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RATE POLICY

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**ABSTRACT**

Korea faces a number of unique problems that affect its exchange rate policy. Among these are its asymmetric competitive position vis-à-vis Japan, which is both its major supplier of machine tools and a leading competitor in third markets; the current policy of financial liberalization that goes along with democratic liberalization; and the implications of the potential future unification of the Korean peninsula. This paper considers the question of exchange rate policy for Korea in the face of fluctuations in the yen/dollar rate, increasing competition from lower cost Asian countries, and financial liberalization. The paper deals with external vs. internal targets, choice of external comparison basket, and the effects of financial liberalization. The Korean choice of an independent exchange rate policy is analyzed in terms of the trade-off between external shocks and inflation-fighting credibility of the central bank. Financial liberalization brings with it increased capital mobility. The paper also considers the possibility of a regional currency area, Korean unification, and long run equilibrium.

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## **Issues in Korean Exchange Rate Policy**

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### **I. Introduction**

As a medium-sized, rapidly industrializing country approaching membership in the Organization of Economic Cooperation and Development, Korea faces a number of unique problems that affect its exchange rate policy. Among these are its asymmetric competitive position vis-a-vis Japan, which is both its major supplier of machine tools and a leading competitor in third markets; the current policy of financial liberalization that goes along with democratic liberalization; and the implications of the potential future unification of the Korean peninsula. The role of Japan as supplier and competitor makes the widely fluctuating yen/dollar exchange rate a key determinant of Korean competitiveness and terms of trade. Financial liberalization is introducing capital flows as a major factor in exchange rate determination. And the impact of German unification on the European Monetary System has raised many questions about the potential future effects of Korean unification. This paper will seek to explore these issues.

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In the late 1980s, Korean exchange rate policy faced a situation called the "three blessings" or "three lows" of the low yen/dollar rate, low oil prices and low world interest rates. The first of these gave Korea an export stimulus, the second reduced the cost of energy imports, while the third lowered the cost of servicing external debt. The major issue at the time was how to avoid this windfall causing an unsustainable inflationary boom and whether to allow the won to appreciate or to repay external debt.

In a controversial move, the Korean government adopted a policy to repay much of its external debt, based on the assumption that the "three lows" were a temporary windfall. Balassa and Williamson [1987] argued at the time that appreciation of the won to reduce the external surplus was a more appropriate response, since it would permit additional domestic investment. Cho [1995] has supported this position with simulations indicating a much higher investment path if external debt had not been repaid.

Korea must live a charmed life, since recently the world environment again wore some of the same beneficial aspects, including a low yen/dollar rate, low oil prices, and low interest rates. On the other hand, the low yen/dollar rate was one of a number of factors depressing the Japanese economy, an important market for Korea. Since mid-1995 however, the yen/dollar rate has risen significantly, removing some of the export stimulus. And oil prices have also risen from their lows of late 1995, while

long term interest rates have rebounded from their lows of early 1996. And differently from 1988, competition from China and other Asian competitor nations is beginning to raise concerns for Korean policy-makers. Financial market liberalization is a new factor affecting both the value of the won and the Korean balance of payments.

This paper will consider the question of the appropriate exchange rate policy for Korea in the face of fluctuations in the yen/dollar rate, increasing competition from lower cost Asian countries, and financial liberalization. Section II discusses the main exchange rate policy issues for Korea, dealing with external vs. internal targets, choice of external comparison basket, and the effects of financial liberalization. Section III considers the issue of regional currency areas. Section IV discusses Korean unification, and Section V concludes with long run equilibrium.

## **II. Fundamentals of Exchange Rate Policy**

### **A. Internal vs. External Objectives**

The exchange rate defines the external purchasing power of a nation's currency. It is essential that this external purchasing power be consistent in the long run with the currency's internal purchasing power. Maintenance of the purchasing power of the nation's currency is the fundamental responsibility of the central bank or monetary authority. As is well known, there are two approaches to this fundamental problem.

The *internal target* approach consists in the central bank defining and maintaining a rate of growth of the money supply that is consistent with price stability, defined as a low and stable rate of inflation. The exchange rate is not in this case a target for monetary policy, but simply an instrument that is controlled to ensure the consistency between the internal and external purchasing power of the currency. This ensures the competitiveness of domestic exporters in international markets.

The *external target* approach involves setting a fixed exchange rate with a relatively stable currency, usually that of a large trading partner, and using the external price level to anchor domestic prices. In this case monetary policymakers must act to keep domestic interest rates aligned with foreign rates and orient all policy instruments to maintaining the exchange rate. In case domestic inflationary factors cause the exchange rate to become overvalued, devaluation to restore competitiveness is required.

