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**Working Paper**

## Rebalancing growth in the Republic of Korea

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## **ADB Working Paper Series**

Rebalancing Growth in the Republic  
of Korea

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Joonkyung Ha,  
Jong-Wha Lee and  
Lea Sumulong

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**Abstract**

The current account surplus of the Republic of Korea (henceforth Korea) increased significantly in the immediate recovery period after the 1997–1998 Asian financial crisis. Since then the surplus has gradually diminished, and from 2006 to 2008, the current account was close to being balanced. Econometric analysis reveals that the effect of exchange rate changes on Korea's trade is not robust during non-crisis periods. Exchange rates only significantly affect trade when observations during crisis periods are included. This suggests that exchange rate adjustments alone will not solve the imbalance issue. Korea's external imbalances are not only caused by external factors; they also reflect internal and policy factors such as: (i) saving-investment imbalances; (ii) export-oriented policies; and (iii) the unbalanced structure of manufacturing and services. These internal imbalances result from domestic distortions and structural imbalances arising from market inefficiencies and public policies. These must be addressed to ensure balanced and sustained economic growth.

**JEL codes:****E2, E6, F4, O1, O2**

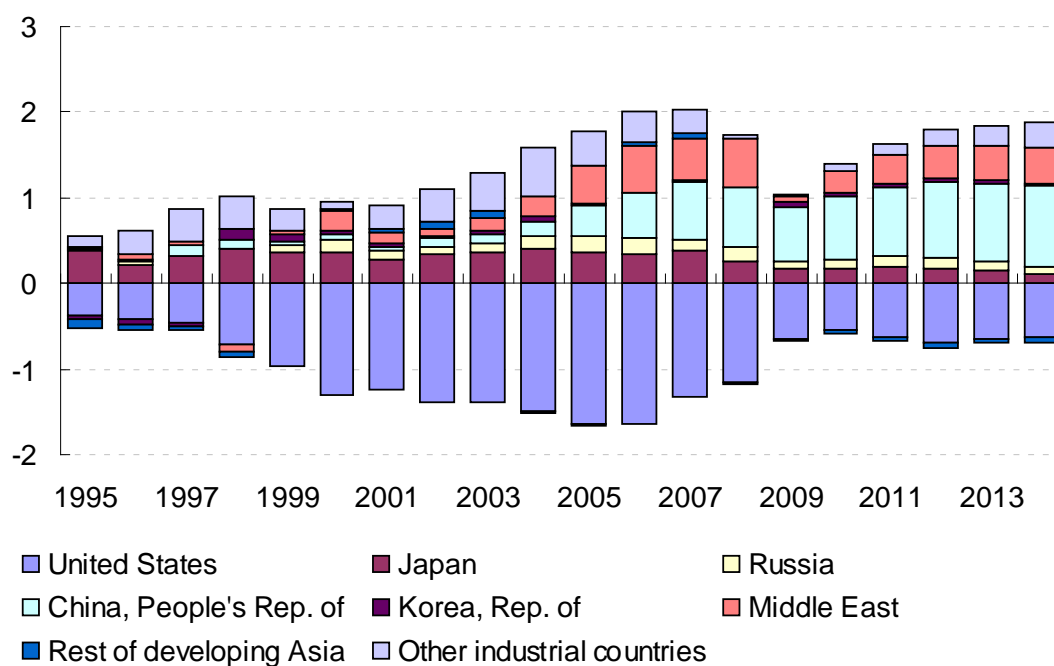
## 1. INTRODUCTION

The state of the world's current account imbalances still poses the risk of sparking another financial crisis. Prior to the current global economic turmoil, there was widespread concern that a “disorderly unwinding” of growing global imbalances would lead to a crisis. In the end, these imbalances did not directly cause the financial crisis that unraveled in 2008. Instead, the primary causes were inadequate financial market regulation and lax monetary policy in industrialized countries, particularly in the United States (US). Such an environment encouraged overspending in the US, which was financed by excess saving from other parts of the world.

The current global turmoil is nevertheless underpinned by global current account imbalances, for which Asia is partly responsible. Indeed, Asia's aggregate current account surpluses have been rising sharply since 2003. The region therefore has a responsibility to reduce its share of the global imbalance and lessen the risk of another economic crisis. Addressing the issue of Asia's current account imbalances, however, requires a better understanding of the causes.

Global imbalances have been mainly driven by the large current account deficits of the US, and the corresponding surpluses in the rest of the world, including developing Asia (Figure 1). Asia's current account surpluses increased rapidly after the 1997–1998 Asian financial crisis, as a result of declining domestic demand. Investment rates fell sharply in the crisis-hit economies as well as in the region's newly industrialized economies (Lee and McKibbin 2007).

**Figure 1: World Current Account Balance (% of world gross domestic product)**



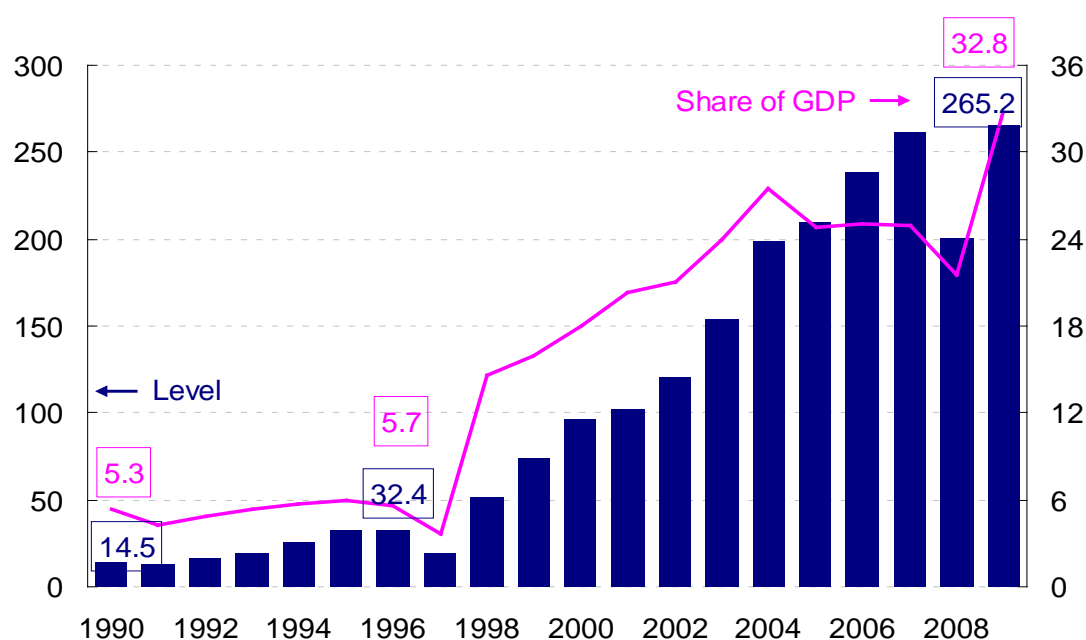
Source: IMF, World Economic Outlook October 2009, (<http://www.imf.org/external/ns/cs.aspx?id=29>).

External imbalances are not just an external problem, and should not be judged solely by their size. In open economies, current account imbalances can naturally emerge from country-specific macroeconomic and financial factors; as long as the imbalances reflect economic fundamentals, these cannot be considered “bad”. However, current account

imbalances can also result from internal microeconomic imbalances, or domestic distortions caused by market inefficiencies or public policies (Blanchard and Milesi-Ferretti 2009). The domestic saving-investment imbalance, as well as policies on export orientation, exchange rates, and reserve management, can all have an impact on external imbalances. These internal factors suggest that exchange rate adjustments alone will not bring about balanced growth. Rather, a structural approach would be needed to address the fundamental source of imbalances.

This paper focuses on the experience of the Republic of Korea (henceforth Korea), and assesses the underlying reasons for the country's current account imbalances. Korea was hit hard by the global crisis, yet its contribution to the global imbalance problem has been relatively small, even insignificant. Korea's net exports averaged a mere 1.1% of gross domestic product (GDP) from 2005 to 2008, and while its foreign exchange reserves did increase from US\$52.0 billion (14.6% of GDP) in 1998 to US\$200.5 billion (21.5% of GDP) in 2008 (Figure 2), this still accounted for only 2.9% of total global reserves in 2008.

**Figure 2: Foreign Exchange Reserves (US\$ billion, % of GDP)**



Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

This paper is organized as follows: Section 2 presents Korea's current account imbalances, focusing on trends, determinants, and composition. Sections 3 to 5 focus on the different factors which have contributed to Korea's external imbalance problem, i.e., savings and investment imbalances, export-led growth, and internal imbalances between manufacturing and services. Section 6 lays out the policy agenda for rebalancing the country's growth.

## 2. CURRENT ACCOUNT IMBALANCES IN KOREA

### 2.1 Current account trends

Korea's current account changed dramatically after the 1997–1998 Asian financial crisis. Between 1980 and 1996, the current account had an average deficit amounting to 0.32% of GDP, with a standard deviation of 1.82 (using quarterly data). Between 1999 and 2009, however, the current account shifted to an average surplus amounting to 1.99% of GDP, with a standard deviation of 2.17 (Table 1). There was greater volatility in the post-crisis period, particularly if data for 1997 and 1998 are included.

**Table 1: Descriptive Statistics for Current Account Balance as a Percentage of GDP**

	1980Q1-2009Q3	1980Q1-1996Q4	1999Q1-2009Q3
Mean	0.83	-0.32	1.99
Median	0.34	-0.65	1.90
Max	11.99	4.11	6.97
Min	-4.28	-4.08	-3.57
Std. Dev.	2.83	1.82	2.17

Note: quarterly data is used.

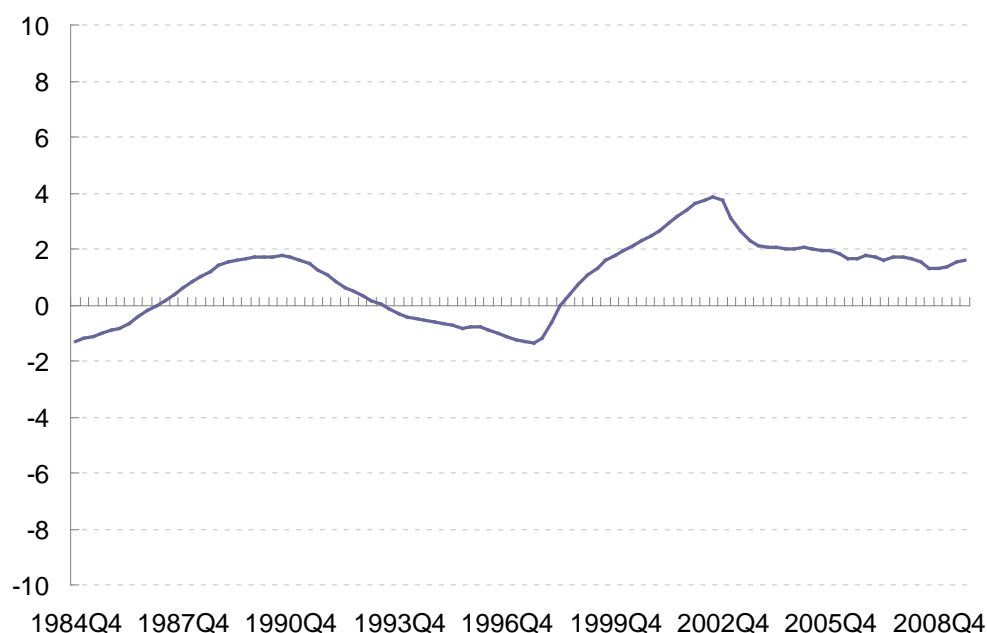
Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

Given such volatility, it is difficult to tell if the recent surplus in the current account will be permanent. Indeed, Korea's current account surplus began narrowing in 1999, when the foreign exchange crisis ended, and continued to do so until 2007. There was even a brief return to a current account deficit in the first three quarters of 2008.

