

# *International Payments Imbalances of the East Asian Developing Economies*

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The recent economic performance of the East Asian economies ranks among the most remarkable in world history. For the past 15 years, the four Asian newly industrializing economies (South Korea, Taiwan, Singapore, and Hong Kong), have each averaged output growth of more than 7 percent per year, and per capita output growth of more than 6 percent per year. The growth in the major ASEAN countries (Malaysia, Thailand, Indonesia, and the Philippines), with the conspicuous exception of the Philippines, has been almost as remarkable, with growth above 5.5 percent per year. The performance of the East Asian economies is all the more spectacular in comparison with the developing countries of Latin America and Africa, where the past decade has been one of deep crisis and a decline of living standards. A comparison of growth rates in East Asia and Latin America is shown in table 1.

The extent of social and economic transformation in East Asia in the past couple of decades is overwhelming. Consider the case of Korea, for example. In 1960, Korea had a per capita income of \$157 (\$610 in 1988 dollars), and total merchandise exports of \$33 million. By 1988, per capita income stood at about \$3300, with exports of \$51 billion, making Korea the tenth largest merchandise exporter in the world. In 1960, over 70 percent of the Korean population lived in the rural sector, and 58 percent of the work force was in agriculture. In less than 30 years, the rural population has declined to only 35 percent of the total, and agriculture now accounts for an estimated 30 percent of the work force.

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Table 1  
Comparative Income Statistics for the Asian Newly Industrializing Economies  
and Latin America  
Percent

Country	Period	Average Annual Growth of Real GDP (1980 prices)	Average Annual Growth of Real Per Capita GDP
Korea	1965-80	9.5	6.4
	1980-86	8.2	5.1
Taiwan	1965-80	9.1	7.2
	1980-86	10.7	9.3
Singapore	1965-80	10.4	8.8
	1980-86	5.3	4.2
Hong Kong	1965-80	8.5	6.4
	1980-86	6.0	4.8
Indonesia	1965-80	7.9	5.6
	1980-86	3.4	1.2
Thailand	1965-80	7.4	4.7
	1980-86	4.8	2.8
Malaysia	1965-80	7.4	4.9
	1980-86	4.8	2.1
Philippines	1965-80	5.9	3.0
	1980-86	-1.0	-3.5
Argentina	1965-80	3.4	1.8
	1980-86	-8	-2.4
Brazil	1965-80	9.0	6.6
	1980-86	2.7	.5
Chile	1965-80	1.9	.1
	1980-86	0	-1.7
Mexico	1965-80	6.5	3.4
	1980-86	.4	-1.8

Source: IMF, *International Financial Statistics, The Statistical Yearbook of the R.O.C.*, 1987, and the World Bank, *World Development Report*.

In addition to the high average growth, the East Asian countries (again, the Philippines excepted) have shown an amazing ability to shrug off the external shocks of the 1980s. Korea started the decade with a deep recession and in 1982 had a debt-GNP ratio that was higher than Brazil's.<sup>1</sup> It is ending the decade with booming growth (13 percent in 1988), stable prices, a current account surplus of \$12 billion, and most remarkably, the likelihood of becoming a net *creditor* government by the end of 1989 or early 1990! Similarly, Taiwan and Hong Kong have maintained rapid growth and large trade surpluses in recent years. Even

<sup>1</sup> According to the *World Debt Tables* of the World Bank, 1987-88 edition, the end-1982 total debt was 54.4 percent of GNP in Korea and 36.1 percent of GNP in Brazil.

the commodity exporters in the region, Thailand, Malaysia, and Indonesia, which suffered large terms of trade declines in the 1980s, have escaped the shocks of the 1980s without an external debt crisis, with their creditworthiness intact, and with sustained growth and price stability.

Ironically, while East Asia has escaped the debt crisis that has crippled Latin America, it is now facing a potential "credit crisis," especially in its economic relations with the United States. In the view of the U.S. government in the past couple of years, the successful adjustments of the East Asian countries have been too successful. The large trade surpluses in East Asia are now seen as a major source of America's large trade deficits. These surpluses, and their rapid increase in recent years, may be seen in table 2. As can be seen by the comparison with Latin America, the East Asian trade surpluses have emerged through a surge in exports, while the Latin American surpluses have been achieved by a compression of imports. In October 1988, the U.S. Treasury charged that Korea and Taiwan were artificially manipulating their exchange rates in order to gain an unfair trade advantage (presumably vis-à-vis the United States), thereby hindering the U.S. adjustment process.<sup>2</sup>

Whereas the U.S. government now urges real exchange rate depreciations and fiscal austerity in Latin America, it is urging real exchange rate appreciations and fiscal expansion in East Asia, as a way to reduce the large trade surpluses of the region. The U.S. government has also charged that discriminatory trade policies, including merchandise import quotas, violations of intellectual property rights, and protectionist policies regarding international trade in financial services, have contributed unfairly to the successes of the East Asian economies.