The choice between these two methods of monetary control and exchange rate policy depends on the relative importance of *flexibility* in the exchange rate and *credibility* gained by anchoring the domestic price level to world prices through a fixed exchange rate. This problem has been formalized by Deverajan and Rodrik [1991] in the context of a Barro-Gordon model [1983] of an open economy subject to terms of trade shocks. The central bank's credibility is in question because it has an output target that exceeds the level consistent with stable

prices. Price and wage setters must choose their behavior before knowing the terms of trade shock or the current exchange rate. The central bank has two choices. It may commit itself to a fixed exchange rate, which prevents it from offsetting the terms of trade shock *and* from inflating to exploit the prior setting of wages and prices so as to achieve a lower unemployment rate. Or it may adopt a flexible rate to offset terms of trade shocks, which then allows it to indulge in inflationary behavior as well.

If the central bank has relatively strong anti-inflation credibility, then it will not be tempted to inflate when given the option by flexibility. In this case, the flexible rate option will allow use of the exchange rate to offset terms of trade shocks without paying a cost in terms of higher inflation. However, if the central bank's credibility is low, this option is best foregone, in order to avoid the inflationary consequences.

What is the empirical evidence on the choice between pegged and flexible rates? Edwards [1993] has shown that countries with previous experience of low inflation may be able to use a fixed exchange rate to keep their inflation low. But those with high inflation may not be able to gain credibility simply by fixing the exchange rate.

Edwards [1996, this volume] argues that political instability shortens the time horizon of the authorities and reduces their willingness to undertake necessary devaluations. The second factor makes a peg less attractive, while the first has ambiguous effects. His regressions incorporate political

instability (measured as change in government), the variability of external shocks, central bank credibility, and the ability to sustain a peg with reserves. The findings confirm the importance of the economic and political factors.

It appears that high credibility and high variance of external shocks both contribute to a choice in favor of flexibility, as Deverajan and Rodrik argue. Political instability also contributes to the choice of a flexible rate, suggesting that the unwillingness to devalue may be important.

Considering a different aspect of credibility, countries with independent central banks are found to have better records in controlling inflation than countries with central banks under direct government control [Cukierman, *et al* 1993]. But Japan and Korea are both exceptions to these findings, since they have managed to achieve relatively low inflation without requiring their central banks to be formally independent.

The implications of these conclusions for Korea point in the direction of flexibility, it seems to me. One may argue that external shocks coming from the fluctuating yen/dollar rate will remain important. The central bank has established a significant degree of credibility. Governments are more likely to change in the future than they have in the past.

### **Korea's Choices**

For Korea, the choice among these options has evolved gradually (see Table 1). During the Bretton Woods era, the



external target approach was the universally chosen option. When floating exchange rates began, Korea continued to peg its exchange rate to the US dollar during much of the 1970s. Since domestic inflation was not under control, occasional devaluations were necessary to keep the external purchasing power of the won in line with its falling internal purchasing power. But when the dollar began its radical appreciation during the 1980s, Korea shifted to a managed basket peg to avoid the won being pulled up with the dollar.

According to Oum and Cho [1995], in the 1980s Korea followed a policy of changing the exchange rate to adjust the current account, which is influenced by the exchange rate with a substantial lag, as in most countries. Since the Korean current account is heavily influenced by fluctuations in the yen/dollar rate, this set up a lagged feedback from the cycle in the yen/dollar rate to the won which caused the current account to fluctuate widely.

As the yen appreciated in the late 1980s after the Plaza Agreement, Korea's surplus grew, leading to appreciation of the won. By 1988 the yen peaked and began to depreciate, while the won kept appreciating as the surplus continued, despite the worsening of the underlying competitive position. Domestic investment increased moderately at first, but then took off in an unsustainable boom in 1990-91, as the current account shifted into deficit.

In response to the exaggerated fluctuations of the won, the government in 1990 adopted a new exchange rate policy called the "Market Average Rate System". It seems to have achieved stabilization of the real exchange rate, or maintenance of equilibrium between the external and internal values of the won.

During the early 1980s, Korea along with several other dynamic Asian economies took advantage of the sharp reduction of inflation in industrialized countries to bring its own inflation rate under control. As a result, since that time Korea has had the option to use the internal target approach to control the purchasing power of its currency. The liberalization of financial markets that took place in the 1980s has changed the environment in which monetary policy is made in Korea. Despite an inflationary boom period in 1990-91 and continued strong growth of the economy, the Bank of Korea has managed to hold the inflation rate in the neighborhood of 5-6 percent per year.