The drastic depreciation in the Korean won and the rapid contraction in domestic demand following the 2008 global financial crisis put the current account back into surplus by the fourth quarter of 2008. Estimates for 2009 suggest a vast surplus amounting to 5.3% of GDP, due to large surpluses in the goods and services accounts. The massive slowdown in exports was outweighed by an even sharper deceleration in imports, as Korean firms and consumers cut back on spending.

Nonetheless, if we look at the 5-year moving average of the current account balance as a percentage of GDP and smooth out the annual volatilities, it would be premature to say that this dramatic widening in the surplus signals a departure from the overall narrowing trend (Figure 3). It may well be that the 2009 surplus is temporary, and merely repeating trends in the immediate years after the Asian financial crisis.



**Figure 3: Current Account Balance (% of GDP, 5-year moving average)**

Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

## 2.2 Determinants of Korea's current account

Korea's current account seems to be correlated with major economic variables such as exchange rates, national GDP, and world GDP. To determine the exact magnitude of the effects of these variables, we conducted econometric analyses using dynamic ordinary least squares method.

Specifically, we set up the following models for exports and imports. Equation (1) is for exports, where the real effective exchange rate and world GDP are the determinants. Equation (2) is for imports, where the real effective exchange rate and Korea's GDP are the main determinants.

$$ex_t = \alpha + \beta_1 reer_t + \beta_2 wgdpt + \sum_{j=-p}^p \beta_{reer,j} \Delta reer_{t-j} + \sum_{j=-p}^p \beta_{wgdpt,j} \Delta wgdpt_{t-j} + u_t \quad (1)$$

$$im_t = \alpha + \beta_1 reer_t + \beta_2 gdpt + \sum_{j=-p}^p \beta_{reer,j} \Delta reer_{t-j} + \sum_{j=-p}^p \beta_{gdpt,j} \Delta gdpt_{t-j} + u_t \quad (2)$$

Here,  $ex$  is export volumes,  $im$  is import volumes,  $reer$  is real effective exchange rate,  $wgdpt$  is world GDP, and  $gdpt$  is Korea's GDP. All variables are in natural logs and use quarterly data from various sources.<sup>1</sup> Equations (1) and (2) are estimated with  $p = 2$ .

The results for Equation (1) are summarized in Table 2. Column (1) is the specification for Equation (1) with the full sample. The results show that Korea's exports are significantly correlated with exchange rates and world GDP, as predicted by economic theory. However, the coefficient of the exchange rate, or the exchange rate elasticity of exports, is much

<sup>1</sup> The data for Korea's export volumes, import volumes, and GDP have been obtained from the Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)). Real effective exchange rates for Korea, Dubai crude oil prices, and world GDP growth rates have been obtained from Bloomberg, and real effective exchange rates for Japan from the IFS database.

smaller (-0.16) than that of world GDP (3.44). This means that a one percent depreciation in the real effective exchange rate will increase Korea's exports by 0.16%<sup>2</sup>, whereas a one percent increase in world GDP will increase Korea's exports by 3.44%

**Table 2: Determinants of Korea's Exports**

Variable	Full sample		Non-crisis periods only	
	Coefficient	t-statistic	Coefficient	t-statistic
Constant	-11.74***	-28.54	-8.14***	-4.36
Real effective exchange rate	-0.16**	-1.97	-0.01	-0.02
World GDP	3.44***	49.65	2.52***	3.76
Adjusted r-squared	0.9847		0.9838	
Sample (adjusted)	1996Q4 - 2009Q2		2000Q4 - 2007Q2	
# of observations	51		27	

Note: \*\*\* denotes significance level of 1%, \*\* 5%, and \* 10%, respectively. Coefficients on differences and lagged differences are not shown in the table.

Source: Authors' calculations.

Overall, these results may have been influenced by drastic changes in the variables during the 1997–1998 Asian financial crisis and the 2008–2009 global financial crisis. If one considers a stable period, the same econometric model would give a totally different picture. Column (2) in Table 2 shows the results for Equation (1) for the non-crisis period covering 2000Q4–2007Q2. For this sample, the effect of the exchange rate on exports has virtually no significance, while world GDP has a strong effect.<sup>3</sup> During this non-crisis period, the Korean won appreciated without reducing the pace of export growth.

Table 3 shows similar results for imports: while the real effective exchange rate and GDP are generally important determinants, the exchange rate elasticity is much smaller than the income elasticity. Column (1) corresponds to Equation (2) with the full sample. The results show that a one percent appreciation in Korea's real effective exchange rate raises imports by 0.59%, while a one percent increase in Korea's GDP raises imports by 1.55%. Moreover, as seen in Column (2), the effect of the exchange rate again becomes insignificant if one considers the non-crisis period.<sup>4</sup> During the non-crisis period, exchange rate appreciation did not increase domestic demand; the share of private consumption declined continuously, regardless of the direction of the won's value (Figure 4).

<sup>2</sup> While a depreciation in the real effective exchange rate increases real exports, the impact of the nominal exchange rate on exports would also depend on the magnitude of exchange rate pass-through, that is, the extent to which exporters change export prices in response to exchange rate.

<sup>3</sup> We also considered the real effective exchange rate of the Japanese yen as an additional determinant of Korea's exports. The coefficient of Korea's real effective exchange rate, *reer*, increased to -0.43 in the estimation with the full sample, but remained insignificant in the non-crisis sample.

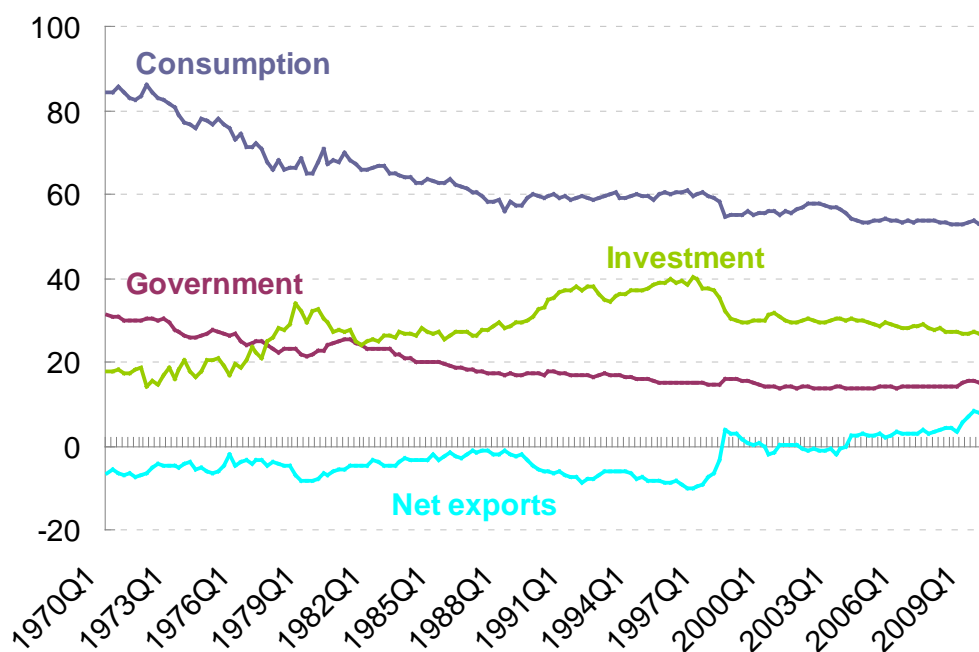
<sup>4</sup> The Dubai crude oil price was also considered as an additional determinant of Korea's imports. The coefficient of Korea's real effective exchange rate, *reer*, increased to 0.40 in the estimation with the full sample, but remained insignificant in the non-crisis sample.

**Table 3: Determinants of Korea's Imports**

Variable	Full sample		Non-crisis periods only	
	Coefficient	t-statistic	Coefficient	t-statistic
Constant	-17.16***	-29.49	-19.47***	-10.97
Real effective exchange rate	0.59***	6.76	0.14	0.49
GDP	1.55***	43.66	1.91***	8.22
Adjusted r-squared	0.9763		0.9516	
Sample (adjusted)	1996Q1 - 2009Q1		2000Q4 - 2007Q2	
# of observations	53		27	

Note: \*\*\* denotes significance level of 1%, \*\* 5%, and \* 10%, respectively. Coefficients on differences and lagged differences are not shown in the table.

Source: Authors' calculations.

**Figure 4: Expenditure Components (% of GDP)**

Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

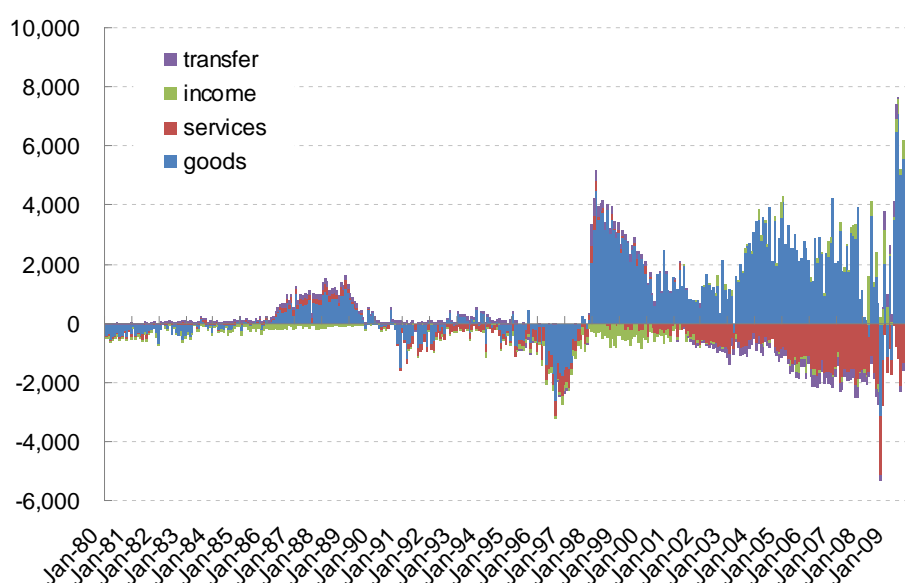
These results suggest that exchange rates may not have a significantly meaningful impact on exports and imports in Korea; however, immense shocks such as financial crises do affect net exports. Moreover, the magnitude of the exchange rate elasticity is smaller compared to variables such as world GDP or Korea's own GDP. These results are consistent with the findings of other research. For example, Choi and Choi (2009) have shown that the effect of exchange rate changes on exports and imports has diminished since 2000. This is partly due to a significant weakening in the exchange rate pass-through effect for export products, as more intermediate goods are outsourced globally. Kim and Kwark (2009) have likewise shown that the effect of exchange rates on exports and investment has weakened significantly since the Asian financial crisis.