The goal of this paper is to put the East Asian economic performance into an international and historical perspective, and to better understand the role of economic policies in the outstanding economic performance of the countries in the region. Since so much policy attention is now focussed on Korea and Taiwan, where the trade surpluses are largest, we also pay special attention to these cases. In order to explore the policy options open to Korea and Taiwan for moderating their trade surpluses, we introduce a global simulation model (still in the developmental stage) to give an idea of the quantitative aspects of macroeconomic interdependence between the four Asian newly industrializing economies (ANIEs) and the U.S. economy.

In the next section, we review some of the key structural factors in East Asia's exceptional macroeconomic performance, and then illustrate

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<sup>2</sup> The charges are spelled out in U.S. Treasury Department, "Report to the Congress on International Economic and Exchange Rate Policy," October 15, 1988.

Table 2  
Trade Balance Data for the Asian NIEs and Selected Latin American Countries,  
1980–87  
Billions of U.S. Dollars

	1980	1981	1982	1983	1984	1985	1986	1987
<u>Korea</u>								
Exports	17.5	21.3	21.9	24.4	29.2	30.3	34.7	47.3
(as % GNP)	28.0	30.8	30.2	31.1	34.2	34.9	35.3	39.0
Imports	20.4	24.4	22.7	24.6	28.8	29.5	29.9	38.8
(as % GNP)	32.7	35.4	31.3	31.3	33.7	34.0	30.4	32.0
Trade Balance	-2.9	-3.2	-.8	-.2	.4	.8	4.8	8.4
(as % GNP)	-4.6	-4.6	-1.1	-.2	.5	.9	4.9	7.0
<u>Taiwan</u>								
Exports	21.6	24.6	23.9	27.4	32.8	33.1	43.9	58.9
(as % GNP)	52.9	52.2	50.6	54.0	57.6	56.1	60.6	60.7
Imports	22.1	23.6	21.4	22.8	26.2	24.5	28.8	40.3
(as % GNP)	54.1	50.1	45.4	45.0	46.0	41.7	39.8	41.5
Trade Balance	-.5	1.0	2.5	4.6	6.6	8.5	15.1	18.6
(as % GNP)	-1.2	2.1	5.3	9.0	11.6	14.5	10.8	19.2
<u>Singapore</u>								
Exports	19.4	21.0	20.8	21.8	24.1	22.8	22.5	28.6
(as % GNP)	165.2	151.0	136.1	125.6	128.2	128.9	128.4	143.9
Imports	22.6	26.1	26.5	26.6	27.0	24.8	24.1	30.6
(as % GNP)	193.2	187.8	173.4	152.8	144.0	140.1	137.3	154.0
Trade Balance	-3.3	-5.1	-5.7	-4.7	-3.0	-2.0	-1.6	-2.0
(as % GNP)	-28.0	-36.8	-37.2	-27.1	-15.8	-11.2	-8.9	-10.2
<u>Hong Kong</u>								
Exports	24.2	26.7	26.0	27.2	33.9	36.1	42.3	48.5
(as % GNP)	87.8	90.5	84.8	95.2	106.7	107.6	110.1	104.9
Imports	25.5	28.4	27.1	27.8	32.6	34.2	40.6	43.6
(as % GNP)	92.4	96.1	88.4	97.2	102.5	101.9	105.6	94.4
Trade Balance	-1.3	-1.7	-1.1	-.6	1.3	1.9	1.8	4.9
(as % GNP)	-4.6	-5.6	-3.6	-2.0	4.2	5.7	4.6	10.5
<u>Indonesia</u>								
Exports	34.9	35.2	33.7	23.3	21.3	16.7	11.6	na
(as % GNP)	48.2	38.3	35.7	28.7	25.2	19.7	15.4	na
Imports	15.4	18.8	22.8	16.1	12.1	8.2	7.5	na
(as % GNP)	21.3	20.4	24.1	19.8	14.2	9.7	9.9	na
Trade Balance	19.5	16.5	10.9	7.2	9.3	8.5	4.1	na
(as % GNP)	26.9	17.9	11.6	8.9	10.9	10.0	5.4	na

Table 2 (continued)  
 Trade Balance Data for the Asian NIEs and Selected Latin American Countries,  
 1980-87  
 Billions of U.S. Dollars