In conjunction with the liberalized financial system, Korea moved in the direction of a market-based exchange rate policy in 1990, currently allowing market factors to move the won-dollar exchange rate by up to 2.25 percent per day. At the same time, banks and other participants in the market have been allowed to hold foreign currency balances to enable them to create an interbank market for foreign exchange.

## B. Choice of External Relationship

In a multiple currency world, "the" foreign exchange rate must be defined relative to each trading partner whose currency is used in external transactions. For Korea, the primary trading partners are North America, Japan, Europe, and Other Asia. The major currencies involved would thus be the US dollar, Japanese yen, and the deutsche mark (as a proxy for other European currencies). Since these exchange rates have fluctuated sharply in recent years, Korea has been forced to accept significant fluctuations in traded goods prices.

The main issue can be illustrated by the following hypothetical example. Assume that Korea exports only to the United States in dollars and imports only from Japan in yen. If  $e_Y$  is the won/yen exchange rate and  $e_\$$  is the won/dollar exchange rate, then export prices are  $p_\$ e_\$$  and import prices are  $p_Y e_Y$ . The terms of trade will then be  $p_\$ e_\$ / p_Y e_Y = p_\$ / p_Y e_{Y/\$}$ , where  $e_{Y/\$}$  is the yen/dollar exchange rate. If dollar prices and yen prices remain relatively stable, the terms of trade will fluctuate with the yen/dollar exchange rate, no matter what happens to  $e_Y$  or  $e_\$$ . This is the key problem for Korea. Only if the yen/dollar rate follows purchasing power parity will Korea be unaffected by its fluctuations.

If Korea pegs to the dollar, her import prices will then fluctuate with the yen/dollar rate, while export prices are stable. If she pegs to the yen, her export prices will fluctuate with the yen/dollar rate, while import prices are stable.

Choosing a *basket* peg enables Korea to balance its competing interests and minimize the fluctuation of traded goods prices. Define the basket as  $e_k = e_{\$}^{\alpha_{\$}} e_{¥}^{\alpha_{¥}} e_{dm}^{\alpha_{dm}}$ . Then pegging to the basket sets  $\hat{e}_k = \alpha_{\$} \hat{e}_{\$} + \alpha_{¥} \hat{e}_{¥} + \alpha_{dm} \hat{e}_{dm} = 0$ , where  $\alpha_{\$}$ ,  $\alpha_{¥}$ , and  $\alpha_{dm}$  are the weights applied to the dollar, the yen, and the deutsche mark (or ecu) exchange rates.

The weights are normally chosen to minimize the impact of the resulting fluctuations on the foreign currency value of the balance of trade. Assume that the export and import shares of the dollar, yen, and dm are  $w_i$  and  $v_i$  for  $i = \$, ¥, dm$ . Using the traditional model for exports and imports would put  $\alpha_i = [\epsilon(\eta^f - 1) / (\epsilon + \eta^f)] w_i + v_i \eta$ , where  $\eta$  and  $\eta^f$  are the domestic and foreign elasticities of demand for imports and  $\epsilon$  is the domestic elasticity of supply of exports (assuming  $\epsilon^f$  is infinite for a small country). If  $\eta^f = 2.5$ ,  $\eta = .7$ , and  $\epsilon = 2$  for Korea [Kwack, 1986], this would give weights approximately equal to the trade shares of the dollar, yen, and mark, or (using 1994 trade shares) 39 percent for the dollar, 36 percent for the yen, 25 percent for the mark.

On the other hand, with \$30 billion worth of foreign exchange reserves, Korea no longer has to worry about the availability of foreign currency. Weights that would minimize the impact on the *domestic* currency value of the balance of trade would limit effects on domestic output and employment. In this case, the weights should be  $\alpha_i = [(1 + \epsilon)\eta^f / (\epsilon + \eta^f)] w_i + (1 - \eta) v_i$ , which would imply weights of 43 percent for the dollar, 32

percent for the yen, and 25 percent for the dm. The larger role for the dollar under the domestic currency criterion reflects the greater importance of dollar markets for domestic currency export receipts, which have a higher elasticity than domestic currency import payments.