### 2.3 Behind the current account trends: Dollar recycling mechanism through the services account deficit

It remains unclear if Korea's current account imbalance should be regarded as something serious; on average, the imbalance has only amounted to a small percentage of GDP (Table 1), and had in fact been narrowing until the global financial crisis hit in 2008. However, merely focusing on the magnitude of the current account would be missing the structural problems which have caused the imbalance in the first place.

Figure 5 shows that there has been a clear shift in the composition of the current account balance. Before 1997–1998, the goods and services accounts moved in the same direction. Shortly after the Asian financial crisis, however, the services account started moving in the opposite direction of the goods account. From 1999 to 2009, the accumulated goods account had a surplus of US\$283.8 billion, while the services account had a deficit of US\$117.3 billion. In other words, 41.34% of the goods account surplus has been offset by the services account deficit.

**Figure 5: Composition of the Current Account Balance (monthly, US\$ million)**



Note: Seasonally adjusted data.

Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

This can be regarded as a kind of dollar recycling mechanism, and could partly explain why the appreciation in the won did not reach levels where net exports would disappear. This mechanism works as follows: the goods account surplus pushes up the value of the won, inducing Korean firms and households to buy more foreign services; this widens the services account deficit, and keeps the value of the won from appreciating as much. Granger causality tests (Table 4) confirm that the services account deficit follows the goods account surplus, and not the other way around.

What kind of services brought about the deficit in the services account? Figure 6 shows that travel and other business services account for most of the deficit. Travel includes not just tourism but also the money that goes to Koreans studying overseas. Other business services consist of merchant and other trade-related services; advertising; legal, accounting, and consulting services; and services between related enterprises.

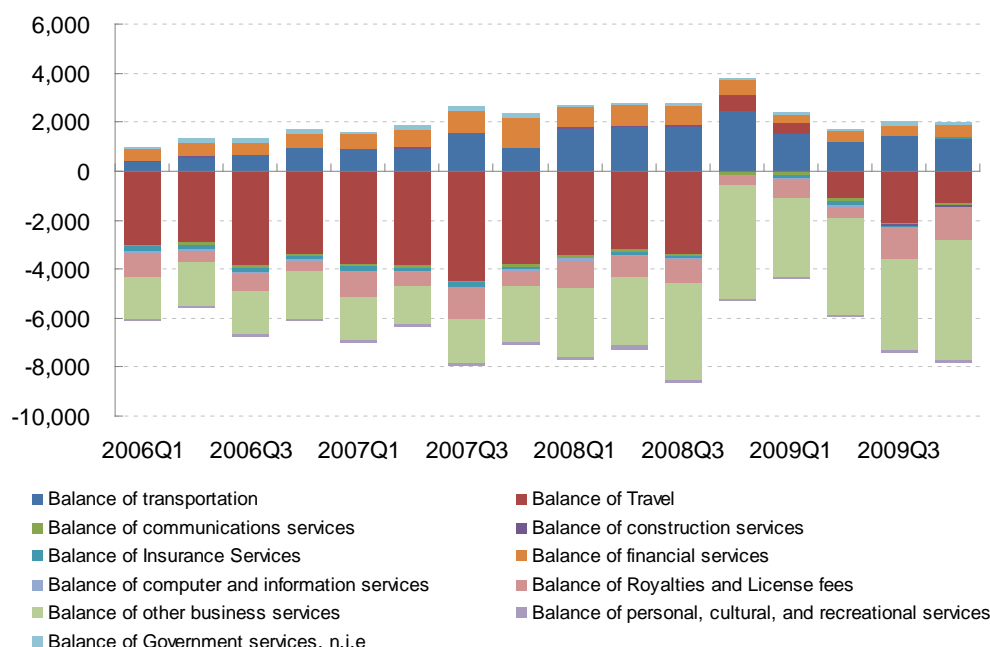
**Table 4: Pairwise Granger Causality Tests for Net Exports and Services Account Balance**

Sample: 1980M01 2009M11  
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
SERVICES does not Granger Cause NX	357	1.07212	0.3434
NX does not Granger Cause SERVICES		16.2723	2.E-07

Source: Authors' calculations.

**Figure 6: Composition of the Services Account Balance (quarterly, US\$ million)**



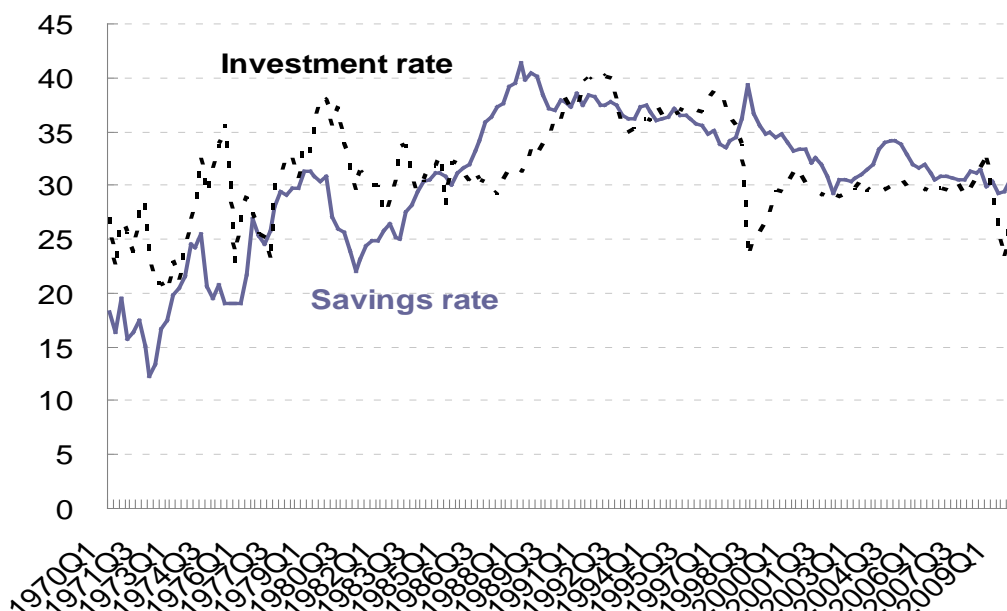
Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

The correlation between the goods account surplus and services account deficit may reflect a basic structural problem in the Korean economy: the weakness of the services sector, such as education and business services. If the services sector had been strong enough, domestic demand as a percentage of GDP would have been larger, and Korea would not have had to rely so much on the external sector. The services account deficit would have been smaller, while the goods account surplus would not have been so large.

This points to another kind of imbalance in the economy: the imbalance between the goods sector and the services sector. This imbalance is reflected not only in the external accounts but also in the internal imbalance in domestic industries, as will be discussed in section 5.

### 3. SAVINGS AND INVESTMENT IMBALANCES

Savings and investment imbalances mirror the overall trend in the current account. In Korea, the saving-investment imbalance emerged only after the Asian financial crisis. Before the crisis, Korea's investment was generally larger than its savings (Figure 7), resulting in current account deficits. Indeed, in the 20 years before the crisis, the current account had surpluses in only five years: from 1986 to 89, and in 1993 (Figure 8). In 2008, Korea's current account once again turned negative.

**Figure 7: Savings and Investment Rates (% of GDP)**

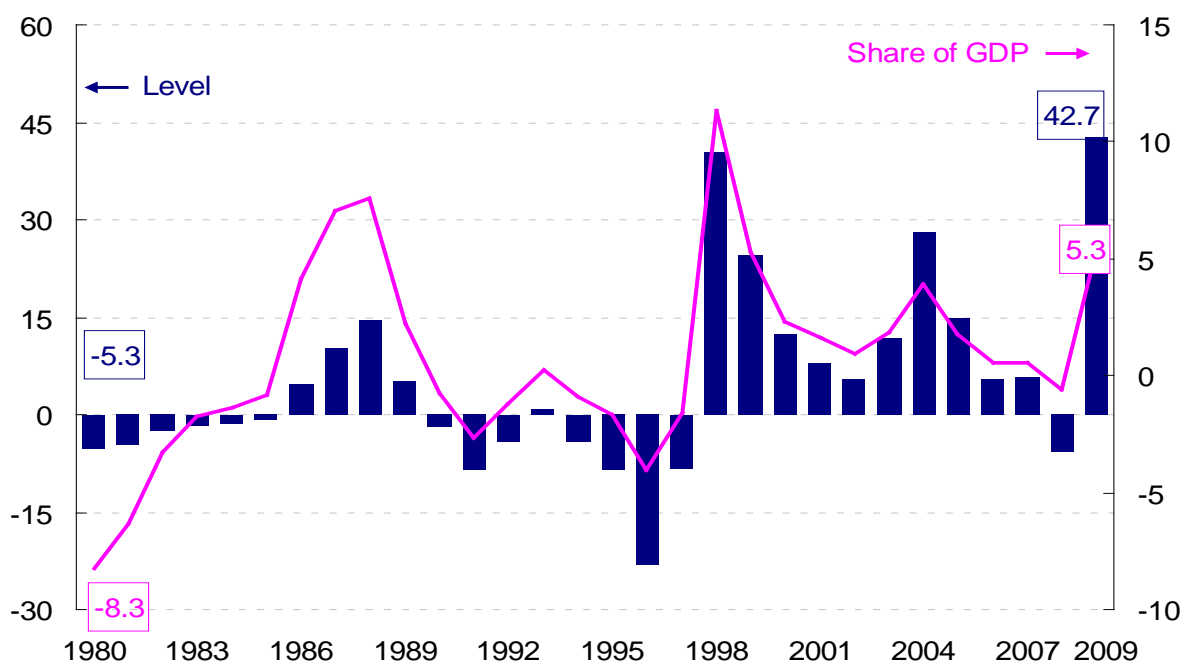
Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

Between 1998 and 2007, Korea had a current account surplus which reflected savings surpassing investment; however, this surplus began to decrease as savings declined and investment stagnated.