	1980	1981	1982	1983	1984	1985	1986	1987
<u>Thailand</u>								
Exports	6.5	7.0	6.9	6.4	7.4	7.1	8.8	11.7
(as % GNP)	19.4	19.5	18.9	15.8	17.7	18.6	21.1	24.9
Imports	8.3	8.9	7.7	9.3	9.3	8.3	8.3	11.7
(as % GNP)	24.8	24.8	21.0	23.0	22.3	21.8	19.8	24.8
Trade Balance	-1.8	-1.9	-.8	-2.9	-1.9	-1.2	.5	0
(as % GNP)	-5.3	-5.4	-2.1	-7.2	-4.6	-3.2	1.2	.1
<u>Malaysia</u>								
Exports	12.9	11.8	12.0	14.1	16.5	15.4	13.9	17.7
(as % GNP)	52.8	47.1	44.9	47.1	48.6	49.4	49.9	59.2
Imports	9.7	10.4	11.3	12.0	12.7	11.2	9.8	11.8
(as % GNP)	39.7	41.7	42.0	40.0	37.4	35.7	35.3	39.5
Trade Balance	3.2	1.3	.8	2.1	3.8	4.3	4.1	5.9
(as % GNP)	13.2	5.4	2.9	7.1	11.2	13.7	14.6	19.7
<u>Philippines</u>								
Exports	5.7	5.6	5.0	4.9	5.3	4.6	4.8	5.7
(as % GNP)	16.3	14.6	12.5	14.2	16.3	13.9	15.4	16.3
Imports	7.7	7.9	7.7	7.5	5.9	5.0	4.9	6.7
(as % GNP)	21.9	20.6	19.2	21.7	18.4	15.2	15.9	19.5
Trade Balance	-2.0	-2.3	-2.7	-2.6	-.7	-.4	-.1	-1.1
(as % GNP)	-5.6	-5.9	-6.8	-7.4	-2.0	-1.3	-.5	-3.1
<u>Argentina<sup>a</sup></u>								
Exports	8.0	9.1	7.6	7.8	8.1	8.4	6.9	6.4
(as % GNP)	5.1	7.3	13.4	12.1	10.4	12.8	8.7	na
Imports	9.4	8.4	4.9	4.1	4.1	3.5	4.4	5.4
(as % GNP)	6.0	6.8	8.5	6.4	5.4	5.3	5.5	na
Trade Balance	-1.4	.7	2.7	3.7	4.0	4.9	2.5	1.0
(as % GNP)	-.9	.5	4.9	5.7	5.0	7.5	3.2	na
<u>Brazil</u>								
Exports	20.1	23.3	20.2	21.9	27.0	25.6	22.3	26.2
(as % GNP)	8.0	8.5	7.5	10.8	12.9	11.3	8.3	na
Imports	23.0	22.1	19.4	15.4	13.9	13.2	14.0	15.1
(as % GNP)	9.1	8.0	7.3	7.6	6.6	5.8	5.2	na
Trade Balance	-2.9	1.2	.8	6.5	13.1	12.4	8.3	11.1
(as % GNP)	-1.1	.5	.2	3.2	6.3	5.5	3.1	na

Table 2 (continued)  
Trade Balance Data for the Asian NIEs and Selected Latin American Countries,  
1980–87  
Billions of U.S. Dollars

	1980	1981	1982	1983	1984	1985	1986	1987
<u>Chile</u>								
Exports	4.7	3.9	3.7	3.8	3.7	3.8	4.2	5.1
(as % GNP)	16.9	12.0	15.2	19.4	19.1	23.9	25.0	na
Imports	4.5	5.6	3.1	2.5	2.8	2.4	2.6	3.4
(as % GNP)	16.4	17.3	12.8	12.4	14.8	15.3	15.4	na
Trade Balance	.2	-1.7	.6	1.3	.9	1.4	1.6	1.8
(as % GNP)	.5	-5.3	2.4	7.0	4.3	8.6	9.6	na
<u>Mexico</u>								
Exports	16.1	19.9	21.2	22.3	24.2	21.7	16.0	20.7
(as % GNP)	8.4	8.2	13.1	15.4	14.2	12.5	13.0	na
Imports	18.9	24.0	14.4	8.6	11.3	13.2	11.4	12.2
(as % GNP)	10.5	10.0	8.2	5.7	7.0	7.9	9.3	na
Trade Balance	-2.8	-4.1	6.8	13.7	12.9	8.5	4.6	8.5
(as % GNP)	-2.1	-1.8	4.9	9.7	7.2	4.6	3.7	na

<sup>a</sup> GNP shares based on converting \$US trade values into Australes at the period average implicit rate to market rate (rf).

Source: IMF, *Direction of Trade Statistics, International Financial Statistics* and the national accounts of various countries.

the importance of these factors in a comparison of Korea's economic success and Brazil's economic failure in the 1980s. Then, we look more in depth at the balance of payments performance of the East Asian economies in the 1980s, with a special focus on Korea and Taiwan. We go on to examine some of the policy options open to these economies using a global simulation model that we introduce in this paper (the model is described in a brief Appendix at the end of the paper).<sup>3</sup> Finally, we offer some concluding observations and thoughts about future research.

### *Successful Economic Adjustment in the East Asian Economies*

The ANIEs and the ASEAN countries have had several interrelated successes in macroeconomic adjustment in the past two decades: rapid GNP growth, low inflation, rising per capita income levels, and an

<sup>3</sup> A more detailed description of the model is available in Sundberg (1989).

avoidance of the debt crisis of the 1980s. Although performance of the ANIEs is the more exceptional in absolute terms, performance of the ASEAN countries is perhaps more remarkable in that they suffered more severely from the commodity price declines of the 1980s, and faced the difficulties of the 1980s with much lower per capita income levels than in the ANIEs.

The experiences of these countries are not, of course, without blemishes. Indonesia faced a serious external financial crisis in 1975 after the overborrowing of the huge state enterprise Pertamina. Korea came close to a debt crisis in the early 1980s, as did Malaysia during 1982–85. Today, Indonesia still skates perilously close to a debt rescheduling, especially since the fall of oil prices and the appreciation of the yen, which has pushed up the burden of Indonesia's yen-denominated foreign debt in terms of domestic output. Even high-flying Singapore suffered a decline in aggregate GNP in 1985. And, of course, one country in the region, the Philippines, succumbed to a deep financial and economic crisis in the 1980s.