What this analysis omits is the impact of competing suppliers in the export market, which for Korea would be Japan and the other Asian industrializing countries, mainly Taiwan and Hong Kong. Including competitors would increase the weight on the yen and add Taiwan and Hong Kong to the basket. For the past ten years, Hong Kong and Taiwan have both pegged their currencies very closely to the US dollar. So the result would be to add to the weights of both the yen and the dollar in the basket, with perhaps little effect on the overall proportions. [See Williamson, 1995].

Even if Korea chooses not to peg its currency, the basket represents the appropriate basis for comparison of the movements of the external and domestic purchasing power of the won. Chart 1 shows the OECD's measures of nominal effective exchange rates of the won and related currencies. An inverse correlation will be noticed for most of the currencies relative to the movements of the Japanese yen. This reflects the degree to which their dollar pegs, especially during the 1980s, moved their currencies relative to the yen.

Chart 2 shows the corresponding real effective exchange rates, including my calculations for the bilateral Chinese yuan/

dollar rate. During the 1980s most of the East Asian currencies moved inversely to the yen in real as well as nominal terms. In the 90s, however, the Hong Kong and Singapore dollars have appreciated more in real terms than the Taiwan dollar, the won, or the yuan. which except for the latter have been relatively stable in real terms.

Chart 3 indicates the behavior of the won, in real and nominal terms, along with prices, as measured relative to consumer prices in industrial countries. From the perspective of stability in the real exchange rate, the "Market Average Rate System" appears to be performing rather well. Put differently, the external value of the won is conforming more closely to its internal value.

### **C. Financial Liberalization**

In July 1993 the Government of Korea announced a seven-year plan for liberalization of the financial sector of the economy [Park, 1993]. The major factors include gradual deregulation of all interest rates except deposit rates by 1997, eliminating government influence over bank lending operations, encouraging the development of competition and new financial instruments, and liberalization of the foreign exchange market and of capital flows. The purpose of this program is to use the financial markets to improve the efficiency with which financial resources are channeled to investment. In conjunction with this reform, the "real name" system was implemented in 1993, requiring all

accounts to bear the real name of the holder. These major reforms are having important repercussions on the Korean economy and society. The tight network of personal relationships which has characterized the partnership between business and government is being replaced with more impersonal market-based relationships and explicit regulations.

The impact of financial liberalization on the foreign exchange market is significant. Kenen [1993] argues that the primary external effect of a credible liberalization of domestic financial markets in a developing country will be substantial capital inflow, leading to appreciation of the real exchange rate. He treats the existence of capital controls as equivalent to a tax on exporting capital. Liberalization eliminates the tax now and in the future. Thus capital inflow comes in response to the removal of the threat of future taxation of domestic financial assets. If the exchange rate is pegged, such capital inflows will require sterilization of large reserve inflows. If the exchange rate is floating, substantial nominal appreciation will occur.

But appreciation in response to capital inflow is only one possibility. Suppose that the capital controls limit both foreigners who wish to import capital and Koreans who wish to invest abroad. Their removal then leads to substantial portfolio diversification by both foreigners and domestic residents and a sharp increase in both capital inflows and outflows, with little impact on the exchange rate. According to Korean balance of

payments data, both capital inflows and capital outflows have increased sharply since the liberalization of the financial sector in 1993. In the Korean context, the adoption of the "real name" system could itself lead to capital outflow. If formerly confidential transactions are now exposed to the authorities, in future such transactions would have to be carried out offshore to remain unknown to the authorities.

In actuality, the real (and nominal) exchange rate of the Korean won has appreciated since the beginning of the 1993-97 liberalization of financial markets. The reasons for this behavior are probably found more in the capital account than the current account. During the period 1987-89, the influence of the current account on exchange rate policy was so strong that Korea's exchange rate appreciated strongly at the same time that reserves grew sharply and external debt was repaid. Then the external windfall temporarily disappeared with the rise in petroleum prices, interest rates, and the yen value of the dollar during the Gulf War crisis in 1989-90. Strong real wage growth during an inflationary boom provided internal stimulus. Korea's current account turned quickly negative, and the exchange rate depreciated in real terms during the period 1991-93. Thus the capital inflows, far from being a problem for monetary management, were welcome financing for the current account deficit [Folkerts-Landau, *et al*, 1995].

Associated with the program of financial liberalization is a substantial liberalization of the foreign exchange market itself,



permitting banks, firms, and individuals to hold foreign currencies more freely and to make transactions more freely [Kim, 1994]. Also, the permitted daily fluctuation of the won has been gradually increased, moving in the direction of a freely floating system. This does not mean, however, that intervention will be avoided, as foreign exchange reserves have increased by \$14.5 billion since July 1993, in response to strong net capital inflows.