### 3.1 Stagnating investment

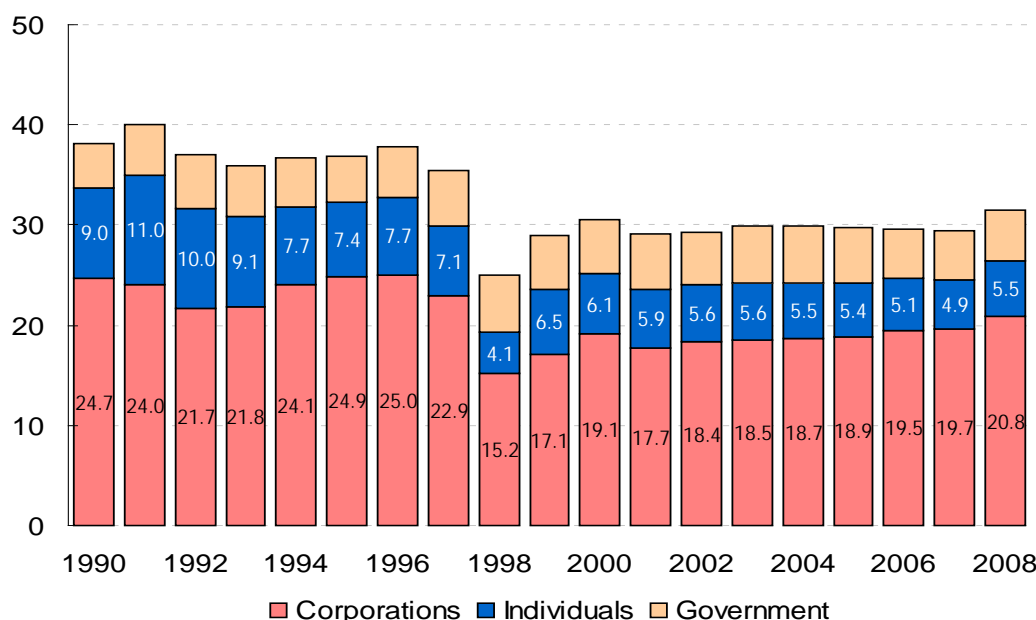
Gross investment in Korea slipped from 37.8% of GDP in 1996 to 25.0% in 1998, reflecting the harsh impact of the Asian financial crisis on the economy. In 1998, corporate investment as a share of GDP fell by nearly 10.0 percentage points from its pre-crisis rate of 25.0% (Figure 9). It continued to hover below 20.0% of GDP until 2007. By 2008, private investment had returned to pre-crisis levels, reflecting the restructuring of firms and the economy in response to the Asian financial crisis. In 2009, however, the gross investment rate fell again, as the adverse effects of the global financial crisis filtered through the economy.

**Figure 8: Current Account Balance (\$ billion and % of GDP)**



Sources: Bank of Korea; CEIC Data Company Ltd.

**Figure 9: Composition of Gross Investment (% of GDP)**



Note: 2008 private investment estimated based on distribution during the previous three years.

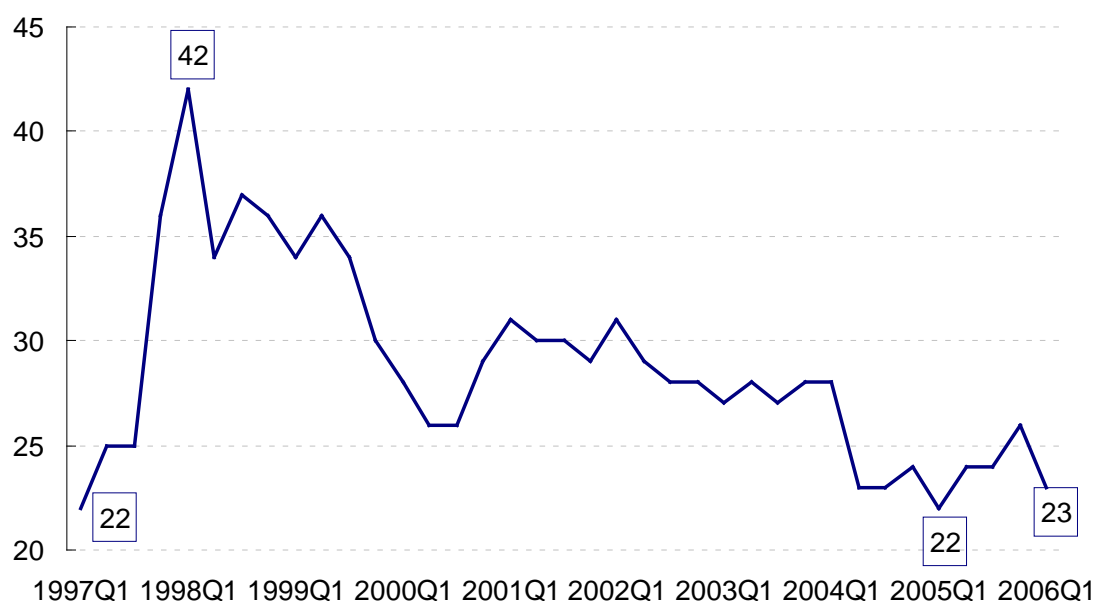
Source: CEIC Data Company Ltd.

The Asian Development Outlook 2009 (ADB 2009) has identified a number of factors which may have depressed investments after the Asian financial crisis. First, post-crisis restructuring and reform, including the working out of pre-crisis investment excesses, may have slowed down investment. Prior to the crisis, investment generally exceeded savings in Korea—a trend which was not unique to Korea. However, compared to the other crisis-

affected economies—Indonesia, Philippines, and Thailand—the gap between Korea's investment and savings rates was relatively small before 1997 (Figure 7). Therefore, the significance of pre-crisis overinvestment in Korea remains an open question.

Second, the Asian financial crisis may have heightened the risks facing regional investors, causing them to shy away from further investment in the region. Using the risk ratings of the Economist Intelligence Unit (EIU), Figure 10 shows that Korea's overall risk score increased rapidly during the Asian financial crisis, reflecting heightened risks in the country's economic policy, structure, and liquidity. By the first quarter of 2005, the overall risk score had reverted to its 1997 level; investment rates have since remained steady as risk scores have stabilized. The EIU revised its rating methodology in the second quarter of 2006, and up until the third quarter of 2008, classified Korea as low risk (minor adjustments have been made in the ratings for Korea since the end of 2008). This may have contributed to the pick up in investment in 2008, which could very well have continued had the global financial crisis not erupted.

**Figure 10: Overall Risk Score (100=high)**



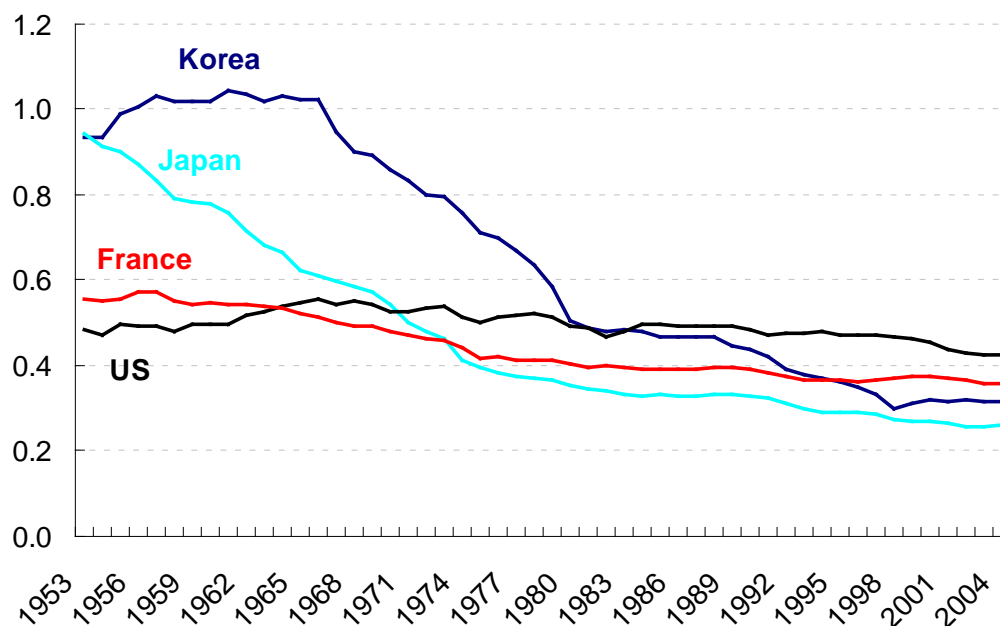
Source: EIU Country Risk.

Third, shortcomings in the investment climate may have weakened investment during the post-crisis period. While Korea's overall ranking in the World Bank Doing Business Surveys is high compared to many other Asian countries, it figures relatively low in specific areas of the survey. In particular, out of about 180 countries, Korea ranks below 50 on starting a business, employing workers, registering property, and protecting investors. This could be a valid reason for slower investment, post-crisis.

Fourth, in recent years, the capital intensity of East Asian products has declined as industry structures have shifted to more skill- and knowledge-intensive sectors, such as information technology products and services. This industry upgrading has also contributed to weaker investment demand (Lee and Mckibbin 2007).

Fifth, since the marginal product of capital has been declining, it has become difficult to guarantee a higher rate of profit for physical capital investment. Since the 1990s, Korea's average product of capital—which is proportional to the marginal product of capital if a Cobb-Douglas production function is assumed—has been lower than that of the US (Figure 11). This implies that the decline in investment is not only a short-term problem, but also a structural one that has persisted for many years.

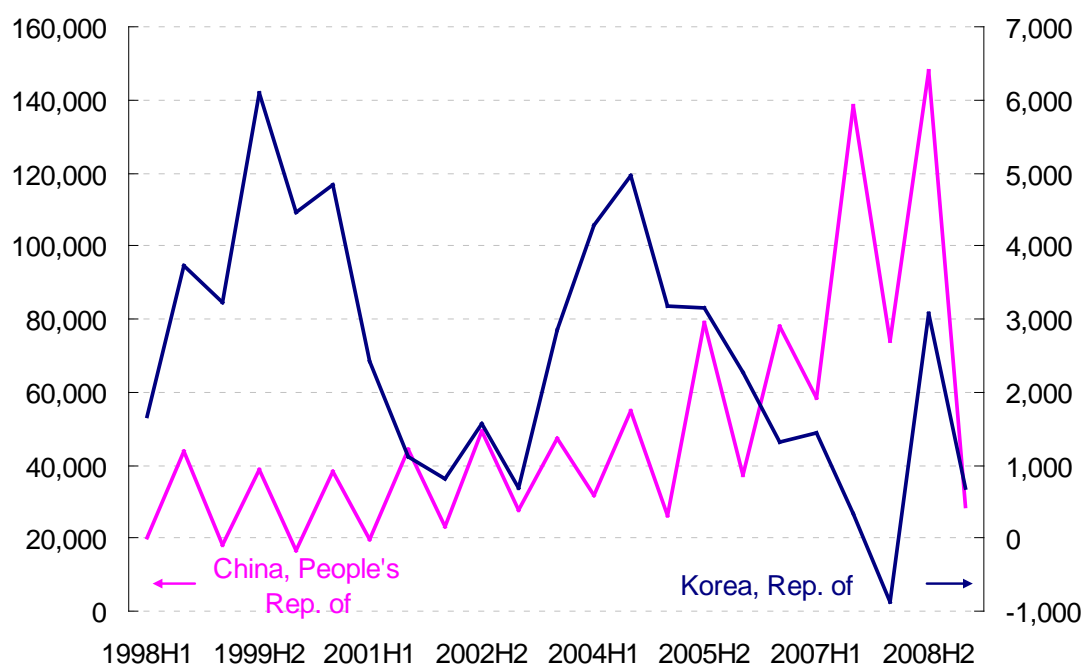


**Figure 11: Average Productivity of Physical Capital in Korea, Japan, France, and US**

Source: Authors' calculations using Penn World Table 6.2 (<http://pwt.econ.upenn.edu/>).