Nevertheless, the most striking fact is the consistency of economic successes. That consistency has by now generated an enormous literature accounting for the success and speculating on how it may be transferred to other developing countries. This literature is far too vast to treat in detail in this paper, and to do so would take us rather far afield from our main task, which is to analyze the current balance of payments situation of these countries.<sup>4</sup> Nevertheless, it is worthwhile for our later discussion to understand what are, and what are not, the major factors that have brought the East Asian economies to their current situation.

To some extent, the East Asian successes are a kind of Rorschach test for economists: the causes of the region's success are sufficiently complex that each economist can see his favorite hypothesis in the record. Milton Friedman, for example, has declared that the region is a triumph of *laissez-faire*, while most political scientists and many economists see Korea, Taiwan, and Singapore as the triumph, instead, of highly intrusive but highly effective governments that have taken a

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<sup>4</sup> For an up-to-date, outstanding collection of survey articles, see "Why Does Overcrowded, Resource-poor East Asia Succeed—Lessons for the LDCs?," a special supplement issue of *Economic Development and Cultural Change*, vol. 36, no. 3, Supplement, April 1988. Other attempts at synthesis include the excellent book by Oshima (1987), the NBER Conference Volume edited by Bradford and Branson (1987), and articles by Sachs (1985) and (1987), and Krueger (1985) among many others. Sachs (1989) contains a series of essays by various authors on country experiences in East Asia and Latin America in the period of the debt crisis, and offers insights into why Latin America succumbed to crisis while East Asia did not. A recent survey of issues by James, Naya, and Meier (1987) also offers a solid discussion and an extensive bibliography.

strong hand in guiding development.<sup>5</sup> Even the Prime Minister of Singapore since its independence, Dr. Lee Kuan Yew, describes Singapore as a case of "socialism that works."

Adding to the complexity, the economies in the region differ markedly among themselves in their historical, cultural, social, and economic characteristics, as well as in the strategy of development pursued by the governments. Korea, for example, has followed a development strategy modelled in important ways after the Japanese example, with heavy government involvement in foreign trade, a strategy of infant-industry protection, a reliance on large enterprises, and a resistance to foreign direct investment in strategic sectors. Hong Kong, on the other hand, has come as close as any economy to practicing free international trade, with virtually no trade barriers and free access of foreign firms to direct investment in Hong Kong.

Given these complexities, it is a bit hazardous to commit to particular explanations of the region's successes. Nonetheless, there are certain factors that seem to be common to the various countries in the region. At the same time, enough evidence exists to allow us to reject many of the most common hypotheses about the economic performance of the region. We will proceed by describing some of the explanations that we view as most convincing, and then proceed to mention and cast doubt on some of the other common ideas about the region.

### *Factors Contributing to the Macroeconomic Success of East Asia*

*High and rising savings rates.* At the core of the high growth in the region is the high rate of savings, which finances an extraordinarily high rate of capital formation. The high rate of capital formation adds directly to the growth of per capita income through capital deepening, and indirectly through a high rate of technical change embodied in the

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<sup>5</sup> Friedman has written, for example, "Every successful country [Taiwan, South Korea, Singapore, Hong Kong, Japan] has relied primarily on private enterprise and free markets to achieve economic development. Every country in trouble has relied primarily on government to guide and direct its economic development" (" 'No' to More Money for the IMF," *Newsweek*, November 14, 1983, p. 96). Friedman's vision of laissez-faire as the key to East Asia's triumphs brings to mind a story that Friedman himself told, at a conference several years ago, of a man who is examined by a psychiatrist. The doctor shows the man a picture with two vertical lines and asks the patient to describe the picture. The man responds that the picture shows two people, standing up and making love. Then the doctor shows a picture with two horizontal lines, which the patient describes as two people lying down and making love. The doctor, growing exasperated, says to the patient, "Can't you think of anything but sex?" to which the patient responds, "But doctor, you're the one showing me all the dirty pictures." Most political scientists would say the same to Friedman: "Can't you think of anything but laissez-faire?" The most important recent treatment of East Asian governments as major promoters of growth is Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, Stanford: Stanford University Press, 1982.



Table 3  
Regional Savings, Investment and Current Account Figures for the Asian NIEs  
and Selected Latin American Countries, 1980-87