#### **D. Limiting the Rate of Capital Inflow**

A range of policies may be considered in the effort to keep capital inflows from overwhelming domestic exchange rate and monetary policies (IMF, 1995). Keeping the exchange rate flexible will impose some costs on risk-averse investors and thereby limit capital mobility. Taxing the interest earnings of foreign investors will also limit the inflow of capital. Equivalently, the authorities may impose reserve requirements on foreign capital inflows. Intervention in the foreign exchange market will limit the impact of capital inflows on the exchange rate, which if unsterilized will lead to an increase in the domestic money supply. Some amount of sterilized intervention can also be used, at the cost of the interest paid on the bonds issued to soak up the increase in liquidity. Finally, the authorities could simply set limits on the allowed amount of capital inflows of various types. This last tactic, like the taxes and reserve requirements, may be subject to evasion. More seriously, it will create rents and may lead to rent-seeking behavior, bribery, and so on. In

summary, the best policy to limit capital inflows will be some judicious combination of all of the above, together with allowing some non-predictable amount of exchange rate appreciation.

### **III. Should Korea Join a Currency Area?**

One solution to some of the problems of exchange rate policy is the formation of a currency bloc. By pegging to a single currency standard, whether that of a large country or of a group of like-minded countries (as in the case of the European Monetary System), a country can reduce the exchange-rate-induced fluctuation in its traded goods prices relative to the members of the bloc. Needless to say, this makes sense only if the partner or partners have a stable economy and inflation rate.

For Korea, there are only two choices here, either pegging to a basket including her major markets such as Japan, the United States, and Europe or pegging together with a group of competitors such as Taiwan, Hong Kong, Singapore, Thailand, and Malaysia. The first possibility would essentially require Korea to choose between stability of traded goods prices and the ability to respond to external shocks, as discussed above. While this option could minimize the variability of traded goods prices, it would not eliminate the terms of trade fluctuations noted earlier.

The second possibility would require a group of diverse competitors at different levels of development to agree on exchange rate policy and therefore on monetary policy over an extended period of time. It is already clear that these countries

face significantly different economic policy problems and have chosen different exchange rate policies in the past. The Hong Kong dollar has been pegged to the US dollar since 1984, while both Taiwan and Singapore have steadily appreciated, Singapore much faster. In addition, Korea's financial liberalization is proceeding on its own schedule, independently of the other Asian industrializing countries.

The feasibility of a currency area also depends on the degree of symmetry of the shocks expected to hit the various member countries. Contemplating the potential members is not reassuring on this score. South Korea will someday have to adjust to reunification with North Korea. Hong Kong is facing reintegration with China and its own entirely different set of structural adjustments. Taiwan continues to face the threat of attempts to reintegrate it into China. Thailand and Malaysia are at different stages in the development process from Korea. Reviewing these issues indicates the advantages of an independent exchange rate policy for Korea, for the foreseeable future.

This does not, however, rule out the usefulness of increased monetary cooperation in East Asia. With growing capital mobility and the potential for external financial shocks spilling over into Asian markets, coordinated strategies for responding to external shocks could be attractive. Coordinated responses to wide fluctuations in the yen/dollar rate could help avoid the extent of fluctuations in real exchange rates that took place in the late 1980s.

#### **IV. Implications of Korean Unification**

When and if Korea reunites, it will face major structural readjustment problems. The example of German unification suggests that such a large real shock may be more easily adjusted to with a flexible rate. While the full implications of reunification are beyond the scope of this paper, it is at least clear that there would be a large demand for new investment to enlarge the capital stock of North Korea, both public and private. Such a large demand shock might also be accompanied by a negative supply shock, if Korea were to follow Germany's example and raise wages in the North without any corresponding increase in productivity. The net excess demand shock would require a contractionary fiscal response. If this were not provided, as it was not in Germany, then tight monetary policy would be needed to prevent inflation. The real interest rate would rise, and the real exchange rate would appreciate at once, then depreciate gradually over time in keeping with uncovered interest rate parity. The size of the net excess demand shock and the implied exchange rate effect could be reduced by more appropriate fiscal policy and wage policy.

#### **V. Long Run Equilibrium**

In an economy like Korea, where per capita incomes and real wages are rising strongly over time, one major factor affecting the equilibrium real exchange rate is the rising relative price of nontraded goods, as domestic labor becomes more expensive.