Sixth, increasing openness in the People's Republic of China (PRC) has made it an attractive investment destination, particularly because of its large and cheap labor force and huge market potential. This may have shifted investment away from other Asian economies, including Korea. Figure 12 shows net inflows of foreign direct investment (FDI) to Korea and the PRC since 1998. Immediately after the Asian financial crisis, net FDI flows to Korea rapidly increased until about 2000, perhaps due to the large number of mergers and acquisitions as firms consolidated in the post-crisis period. In contrast, FDI inflows to the PRC remained somewhat stable (barring seasonality factors) during the same period. Since 2006, however, net FDI inflows to Korea have slowed, while flows to the PRC have continued to grow rapidly. Nonetheless, it is possible that the FDI boom in the PRC may be unrelated to the FDI decline in Korea, given differences in the industrial structure of the two economies. Further analysis is required to determine whether the influx of FDI to the PRC is hurting FDI inflows to Korea.

**Figure 12: Net Foreign Direct Investment Flows (US\$ million)**



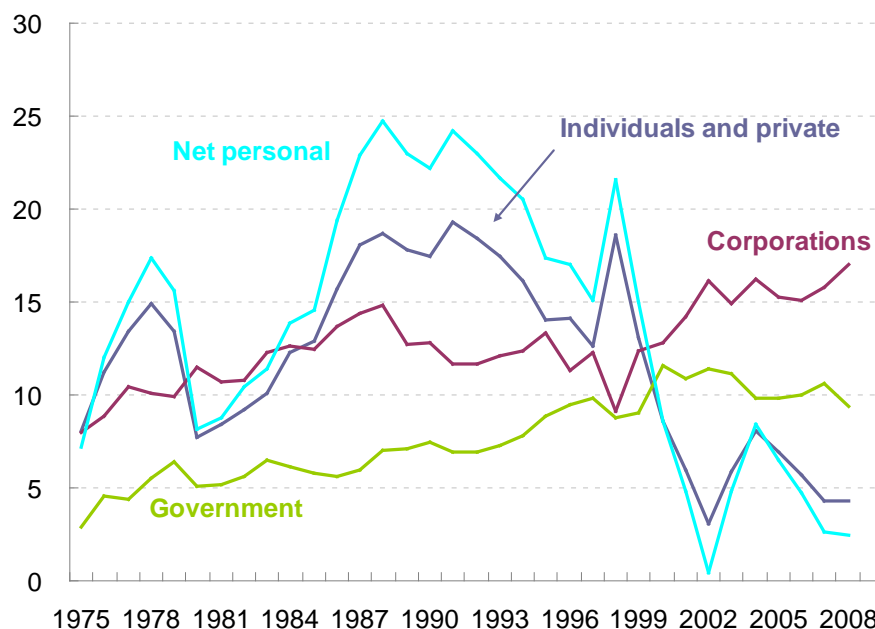
Source: CEIC Data Company Ltd.

### 3.2 Declining savings

The decline in gross investment rates has been accompanied by a similar drop in gross savings rates, which fell from 36.6% in 1998 to 30.7% in 2008 due to a dramatic decrease in personal savings. Personal savings collapsed from 18.5% of GDP in 1998, to about 5% between 2006 and 2008; the net personal savings rate<sup>5</sup> was roughly 2.5% in 2008 (Figure 13). In contrast, corporate savings rose steadily and government savings remained robust in the same period. As such, Korea’s surplus has consisted mainly of corporate and public savings.

<sup>5</sup> The net personal savings rate is the ratio between personal net saving and personal net disposable income. This excludes subsidies, taxes, social burdens and benefits, and other transfers from both gross saving and gross disposable income.

**Figure 13: Savings Rates by Sector**

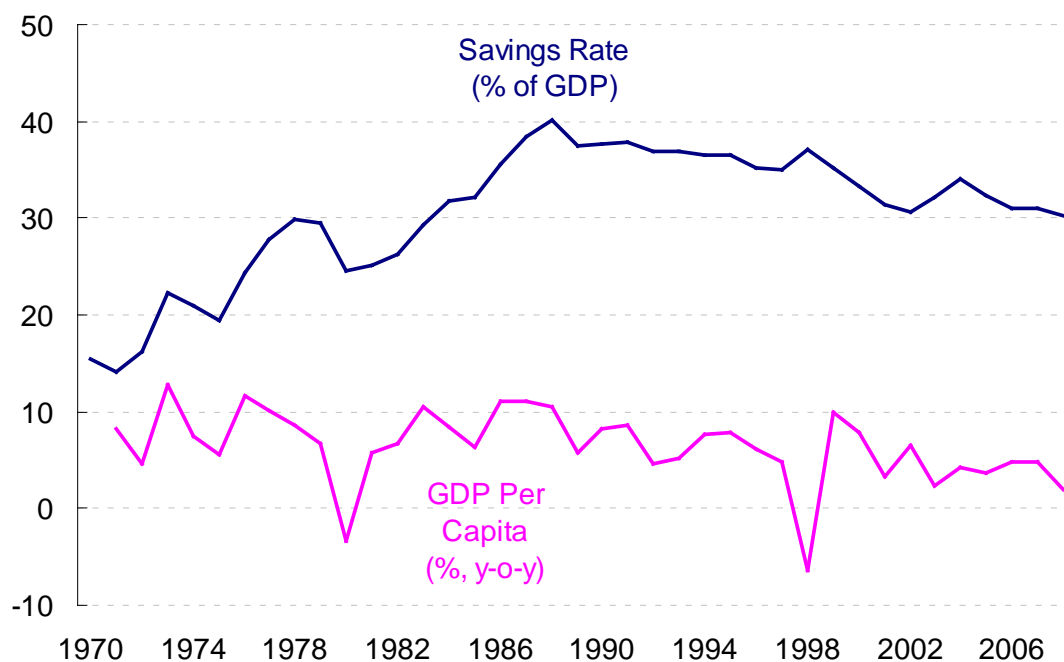


Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

This trend notwithstanding, aggregate private savings in Korea have remained durable due to a number of factors. First, rapid economic expansion and income growth in Korea has been accompanied by an increase in savings.<sup>6</sup> Figures 14 and 15 plot Korea's savings rate and per capita GDP from 1970 to 2008. Although the relationship between per capita GDP growth and savings rates is not very evident from Figure 14, Figure 15 clearly shows that the savings rate has increased along with per capita income, albeit at a decreasing rate. In fact, the savings rate has been declining slowly since 2004.

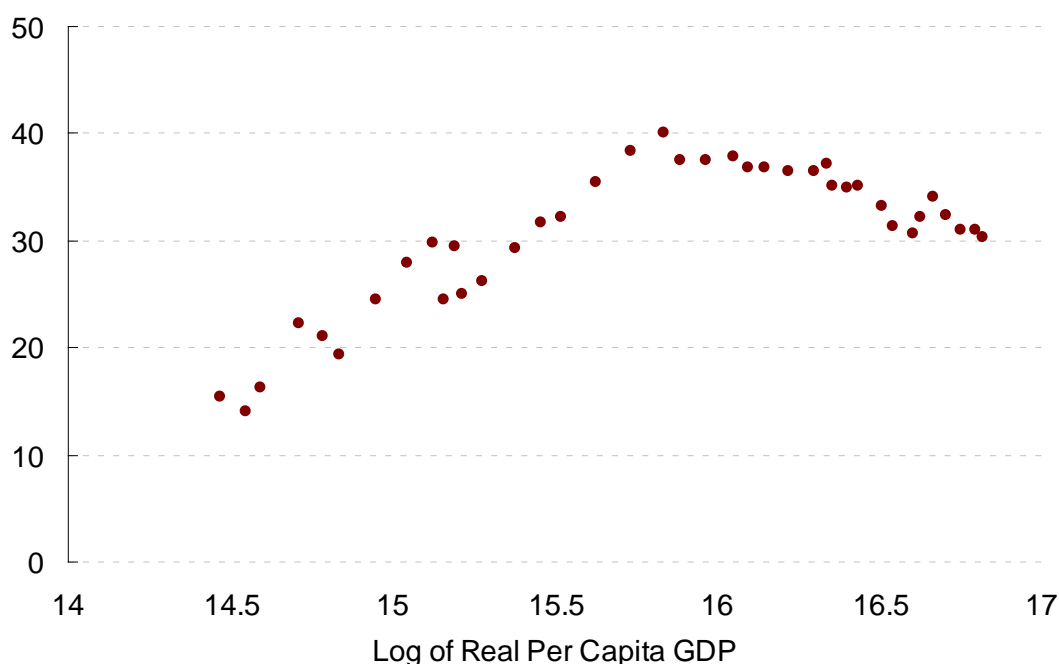
<sup>6</sup> Studies have shown that richer countries tend to save more than poorer countries, and faster-growing countries tend to save more than slower-growing countries. For example, Carroll, Overland, and Weil (2002) have shown that high growth leads to high saving in a habit formation setting where current consumption is determined by past consumption.

**Figure 14: Savings Rate and GDP per Capita (% of GDP and %, y-o-y)**



Source: CEIC Data Company Ltd.

Second, increased risk and uncertainty seem to have increased precautionary savings by firms. In the aftermath of the Asian financial crisis, Korean corporations seem to have learned the lessons of excessive leverage, consequently cutting back on spending and setting aside more funds for future use. Indeed, the leverage ratios of Korean firms have declined dramatically post-crisis. Total borrowings and bonds payable of manufacturing firms reached 50.1% of total assets in 1998; by 2008, this ratio had fallen to about 26.3% of total assets. Debt ratios (defined as the ratio of total liabilities to stockholders' equity) of manufacturing firms have also declined substantially, from over 300% to about 100% in the same period. This could explain the rising corporate savings rate.

**Figure 15: Savings Rate by per Capita GDP**

Source: Authors' calculations from CEIC Data Company Ltd.