	1980	1981	1982	1983	1984	1985	1986	1987
<u>Korea</u>								
Savings/GNP (%)	20.8	20.5	20.9	25.3	27.9	28.6	32.6	35.6
Investment/GNP (%)	20.5	28.7	30.5	31.3	31.3	30.8	31.4	31.4
Current Account (\$Bn)	-5.3	-4.7	-2.7	-1.6	-1.4	-.9	4.6	9.9
Current Account/GNP (%)	-8.8	-7.0	-3.8	-2.1	-1.7	-1.1	4.8	8.3
<u>Singapore</u>								
Savings/GNP (%)	36.5	39.3	40.7	44.8	46.3	42.7	41.1	42.4
Investment/GNP (%)	39.3	45.4	48.8	47.8	46.9	40.7	36.4	35.1
Current Account (\$Bn)	-1.6	-1.5	-1.3	-.6	-.4	0	.5	.5
Current Account/GNP (%)	-13.8	-13.8	-8.7	-3.5	-2.0	0	3.0	2.6
<u>Taiwan</u>								
Savings/GNP (%)	33.0	32.0	30.4	32.1	33.7	33.5	38.7	40.4
Investment/GNP (%)	31.1	28.4	26.3	23.1	21.3	18.7	18.1	19.3
Current Account (\$Bn)	-.9	.5	2.2	4.4	7.0	9.2	16.2	18.1
Current Account/GNP (%)	-2.3	-2.3	4.8	8.7	12.1	15.3	21.8	18.1
<u>Hong Kong</u>								
Savings/GNP (%)	31.4	31.4	28.2	25.1	28.9	27.3	27.9	30.7
Investment/GNP (%)	33.2	31.4	31.4	25.0	22.3	21.1	22.3	24.1
Current Account (\$Bn)	na	na	na	na	na	na	1.5	na
Current Account/GNP (%)	na	na	na	na	na	na	4.0	na
<u>Thailand</u>								
Savings/GNP (%)	22.7	20.6	18.8	17.8	20.6	17.2	18.7	20.9
Investment/GNP (%)	26.3	24.7	21.9	22.9	18.8	21.9	22.1	21.4
Current Account (\$Bn)	-2.1	-2.6	-1.0	-2.9	-2.1	-1.5	.3	-.5
Current Account/GNP (%)	-6.3	-7.3	-2.8	-7.3	-5.2	-4.2	.6	-1.2
<u>Malaysia</u>								
Savings/GNP (%)	30.4	26.2	25.1	26.1	30.8	27.3	28.1	33.4
Investment/GNP (%)	31.6	36.3	39.1	38.5	36.0	29.7	27.1	25.7
Current Account (\$Bn)	-0.3	-2.5	-3.6	-3.5	-1.7	-.7	0	2.3
Current Account/GNP (%)	-1.2	-10.3	-14.1	-12.5	-5.3	-2.4	.1	8.1
<u>Indonesia</u>								
Savings/GNP (%)	25.9	31.1	25.4	24.9	27.0	25.2	21.6	25.2
Investment/GNP (%)	21.8	30.8	28.8	30.8	26.8	27.5	27.4	27.8
Current Account (\$Bn)	2.9	-.6	-5.3	-6.3	-1.9	-1.9	-3.9	-1.7
Current Account/GNP (%)	4.1	-.6	-5.8	-8.2	-2.3	-2.4	-5.4	-2.7

capital investment. The savings and investment rates of the ANIEs and the ASEAN countries, together with the savings and investment rates for some Latin American countries, are shown in table 3. In most of the countries in East Asia, the savings rate has been rising secularly throughout the past 25 years. *By 1986, national savings exceeded 30 percent of GNP in all four ANIEs, a rate that is virtually unmatched in the rest of*

Table 3 (continued)  
Regional Savings, Investment and Current Account Figures for the Asian NIEs  
and Selected Latin American Countries, 1980-87

	1980	1981	1982	1983	1984	1985	1986	1987
<u>Philippines</u>								
Savings/GNP (%)	24.7	23.7	21.4	21.4	16.8	14.1	15.5	17.9
Investment/GNP (%)	25.7	26.1	17.9	25.1	19.0	15.1	13.0	14.0
Current Account (\$Bn)	-1.9	-2.1	-3.2	-2.7	-1.3	..	1.0	-0.5
Current Account/GNP (%)	-5.4	-5.5	-8.2	-8.1	-4.0	-1	3.3	-1.6
<u>Argentina</u>								
Savings/GNP (%)	20.5	17.9	21.3	22.8	na	na	na	na
Investment/GNP (%)	22.3	18.6	16.5	17.8	na	na	na	na
Current Account (\$Bn)	-4.8	-4.7	-2.4	-2.4	-2.5	-1.0	-2.9	-4.3
Current Account/GNP (%)	-3.0	-3.8	-4.1	-3.8	-3.2	-1.4	-3.7	na
<u>Brazil</u>								
Savings/GNP (%)	15.9	16.9	15.5	13.6	16.3	16.1	na	na
Investment/GNP (%)	21.1	21.2	21.2	16.9	16.4	16.3	na	na
Current Account (\$Bn)	-12.8	-11.8	-16.3	-6.8	0	-3	-4.5	na
Current Account/GNP (%)	-5.1	-4.3	-6.1	-3.4	0	-1	-1.7	na
<u>Chile</u>								
Savings/GNP (%)	16.8	12.4	9.4	12.5	12.5	16.5	18.7	na
Investment/GNP (%)	16.7	18.6	14.6	12.0	12.4	14.2	14.5	na
Current Account (\$Bn)	-2.0	-4.7	-2.3	-1.1	-2.1	-1.3	-1.1	-8
Current Account/GNP (%)	-7.2	-14.5	-9.5	-5.7	-10.7	-8.3	-6.7	na
<u>Mexico</u>								
Savings/GNP (%)	27.2	27.3	27.4	30.3	29.7	na	na	na
Investment/GNP (%)	24.2	25.7	22.3	17.3	18.0	na	na	na
Current Account (\$Bn)	-8.2	-13.9	-6.2	5.4	4.2	1.2	-1.7	3.9
Current Account/GNP (%)	-4.4	-5.8	-3.7	-3.8	2.5	.7	-1.3	na

Note: The current account shown does not necessarily equal savings less investment since investment shown here does not include changes in stocks and due to discrepancies between the national income accounts and balance of payments accounts shown in the International Financial Statistics.