Thus the real exchange rate would be expected to appreciate over time as traded goods become relatively cheaper.

The other major factor is the increased attractiveness of Korean real and financial assets, both to foreigners and to Koreans themselves, as rates of return continue to be high and the economy becomes increasingly integrated with the rest of the world. This will also tend to appreciate the real value of the currency, offset to some degree as Korean firms and individuals diversify their asset holdings abroad. Particularly evident here is the drive of Korean *chaebol* to establish overseas operations as part of the process of globalization.

However, structural weaknesses can limit the rate of real appreciation, because of the negative effect it has on the Korean current account. Currently, Korea has been losing market share in the United States to Asian developing countries, offsetting this with sales gains in rapidly growing Asian markets. Among several problems with this process are the increasing tendency of Korean firms to move production to other Asian markets and the continued reliance of Korean firms on imports of Japanese machinery for expansion. Unless Korea can overcome these weaknesses, her ability to resume a healthy path of gradual real appreciation will be in question.

Table 1. Korean Exchange Rate Regimes

Period	Regime	Characteristics
1955-1972	Bretton Woods Era	Inflation/Devaluations
1973-1979	Pegged to US dollar	Inflation/Devaluations
1980-1989	Managed Basket Peg	Current Balance Target
1990-present	"Market Rate System"	Stable Real Exchange Rate

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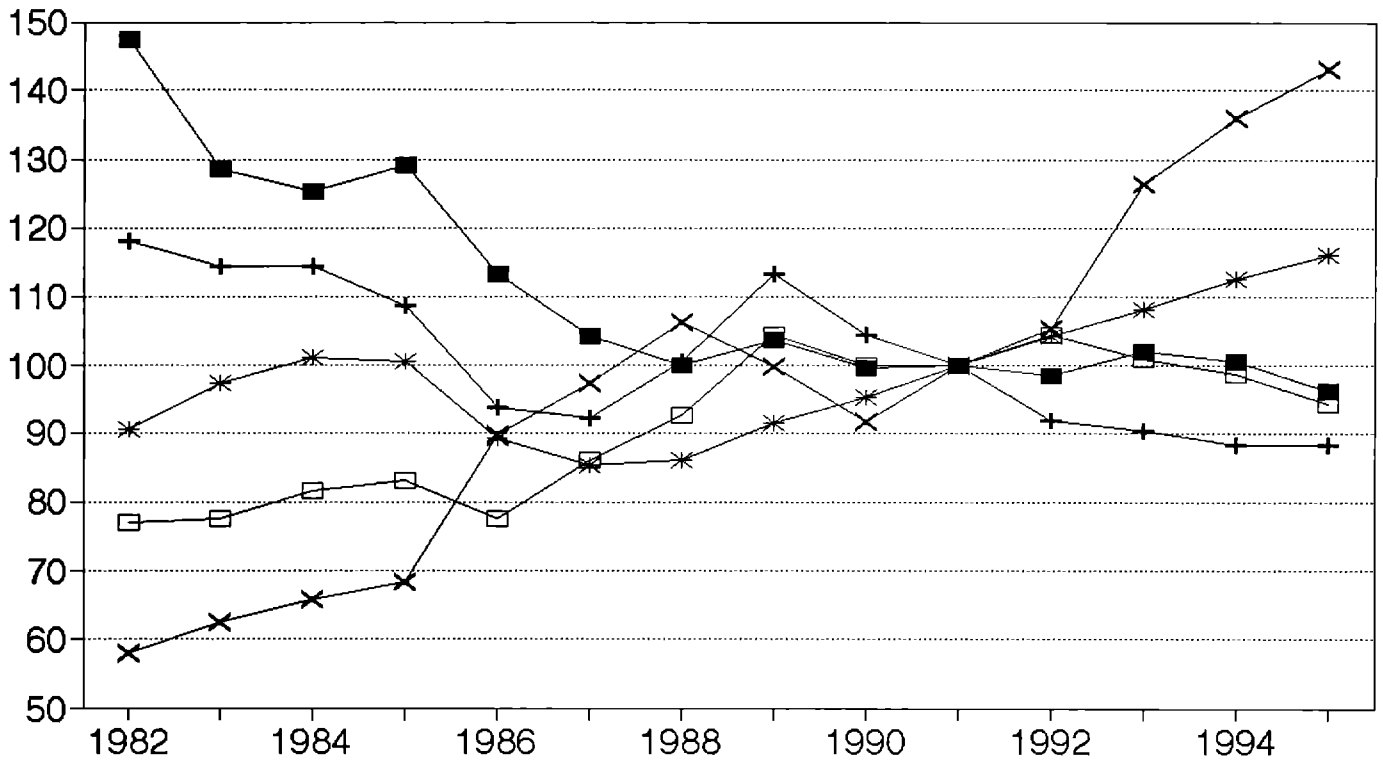