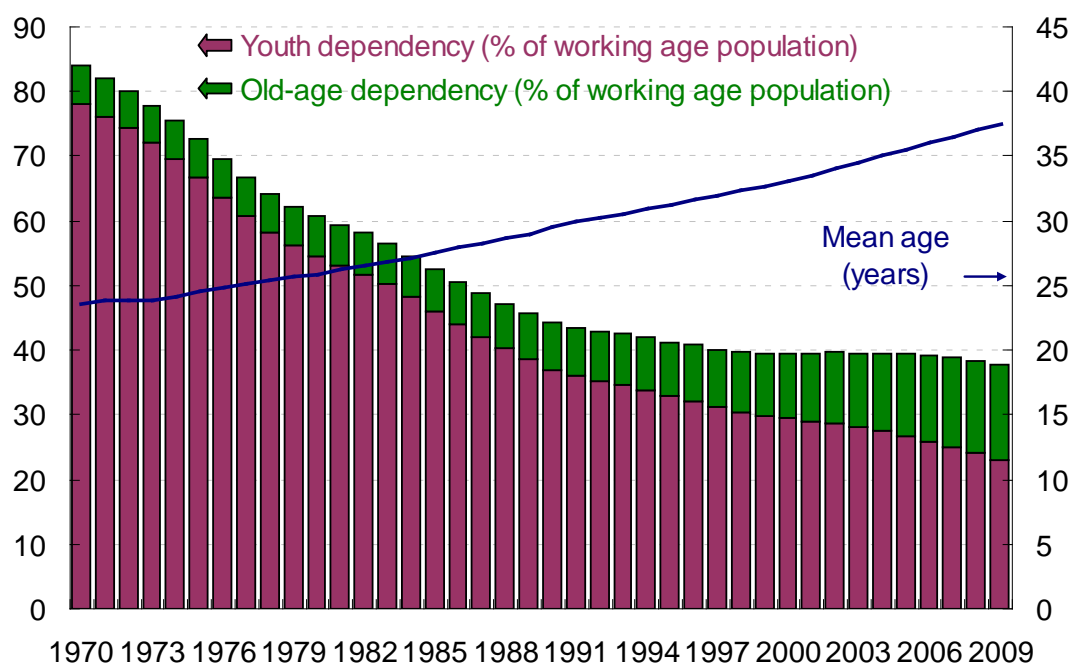
Third, demographic transition may have influenced individuals' motives to save. The life-cycle hypothesis posits that individuals save during their working years and spend their savings after retirement. A high old-age dependency ratio implies that the number of dissavers is rising relative to the number of savers, thus reducing aggregate savings. Meanwhile, a high youth dependency ratio implies that the working-age population has to support a growing number of young children, thus reducing their capacity to save. Higher dependency ratios also hurt public savings. Spending for social services for the youth and the elderly, coupled with a lower tax base due to a smaller workforce, implies a reduction in public savings. Korea's population is rapidly ageing, with the mean age at 37.5 years in 2009, up nearly 5 years over the 10-year period from 1999 (Figure 16). However, while the old-age dependency ratio has been rising, the youth dependency ratio has been declining, so that the overall dependency rate has remained relatively stable over the last 15 years. The dependency rate was constant between 1999 and 2004, but has since declined slowly. According to the life-cycle hypothesis, savings rates should rise as dependency rates fall. However, this has not been the case for Korea since 2004. This may be because the rising old-age dependency ratio has had a much larger impact on savings rates than the decreasing youth dependency ratio, as found in Kim and Lee (2007).

A fourth factor which may have influenced savings in Korea is the level of financial development, the impact of which can go both ways (ADB 2009). The traditional view suggests that more developed financial sectors induce higher savings by creating deeper and more sophisticated financial systems. The alternative view sees them reducing the precautionary motive for saving. The relationship between financial development and savings in Korea remains unclear.

Is Korea therefore saving "too much" or investing "too little"? The preceding discussion has been unable to provide strong evidence of oversaving or underinvestment. More rigorous econometric analysis is needed to categorically explain savings and investment behavior in the country. From 1998 up until 2008, Korea's savings have been higher than investment. While both the savings and investment rates have not returned to pre-crisis levels reached in 1996, investment seems to be lagging savings, suggesting ample room for a future rise in investment. Increasing investment will raise productive capacity, allowing the economy to

grow faster in succeeding periods. However, to get a clearer view of the underlying causes of Korea's external imbalances, a closer look at domestic distortions and structural problems is necessary.

**Figure 16: Demographic Trends**



Source: Korean Statistical Information Service (<http://www.kosis.kr/eng/index.html>).

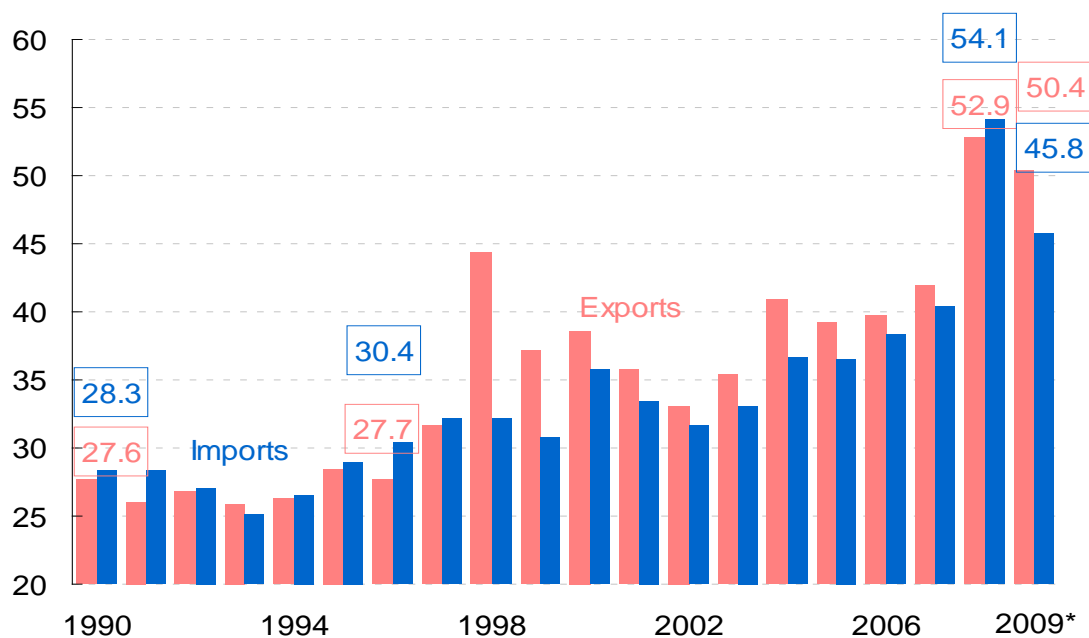
## 4. EXPORT-LED GROWTH AND EXTERNAL IMBALANCES

The roots of Korea's export orientation predate the Asian financial crisis. In the early 1960s, the country shifted its economic policy from import-substitution to export-orientation to support growth. Although the import-substitution policy was not completely abandoned, the government began providing incentives to exporting firms based on their export performance. The exposure to international export markets compelled industries to become more efficient, and spurred significantly faster economic growth.

In the early 1970s, government policy reverted to import-substitution, favoring conglomerates to build up heavy and chemical industries. This policy shifted again with a change in regime in the 1980s, following the deregulation of the trade and financial sectors. Capital account liberalization followed in the 1990s, giving firms easy access to short-term foreign debt that raised their leverage to unsustainable levels and eventually contributed to the 1997–1998 financial crisis.

As the crisis ensued, domestic demand languished, prompting even greater emphasis on export promotion. Since then, Korea has increasingly relied on external demand to drive growth. Exports accounted for 27.7% of GDP in 1996, but this share had increased rapidly to 52.9% by 2008 (Figure 17). Similarly, imports shot up from 30.4% of GDP to 54.1% during the same period. Preliminary figures for 2009 suggest that these trade shares have declined somewhat, although they remain substantial: for the first nine months of 2009, exports accounted for 50.4% of GDP, while imports amounted to 45.8%. These developments make the Korean economy even more vulnerable to the global business cycle.

**Figure 17: Exports and Imports (% of GDP)**

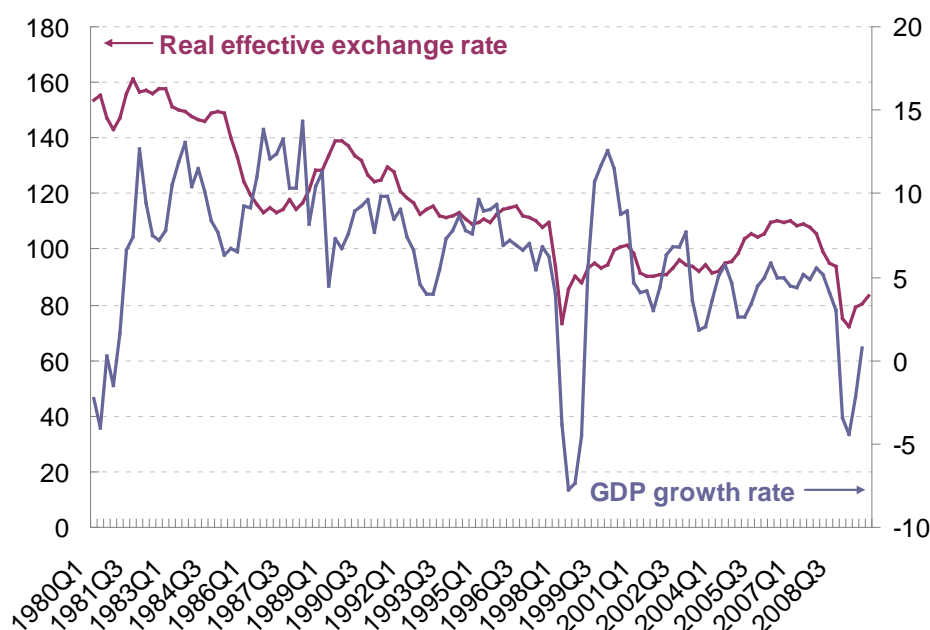


\*Data for 2009 refer to the first three quarters only.

Source: CEIC Data Company Ltd.

Increased reliance on external demand was abetted by the sharp devaluation in the won following the Asian financial crisis. From an average of W804/US\$1 in 1996, the exchange rate depreciated by 42.7% to W1,403/US\$1 in 1998. Although the won has appreciated since, it has not returned to the nominal levels registered in 1996. However, the real effective exchange rate recovered to its pre-crisis level in 2005 and surpassed this level until 2008, when the won depreciated again in the face of the global financial crisis (Figure 18).

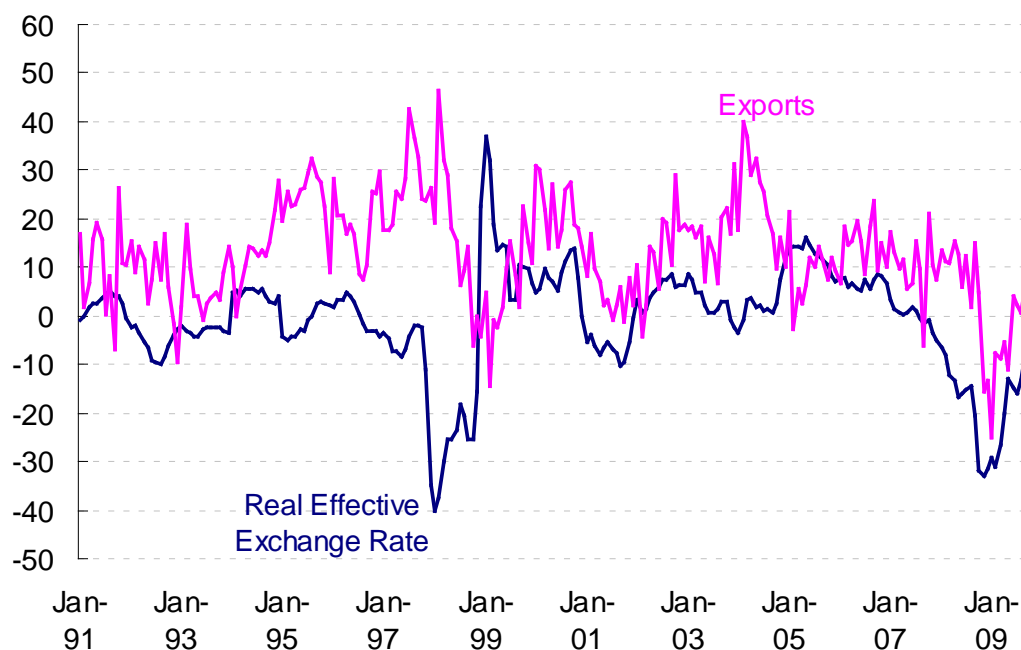
**Figure 18: Real Effective Exchange Rate and GDP Growth Rate (2005=100 & %)**



Sources: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)); Bloomberg.