Source: IMF, *International Financial Statistics*, World Bank, *Indonesia Report*, 1988.

the world. Savings were considerably lower in the ASEAN countries, but still well above the averages of Latin America, where savings rates have been lower and falling in the 1980s.<sup>6</sup>

The high savings rates have supported investments not only of private physical capital, but also of public-sector infrastructure (for example, extensive irrigation projects in agricultural areas), and even

<sup>6</sup> Indonesia's savings rate dipped in 1986 to unusually low levels because of the enormous income loss from the decline in oil prices. The Philippines is the exception that proves the rule. Alone of the ASEAN countries, the Philippines experienced a significant decline in savings rates throughout the 1980s, a decline which is both a cause and reflection of the economic crisis in that country.

Table 4  
 Manufactured Exports for the Asian NIES and Selected Latin American Countries, 1987

Latin America			Asian NIEs		
	Manuf. Exports (\$billion)	Percent of Total Exports		Manuf. Exports (\$billion)	Percent of Total Exports
Argentina	1.4	22	Hong Kong	44.6	92
Brazil	10.6	41	Korea	43.0	91
Chile	.5	9	Singapore	19.5	68
Colombia	.9	18	Taiwan	48.9	92
Mexico	8.0	30	Indonesia	3.6	22
Uruguay	.5	42	Malaysia	6.4	36
Venezuela	1.0	9	Philippines	3.5	61
			Thailand	4.9	42
Total	22.9		Total	174.5	

Note: Manufactured exports calculated from share of manufactures in 1986, times total exports in 1987.  
 Source: World Bank, *World Development Report*, and IMF, *Direction of Trade Statistics Yearbook* (1988).

more importantly, of human capital. The population in most of East Asia is more literate and more skilled than in other countries with similar per capita income levels.

*Conservative fiscal policies.* In almost all the countries under consideration, governments have managed fiscal policy in a conservative manner, avoiding chronically large deficits and generating surpluses on the current account of the budget. These tight fiscal policies have contributed to high national savings (by raising the public-sector savings rate), low inflation, and the avoidance of serious financial crises from excessive borrowing. Again, there have been exceptions to this general statement (the Philippines and Malaysia in the early 1980s and Indonesia in 1974–75 are clear exceptions).

*Outward-oriented trade policies.* There is widespread assent in the economics literature that a key, or even *the* key factor in East Asia's successful economic growth has been the heavy emphasis on export growth and diversification. All of the ANIE economies are booming manufacturing exporters. Indeed, in 1987, *the four ANIE economies combined exported over six times as much in manufactured goods as did all of Latin America!* Individually, Hong Kong, Korea, and Taiwan exported much more than the total for Latin America (table 4). Also, the share of total exports in GNP, and the share of manufacturing exports in GNP, have risen sharply in each of these countries during the past 20 years. In Korea, for example, the share of exports in GNP has risen from 3 percent in 1960 to 39 percent in 1987.

ASEAN countries are less oriented towards manufacturing exports and somewhat less outward-oriented overall. This is primarily a reflec-

tion of factor endowments. With large endowments of raw materials, ASEAN countries are naturally more directed towards primary goods exports, and perhaps more susceptible to import-protection arguments on behalf of domestic industry.<sup>7</sup> Nonetheless, the ASEAN countries have all been successful in spurring nontraditional manufacturing exports alongside their raw materials exports.<sup>8</sup> Overall, when one adds both the primary exports and the manufacturing exports, the share of exports in GNP is quite high in ASEAN economies, with the exception of the Philippines, which has been more inward-oriented than the rest of the region.

There is considerable agreement about one basic aspect of the policies underlying outward-oriented growth: the net incentives given to exportables (including the effects of tariffs, subsidies, financial and tax incentives, and the like) are on balance at least as favorable as (and in some cases much more favorable than) the incentives given to import-competing sectors. Beyond that, however, there is a lively debate among economists on the extent to which export orientation actually is, and should be, based on free trade versus infant industry protection, foreign direct investment versus indigenous entrepreneurship, and state enterprise versus private sector firms.<sup>9</sup>

*Flexible and rapid response to external shocks.* Much of what went wrong in the developing world in the past decade has its origins in a four-year period: 1979 through 1982. It was in those years that world interest rates shot up to unprecedented levels, that commodities prices collapsed, and that the industrial world went into a sharp recession. Latin America responded slowly to these shocks; the East Asian economies, by and large, responded with alacrity. The pace of recovery to those shocks was a decisive factor in avoiding or succumbing to the debt crisis of the 1980s. Slow response led to a remarkable buildup of debt in

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<sup>7</sup> The large natural resource endowments tend to raise the internal real exchange rate (that is, the price of nontradeables relative to non-primary-good tradeables), thereby squeezing out manufacturing tradeables à la the Dutch disease. This has led in many countries to political support for import protection for the manufacturing sector, as the way to spur industrialization, in view of the fact that free trade would tend to leave the manufacturing sector quite small. The link between resource endowments and import protection is nicely spelled out in A. Bianchi and T. Nohara (1988).

