the immediate introduction of a common currency were unavoidable, the North and the South would need to go ahead

<sup>27</sup>Zettelmeyer and Citrin (1995) discusses issues regarding the choice of exchange rate regimes in achieving price stability in the states of the former U.S.S.R.

with monetary integration and pave the way for political and economic integration while minimizing likely problems from the abrupt monetary integration. First of all, price and domestic trade liberalization would need to take place in the North before or in conjunction with monetary integration. Otherwise, the two economies would continue to be segmented and arbitrage gains would promote smuggling and create black markets, with most benefits of monetary integration not materialized.

The initial success of monetary integration would depend substantially on whether the conversion rates are set in line with the competitiveness of the North. The PPP exchange rate should not be adopted as a primary conversion rate since the rate, based on nontradable and tradable goods, is most likely to damage the competitiveness of the North due to severe price distortions as noted in Section 2. Instead, the rates would need to be set between informal market rates and the PPP exchange rate, but at rates closer to the former. Such a decision, however, would be unpopular in the North and probably in the South as well, for reasons noted in Section II.

Income support for North Koreans during and after monetary integration would be very important to cushion various integration shocks and to mobilize and maintain political support for unification, but currency conversion should not be used for income support. Selective and direct public transfers channeled through the northern budget would be much more transparent and effective than the granting of once-and-for-all capital gains to North Koreans through an overvaluation of the northern currency. The latter scheme would spread the one-time benefits to the whole public largely in proportion to their pre-conversion wages (and deposits as well if the deposit conversion rates were to be also overvalued), rather than concentrate them on the poor. Besides, the net benefits of the overvaluation would be negative for those who eventually lose jobs as a result of the currency overvaluation.

During currency conversion, emergency financing might be needed to address a temporary cash flow problem in the economy. In a centrally planned economy, each monetary unit tends to have a variety of purchasing powers depending on the holder of the monetary asset, the type of transactions, and the asset portfolio (mainly cash and deposits). For example, enterprises producing goods deemed important by the central planner could buy foreign exchange at far more favorable terms than others, and cash was usually more valuable than noncash, except for budgetary organizations and other privileged entities that had easy access to cash. In contrast, the currency conversion could differentiate conversion rates only to a limited extent, due to administrative difficulties in setting and applying a myriad of differential conversion rates. Thus, conversion might end up cutting deposits held by some entities (such as importers and budgetary organizations) relatively more severely than those held by others, causing a temporary cash flow problem for the former.

The macroeconomic policies and institutional arrangements of the North would need to be unified with those of the South in conjunction with monetary integration. Specifically, the banking system of the North would need to be replaced by the modern banking system of the South, and the banking regulations and the accounting and settlement systems would have to

be integrated with those of the South. The northern budget, the tax system and the tax administration would also have to be integrated with those of the South, except for small local budgets. The alternative--policy coordination between two autonomous authorities--should be abandoned since it would be difficult to implement in a short period of time as shown in the experiences of states of the former U.S.S.R. and the EMU.

Migration policies would need to be essentially the same as those under the dual currency system. One caveat particularly important to the single currency system would be the danger of wage increases aimed at reducing migration. If northern wages were to be set under the single currency system at levels incompatible with labor productivity and subsidies from the South, northern enterprises would have to either cut jobs or go bankrupt, both of which would increase migration.

The ultimate success of early monetary integration would depend critically on whether an incomes policy could be effectively put in place to maintain the competitiveness of northern firms. Probably the greatest threat would come from attempts by labor unions to equalize wages across the two regions in a bid to avoid wage competition. If the attempts are not blocked sufficiently, northern wages would become too high so soon that northern firms would either cut jobs or demand large state subsidies in order to keep afloat.

## **VI. Conclusions**

This paper discussed issues related to the timing of monetary integration and supporting economic policies during a rapid and largely uncontrolled process of Korean unification. Taking account of other countries' experiences with monetary integration, as well as specific demographic and economic factors in Korea, this paper concludes that the transitory use of a separate currency in each region and supporting economic policies would help limit the initial costs of unification--an important consideration in Korean unification--although the extent of the eventual cost reduction would depend critically on the success of ensuing economic reforms in the North and a political environment during the transition, in particular the capacity to resist political pressures for wage equalization between the North and the South.

The benefits of the use of a separate currency during the transition would come from largely two channels. First, the North would be able to absorb regional real shocks during a highly volatile transition period through exchange rate movements and thus reduce transitory losses in jobs and output to that extent. As most shocks in the North would be associated with rapid economic integration with the South, a currency union formed at a later stage of the transition would not be as vulnerable to severe regional shocks as before. Second, the macroeconomic stability of the South would most likely be better protected from strong inflationary inertia in the North and this would help the South mobilize resources for unification more easily. In the meantime, the North could go through stabilization and basic structural reforms with large and timely financial and technical assistance from the South and prepare for monetary integration. However, if political pressures for wage equalization were

to dominate the transition process and indeed lead to unsustainably large wage increases in the North, this dual currency system would be able to reduce the overall unification costs only marginally and temporarily.

The macroeconomic performance of a unified Korea will in the end depend more on economic and financial policies than on the monetary regime. If the North and the South were to agree to enter into a unification process without calling for immediate monetary integration, price stabilization would need to be a major policy objective in the northern region. If a common currency were to be introduced at the outset of the transition for unavoidable political reasons, economic policies in the North would have to be oriented toward maintaining the competitiveness of the North. This would call for unpopular and often difficult measures, including the adoption of competitive conversion rates, the imposition of a strict incomes policy, and the implementation of sweeping structural reforms in the northern region. Regardless of the timing of monetary integration, incentives for migration from the North to the South could be strong due to the large income gap between the two regions. However, an attempt to reduce migration through substantially overvaluing the northern currency or sharply raising northern wages could lead to massive unemployment in the North, and this again would promote migration to the South.

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