The weaker won may have encouraged exports to some extent. In general, exports increase as the value of the real effective exchange rate falls (Figure 19). The empirical analysis in Section 2 confirms this relationship, although the magnitude of the impact of the exchange rate becomes unclear if the two crisis periods are excluded.

**Figure 19: Change in Exchange Rate and Exports (% , y-o-y)**



Sources: Staff calculations from DOTS; BIS (<http://www.bis.org/statistics/eer/index.htm>); CEIC Data Company Ltd.

Along with the depreciation of the won, growth in the global economy further bolstered Korean exports, allowing the accumulation of massive foreign exchange reserves. These reserves ballooned to US\$265.2 billion by the end of 2009, from just US\$32.4 billion at the end of 1996 (see Figure 2). As a proportion of GDP, Korea's foreign exchange holdings swelled from 5.7% to 32.8% during the same period.

Despite the rapid build up in foreign exchange reserves, some economists in Korea continue to argue for a further build up in reserves, to perhaps a minimum of US\$300 billion. For example, Kim, Lee, and Lim (2010) have argued that Korea's reserves should have been somewhere between US\$232.3 billion and US\$326.9 billion in March 2009, when actual reserves were only US\$206.3 billion. This thinking may reflect Korea's recent experience with the foreign exchange crisis that followed the global financial crisis. Indeed, the won depreciated by 38.8% in wake of the crisis, from around W939/US\$1 on 1 March 2008 to W1,534/US\$1 by 1 March 2009.

Massive foreign exchange reserves, however, entail some costs. A specific cost of keeping excess reserves is the forgone return from holding them in low-yielding, safe, and liquid assets such as US government bonds, rather than in higher-yielding assets (ADB 2009). While large foreign exchange holdings may help countries recover quickly from currency crises, they cannot insulate countries from such crises in the future. Moreover, the opportunity costs of holding excess foreign reserves in low-yielding, safe, and liquid assets are significant.<sup>7</sup>

Perhaps the more important issue is whether Korea should change its export-oriented growth strategy. The economy's current industry structure seems to require sustained export

<sup>7</sup> A recent study by Park (2008) estimates that the benefits of more actively managing excess reserves are greater than 1% of GDP in many Asian countries.



orientation; the semiconductor, motor vehicle, shipbuilding, electronics, and steel industries require ever-growing foreign markets. These sectors managed to expand even after the Asian financial crisis. The domestic economy's inability to fully absorb the increasing outputs of these sectors has necessitated the exploration of larger export markets. Stagnating global demand, however, cannot assure a continued market for Korea's export products. This issue takes on greater urgency in the current global environment, where recovery remains fragile, and demand from industrial countries cannot be relied on. Another key challenge is competition from the PRC's manufacturing sector, which is gradually shifting to higher value added goods that directly compete with Korea's exports.

The export sector's expansion has tended to overwhelm domestic sectors and small- and medium-sized enterprises (SMEs) in the post-Asian financial crisis period. Moreover, with the trend toward globalization, big firms in the export sector are increasingly relying on foreign intermediate goods and services to exact efficiency gains. This shift has been unfavorable to SMEs, which now face increasing global competition. The profitability of SMEs has been eroded by their weak market power.

Overall, Korea's export-oriented growth strategy allowed it to recover swiftly from the Asian crisis, and facilitated its transformation into a surplus economy, or a net capital exporter from 1998 through 2007. However, the very same strategy made the country very vulnerable to the 2008–2009 global crisis. Over-reliance on external demand made Korea susceptible to a sharp fall in the industrial countries' appetite for imported goods. As a result, Korea's economic growth began declining in the first quarter of 2008, and bottomed out in the first quarter of 2009. The large declines in Korea's exports resulted in three quarters of economic contraction that finally ended in the second quarter of 2009.

These developments highlight the need for Korea to reduce its dependence on export-driven growth. A rebalancing of the economy toward more diversified sources of growth needs to be prioritized.

## 5. INTERNAL IMBALANCES BETWEEN MANUFACTURING AND SERVICE INDUSTRIES

As noted in Section 2.3, the imbalance between the manufacturing and services sectors is reflected in the behavior of the goods and services accounts. The weakness in the services sector is also reflected in its labor productivity trends. Table 5 shows that the employment share of services has been increasing over time—from 34.3% in 1970 to 65.2% in 2005. However, services' share of value added has not been increasing at the same rate, rising from 44.29% to only 58.96% during the same period (Figure 20).<sup>8</sup> This means that the labor productivity of the services sector has been decreasing over time. An analysis by Lee (2005), has shown that while the manufacturing industry has enjoyed high productivity growth over the past few decades, Korean service industries including finance, insurance, real estate, construction, wholesale and retail trade, and restaurants and hotels sectors have had low productivity growth.<sup>9</sup>

The weakness in the services sector can be attributed to both knowledge intensive services—in particular, education and business services—and traditional services.

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<sup>8</sup> These figures are for current prices. If constant prices are used, the changes in services' share become even smaller.

<sup>9</sup> Lower productivity growth in the service sector relative to the manufacturing sector has been established since the seminal paper by Baumol (1967). Increasingly unbalanced growth across sectors induces labor force reallocation toward stagnant sectors, which might eventually slow down aggregate GDP growth. The fact that the Korean service industries have had relatively lower productivity growth is therefore not extraordinary. Nonetheless, the labor productivity growth differential between services and manufacturing has been much larger in Korea compared to other industrialized economies (see Lee 2005).

**Table 5: Employment Share of Services Industry in Korea**

	1970	1980	1990	1995	2000	2005
Services	34.3	38.6	47.7	54.8	61.2	65.2
Manufacturing	14.2	22.7	27.9	23.6	20.3	18.5
Others	51.5	38.7	24.4	21.6	18.5	16.3

Sources: OECD (<http://www.oecd.org/statsportal>) and Korean Statistical Information Service (<http://www.kosis.kr/eng/index.html>).

**Figure 20: Services and Manufacturing as a Percentage of Total Value Added (%)**

Note: Left figure is for constant prices and the right one is for current prices.

Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp))

## 5.1 Education and business services: shortage and poor quality of supply

In education and business services, which are directly reflected in current account balances, the problem lies in the shortage and poor quality of supply. Although the shares of education and business services in value added have been increasing in nominal terms, these shares have actually been declining in real terms (i.e., increases have been mainly due to rising prices). From 1995 to 2008, education's share in value added increased from 4.94% to 6.52% in current prices but decreased from 6.97% to 5.80% in constant prices. Business services give a similar picture: value added in current prices increased from 3.98% to 5.42%, but decreased from 4.97% to 4.87% in constant prices during the same period.

Korea's education problem is very complicated, and goes beyond the scope of this paper. However, the huge number of Koreans studying abroad suggests that Korea's education services cannot meet domestic demand. Korean students comprise the bulk of overseas students in the US (127,185 students in 2008, or 14.8% of the total), Canada (27,549 students in 2005, or 15.4% of the total), and PRC (80,000 students). The story is similar in Australia, Japan, New Zealand, and the United Kingdom. Given the size of Korea's population—about 50 million—these levels are rather surprising, and it is not difficult to guess how much money goes to these overseas students.

The supply of business services has likewise been insufficient. In terms of value added, business services comprised only 5.6% of GDP in 2005, compared to 11.5% in the US, and 7.7% in Japan. Employment in business services gives a similar picture: 6.8% of workers are in Korea's business services sector, compared to 11.7% in the US and 10.5% in Japan.

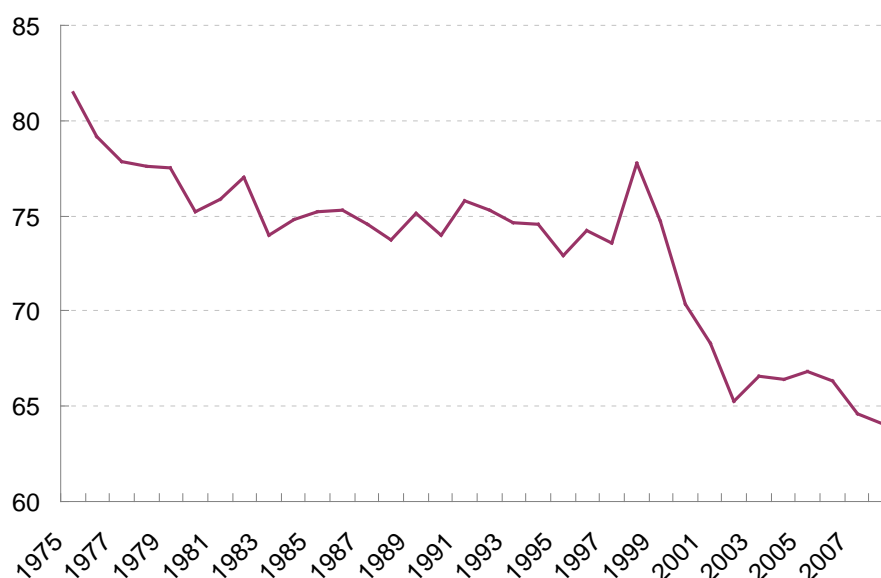
## 5.2 Traditional services: shortage of demand

While the supply of traditional services is more than sufficient, labor productivity is relatively low. The productivity of the wholesale and retail trade, restaurants and hotels sectors was only 22% of producer services in 2003. The productivity of social and personal services was also very low, amounting to only 43% of producer services. This is due to too much supply and too little demand.

The excess supply of traditional services arose from efforts to restructure the economy after the financial crisis. Most of the workers who were laid off shifted to the services industry, opening small restaurants and laundry shops, or becoming taxi drivers. For example, the employment share of restaurants and hotels sector increased from 9.46% in 1995 to 10.6% in 2008, while its share in value added (in current prices) decreased from 2.65% to 2.39%.

Meanwhile, the shortage of demand for traditional services has a lot to do with the declining income share of households. The share of households and private unincorporated enterprises in national income fell from 74.20% in 1996 to 64.09% in 2008 (Figure 21). This drop of about 10 percentage points in household income has eroded the most important basis for domestic consumption.

**Figure 21: Households and Private Unincorporated Enterprises  
(share in national income)**



Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

## 6. POLICY AGENDA: REBALANCING GROWTH

The preceding discussions have highlighted the internal factors that influence Korea's external imbalances. However, the degree of influence varies across the different factors. In terms of the saving-investment imbalance, evidence of either underinvestment or oversaving remains inconclusive; the lower savings and investment rates may even be the new

equilibrium levels based on the economy's fundamentals and income level. What is certain is that the declining gap between savings and investment contributed to the narrowing of Korea's current account imbalances, prior to the global financial crisis of 2008.