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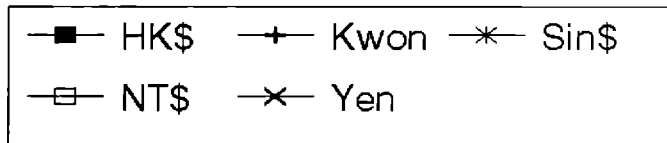
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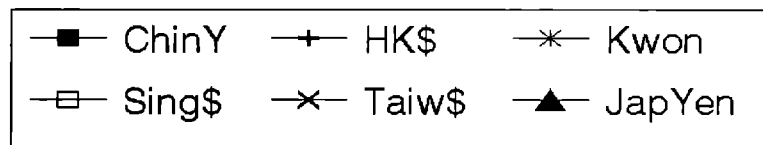
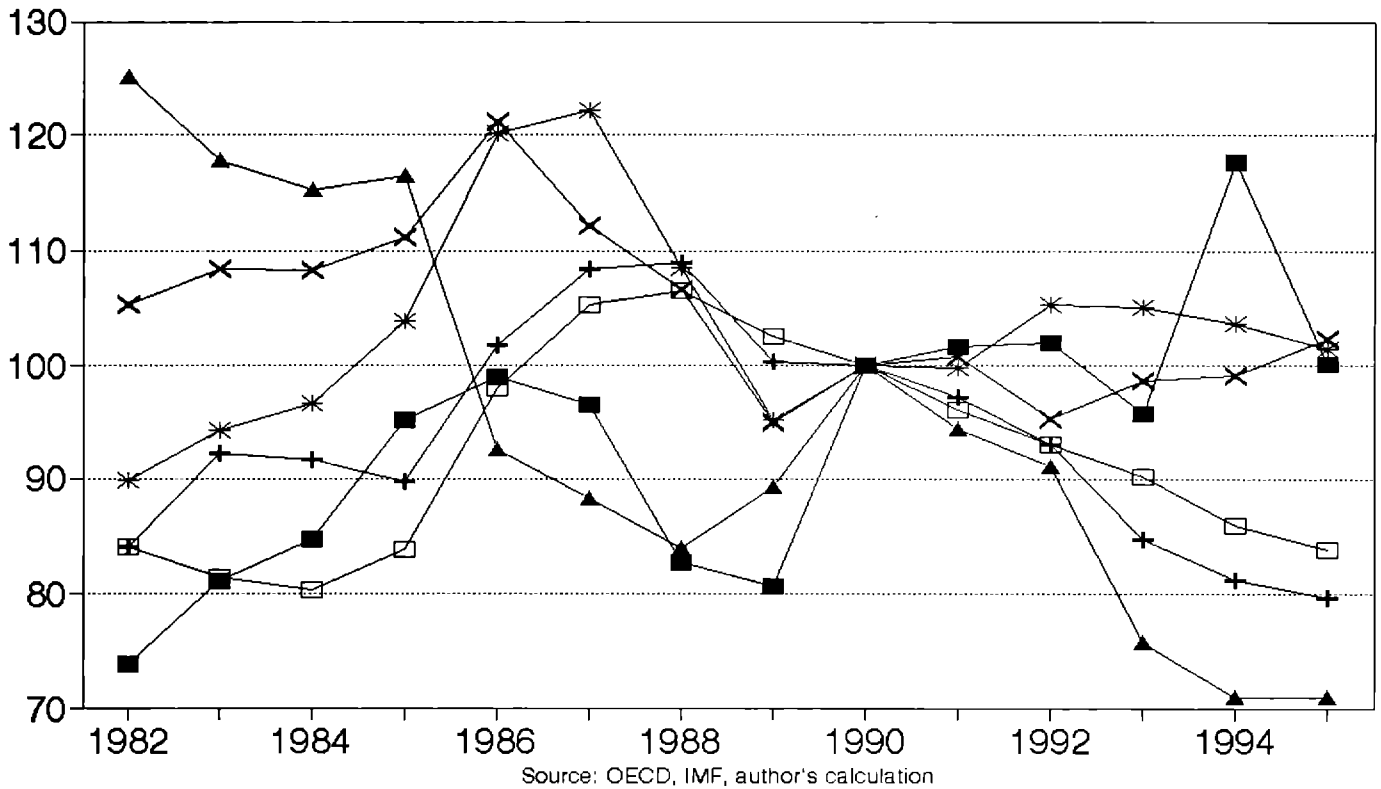
# Chart 1. Asian Effective Exchange Rates