<sup>8</sup> Despite starting from a smaller industrial export base in 1965, the ASEAN countries had far surpassed most Latin American countries in share of manufactured exports by 1986. Between 1965 and 1986 the share of manufactured exports in the four ASEAN countries rose from 5 to 40 percent while in the major Latin American countries the shift was from 9 to 26 percent. One striking example is Malaysia, which has become one of the world's leading exporters of electronics components, despite its heavy export dependence on raw materials.

<sup>9</sup> It is sometimes overlooked, for example, that state enterprises, especially in basic industry, have played a very large role in the development of Korea and Taiwan, and that many of Korea's major exporting firms (especially the giant chaebol) are privately owned, but have in fact been carefully and generously fostered with public money.

the period 1980–82, just before the commercial banks stopped lending. As we have pointed out elsewhere, the Latin net debt to the international commercial banks approximately doubled in this short period, but grew much more slowly in most Asian economies.

The behavior of debtor governments in the period 1979–82 has remarkable predictability for the depth of the crisis in the various debtor countries after 1982. In Brazil, for example, a fiscally conservative finance minister was sacked in 1979 in favor of an expansionist minister, who tried to accelerate Brazilian growth with increased foreign borrowing. Of course, Brazil soon hit a brick wall in the world financial markets, finding itself cut off from new loans, and thence fell into a deep financial crisis. In contrast, in 1979 the Korean government embarked on a stabilization program upon early signs of turbulence in the world's financial markets. The won was devalued, fiscal policy tightened, real wages were squeezed in order to improve international competitiveness, and in general the economy was prepared to weather the shocks of the early 1980s.

This pattern of early adjustment in Korea versus delayed adjustment in Brazil shows up in a country-by-country comparison of East Asia and Latin America.<sup>10</sup> The difference shows up most markedly in exchange rate policy. Argentina experienced extensive capital flight and a highly overvalued currency during 1979–82; Mexico went on a fiscal binge with a growing overvaluation of the peso, based on expectations of \$50 per barrel oil by the mid 1980s; Venezuela allowed the exchange rate to become increasingly overvalued until a depletion of foreign exchange reserves forced a grudging devaluation in 1983. By contrast, Indonesia devalued in 1978, to prevent exchange rate overvaluation; Korea devalued in 1980; and almost all of the other East Asian countries took actions to maintain real exchange rate stability throughout the period.<sup>11</sup>

*High degree of income equality.* One of the remarkable features of the East Asian countries is the high degree of income equality compared with other developed countries at a comparable level of per capita income.<sup>12</sup> The comparison of several East Asian economies with several

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<sup>10</sup> See Sachs (1989) for a series of country studies that make that point.

<sup>11</sup> The Philippines, in contrast to most of the other countries in the region, allowed the Philippine peso to become overvalued in the early 1980s. Similarly, Malaysia undertook an excessive fiscal expansion, with an overvalued exchange rate, in the early 1980s, but then engaged in a dramatic fiscal contraction after 1982, when the country came close to falling into a debt crisis.

<sup>12</sup> It is an open research question to explain the greater-than-average income equality in East Asia. It seems to be linked to several factors, including: the characteristics of land-poor monsoon economies (see Oshima 1987 on this point), the post-World War II land reforms in several countries, the labor-intensive export-led growth policies, the

Table 5  
Income Distribution in East Asia and Latin America  
Percent

	Percent of Total Income Held by		Ratio of Highest to Lowest
	Lowest Income Quintile	Highest Income Quintile	
Latin America			
Argentina	4.4	50.3	11.4
Brazil	2.0	66.6	33.3
Chile	4.5	51.3	11.4
Colombia	2.8	59.4	21.2
Costa Rica	3.3	54.8	16.6
Ecuador	1.8	72.0	40.0
Mexico	4.2	63.2	15.0
Panama	2.0	61.8	30.9
Peru	1.9	61.0	32.1
Uruguay	4.4	47.5	10.8
Venezuela	3.0	54.0	18.0
Average	3.1	58.4	18.7
East Asia			
Hong Kong	6.0	49.0	8.2
Korea	6.5	45.2	7.0
Singapore	6.5	49.2	7.6
Taiwan	8.8	37.2	4.2
Indonesia	6.6	49.4	7.5
Malaysia	3.5	56.0	16.0
Philippines	3.9	53.0	13.6
Thailand	5.6	49.8	8.9
Average	5.9	48.6	8.2

Source: Sachs and Berg (1988), table 2; World Bank, *World Development Report* (1988).