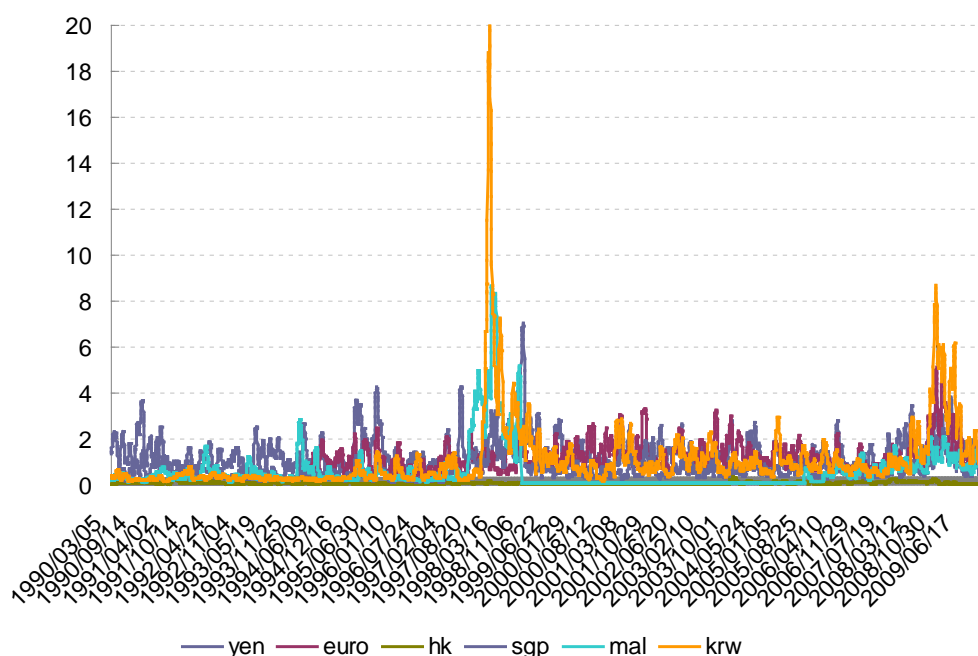
The adoption of export-oriented policies does not seem to have strongly influenced Korea's external imbalances, since the exchange rate is flexible and adjusts to prevailing market conditions. Nevertheless, export-promotion policies have created domestic distortions. In particular, export-promotion policies have encouraged more investment in manufacturing relative to services, creating an imbalance between the two sectors. Productivity and the quality and quantity of investment in services are low. As a result, Korea is heavily reliant on services imports.

Given these challenges, what policy measures should Korea adopt to ensure balanced and sustained growth for its economy?

### 6.1 The potential role of the exchange rate

Korea's external imbalance does not seem to be persistent. An artificial adjustment in the exchange rate may not be necessary, since the exchange rate is fairly flexible (Figure 22) and is likely to remain so, given that the government has not intervened to influence the exchange rate since the Asian financial crisis. Although some policymakers may want to manipulate the value of the won, such efforts are bound to fail since Korea's capital market is almost perfectly open to foreign investors.

**Figure 22: Volatility of the Value of Currencies**  
(standard deviation/mean; 30-day window, %)

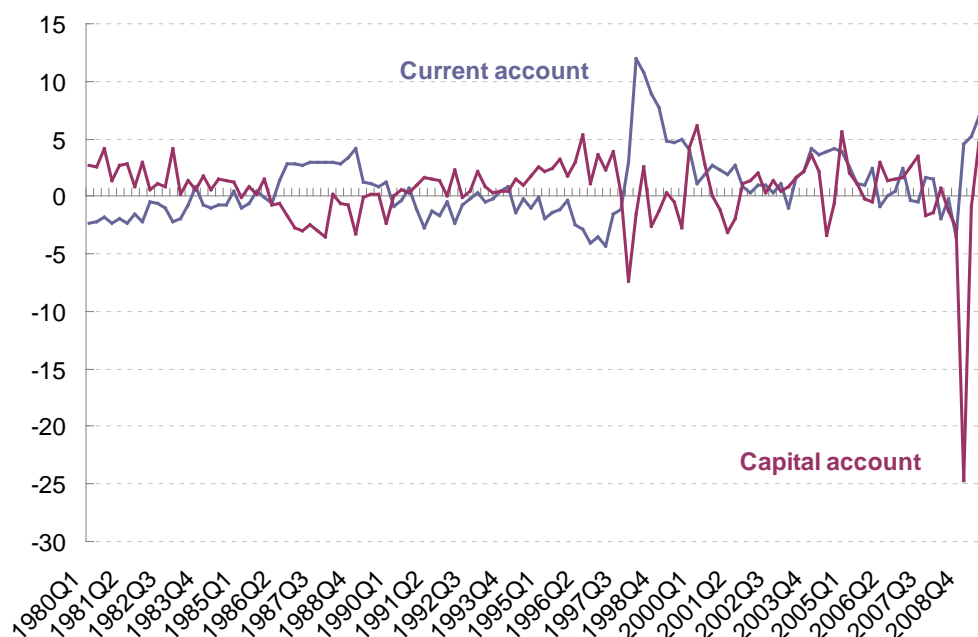


Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

Figure 23 shows a marked shift in Korea's capital account after the Asian financial crisis. On occasion, the capital account has tended to move together with the current account. This movement amplifies the behavior of exchange rates: when the exchange rate depreciates, it tends to go too far, and when it appreciates, it tends to move too fast. Moreover, the sheer magnitude of the capital account imbalance sometimes increases the volatility of the exchange rate. For example, in the fourth quarter of 2008, the capital account deficit reached about 25% of GDP, leading to a rapid depreciation in the won.

Under the current circumstances, manipulating the won is virtually impossible. The results of the empirical analyses have further shown that the effect of exchange rates on net exports is limited. In addition, the real exchange rate that decides the current account balance is an endogenously-determined relative price that adjusts to clear markets in response to shocks (Eichengreen 2010).

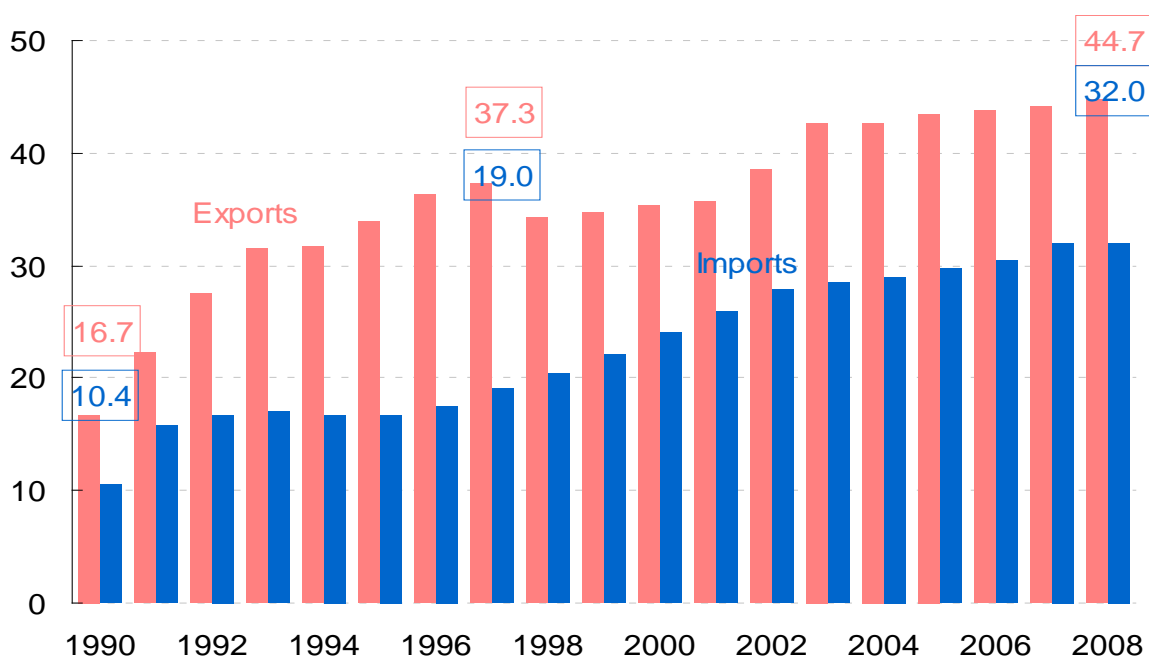
**Figure 23: Current Account and Capital Account Balance (% of GDP)**



Source: Bank of Korea Economic Statistics System ([http://ecos.bok.or.kr/EIndex\\_en.jsp](http://ecos.bok.or.kr/EIndex_en.jsp)).

## 6.2 Intra-regional integration

Korea must enhance its resilience to external shocks by broadening the scope and structure of its openness, and fostering intra-regional trade, investment, and financial transactions. Fostering trade within the region will be necessary to reduce over-reliance on extra-regional demand. Although Korea's trade with the rest of developing Asia has been rising, its share in total trade has increased at a relatively slower pace in recent years (Figure 24). Between 1990 and 1997, Korea's exports to the rest of the region more than doubled, increasing from 16.7% to 37.3% of total exports. By 2008, however, intra-regional exports had risen to just 44.7% of total exports. The slight uptick registered in the first half of 2009, to 46.7% of total exports, may just be a temporary effect of the global financial crisis.

**Figure 24: Intra-regional Trade (% of total trade)**

Sources: IMF, Direction of Trade Statistics; CEIC Data Company Ltd.

Strengthening intra-regional relationships can be mutually advantageous to Korea and its neighbors. Asia has a large savings pool that can be tapped for intra-regional investment. Considering that its investment has been stagnating, Korea could benefit from the increased availability of funding sources. The flipside of this is that Korea would also have wider options for investment.

### 6.3 Fostering service sector productivity and domestic demand

Corporate savings have been rising in Korea. Reducing corporate savings and raising the corporate investment rate, particularly in the services industry, may help reduce internal imbalances if these foster restructuring within the services sector and raise the sector's productivity. Although the services sector's share in the total economy has been gradually diminishing in real terms, it still remains the largest sector in the economy.

Nevertheless, the country remains heavily reliant on services imports. Since records started in 1980, surpluses in the services account have only been recorded during 1982–1989, and in 1998. Business services other than transportation and financial services account for the bulk of the deficits in the last few years.

Korea needs to further develop its services sector in order to shift to a domestically-supported growth strategy. This issue is more complex than it seems, since the low productivity of the services industry is closely related to massive hidden unemployment created by economic restructuring after the Asian financial crisis. Moreover, raising the demand for traditional services will require improvements in the share of household income. Since 88% of workers were employed by SMEs as of 2005, promoting investment in SMEs will be critical.

In order to raise investment rates, the productivity of investment will have to be improved. Raising the productivity of SME investment, particularly in the services industry where about 70% of workers are employed, will be important to rebalancing the Korean economy both internally and externally. This will require a reduction in widespread entry barriers in knowledge services, and reforms to address the inefficient structure of traditional services. Investments in knowledge services such as education and business services should focus more on how to cope with growing global competition, while investments in traditional

services should focus primarily on industry restructuring, as well as reallocating excess workers to productive sectors.

The emergence of a large and rapidly growing urban middle class will be crucial to increase domestic demand. The expansion of the middle class will hinge on the dynamism of enterprises, especially SMEs. Increasing investment by SMEs will help reduce the internal imbalance between savings and investment.

Further improvements in the investment climate are necessary to encourage greater investment and boost domestic demand. The upgrade in Korea's Doing Business (World Bank 2010) ranking for 2010 is largely due to improvements in business startup procedures. Specifically, the number of procedures and number of days required to start a business have been reduced. The minimum capital requirement and cost of starting a business have likewise been cut. The effects of these changes are expected to positively affect investment in the near-term.

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