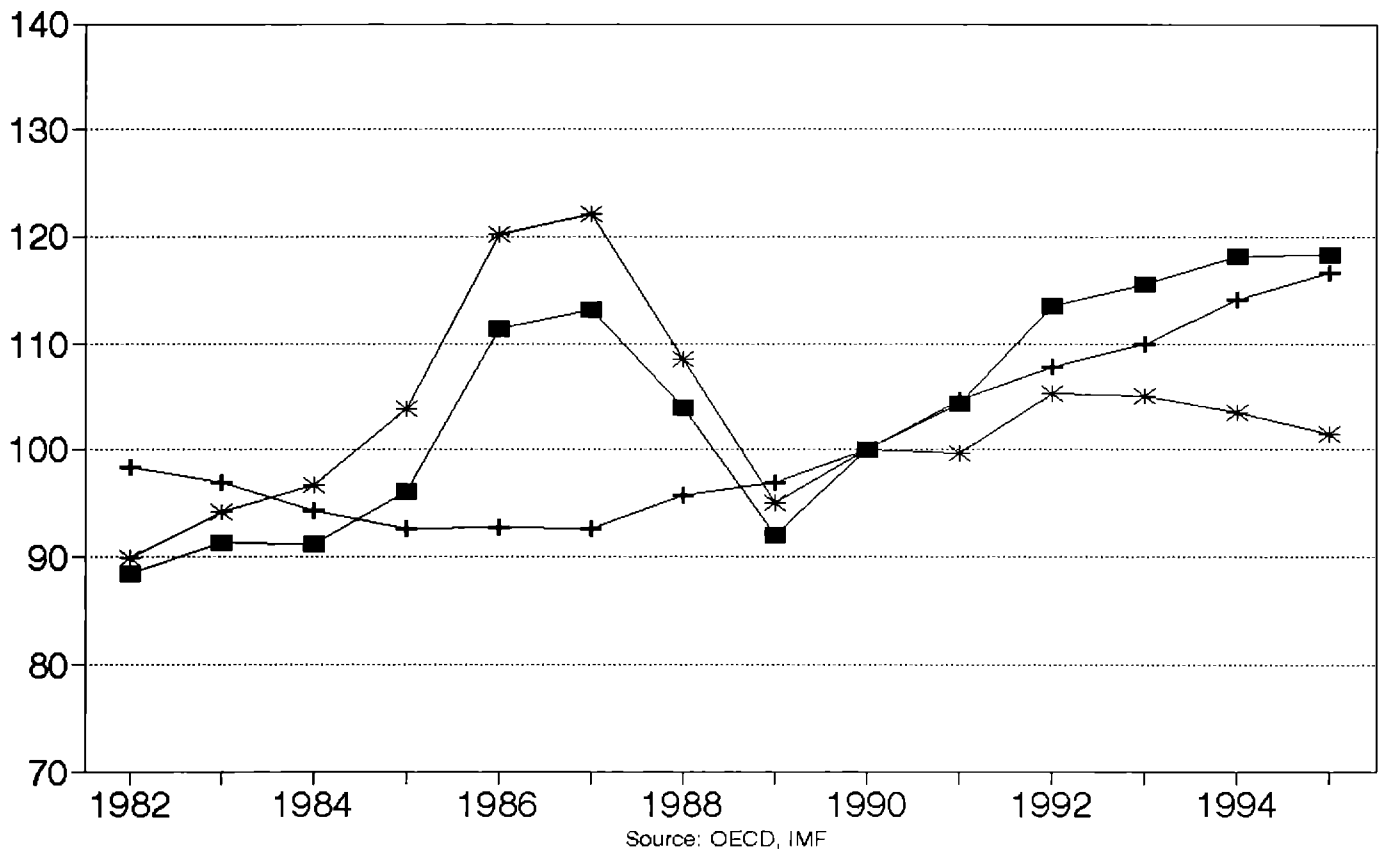
Source: OECD Economic Outlook 58



# Chart 2. Real Effective Exchange Rates



# Chart 3. Korea Exchange Rate and Prices



—■— E    —+— P/P\*    —\*— REER