Latin American economies is shown in table 5. In earlier work, Sachs and Berg (1988) showed that countries with higher income inequality were more likely than others to have succumbed to a debt crisis in the 1980s. They speculate that high income inequality contributes to political instability and social pressures for excessive fiscal spending, and thereby contributes to poor economic performance. The fact that the Philippines is an outlier with respect to income inequality, political instability, and severity of the economic crisis in the 1980s, lends

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greater importance of a rural political base in domestic politics, and the extensive literacy and widespread distribution of education in these countries.

support to these arguments.<sup>13</sup> Williamson and Balassa (1987) have similarly speculated that low income inequality has contributed to a better trend growth rate of the East Asian economies, through various political and economic channels that they identify.

*Japan as a role model.* It is likely, though hard to prove, that Japan's economic success had important spillovers in the region. At a basic level, Japan has served as an idea and a challenge for the rest of the region, for Japan proved for the first time that an Asian country could emerge as a developed, manufacturing exporter on a par with Western nations. On the level of ideas, Japan proved (as no country ever has for Latin America), that active promotion of manufacturing trade with the advanced countries could be a source of growth rather than a source of dependency. Japan also provided specific ideas of how to foster development (industrial policy, high savings, manufacturing export promotion); specific institutions for development, in the cases of Japan's former colonies, Korea and Taiwan; and appropriate labor-intensive production technologies for the rest of the region, which arrived via foreign direct investment by Japanese firms. Moreover, by spurring growth in Korea and Taiwan, Japan's lesson was then transmitted through the ASEAN region by the emergence of several good examples of successful growth.<sup>14</sup> Unfortunately, despite the likely importance of Japan's role for economic development in the rest of Asia, the story of Japan's influence is yet to be told with care.<sup>15</sup>

In addition to these six factors, economists and commentators have offered several others to explain East Asia's extraordinary economic accomplishments in recent years. In our view, most of these additional

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<sup>13</sup> Also Malaysia is notable for greater inequality of income, and for having come closer to crisis in the early 1980s than other countries in the region. Indeed, it is possible to link Malaysia's inequalities, which reflect income differences between ethnic groups (especially the ethnic Malays versus the Chinese community), and the pressures for large government spending on behalf of the poorer Malay population.

<sup>14</sup> These spillover effects are of course hard to quantify. Yet these authors have been repeatedly impressed in trips to the region by the extent to which policymakers in each country are acutely aware of, and reactive to, the policy actions in the neighboring countries, usually to beneficial effect. There has been an active competition among the ASEAN countries, for example, to make each country especially hospitable for foreign direct investment, by maintaining an efficient tax system, competitive exchange rates, etc., thereby enforcing good behavior in each of the countries. In Latin America by contrast, the overwhelming sense that one gets is that not even one success story exists that can serve as a role model, and that the spillovers, to the extent that they exist, are of a negative variety. The biggest countries, Argentina, Brazil, and Mexico, are all in profound crisis. Chile's recent successes are discounted in other countries as the result, in part, of a repressive authoritarian government. And Asia's successes are poorly understood, and simply too distant to be felt as a useful object lesson by most observers in Latin America.

<sup>15</sup> We are only aware of one brief discussion of this theme, but it comes from an authoritative source, Professor Ezra Vogel of Harvard University, who is one of the leading interpreter's of Japan's economic development and its effects on the rest of the world. See Vogel (1987), especially Chapter 2.

arguments carry less weight, since they are called into question by important contradictory evidence. We have already noted one common view of economists—and almost nobody else—that the East Asian economies are exemplars of free enterprise. Evidence cited elsewhere, for example, in Sachs (1985, 1987), suggests that the role of the government is at least as extensive, and in some ways more extensive, in the East Asian economies than in others.<sup>16</sup> The role seems to differ in kind, rather than in extent.

Another interpretation has looked to cultural factors (for example, the Confucian tradition) as a fundamental explanation. Ironically, such cultural factors were widely viewed in the 1950s as reasons why the East Asian economies would have a very difficult time in sustaining modern economic growth. Nor is the view that credits the stability achieved by Asia's authoritarian political structure very credible: Africa and Latin America have also had extensive periods of authoritarian rule, without the benefits of successful economic accomplishment.

### *An Example of Divergent Economic Performance: Brazil and Korea*

Many of the dramatic differences between East Asia and Latin America can be vividly captured by a comparison of the economic performance of Brazil and Korea in the past 20 years. In some ways, Brazil came closest in Latin America in the early 1970s to achieving East Asian-style growth, based importantly on manufacturing export promotion and an active industrial policy. An authoritarian government which took power in a coup in 1964 appeared to put the country on a high growth path for at least a decade after the coup, achieving growth rates of around 10 percent per year for several years, comparable to Korea's and Japan's. As a continental power with an enormous population, Brazil could afford to mimic Japan's policies of import protection as a form of export promotion, using the domestic market to build up infant industries which then emerged as internationally competitive. Yet, Brazil succumbed to the external shocks of higher oil prices and higher interest rates at the end of the 1970s, even though both Brazil and Korea were about as dependent on oil imports and external borrowing at the end of the 1970s. While Korea has enjoyed strong growth, stable prices, and falling debt in the second half of the 1980s, Brazil has fallen into economic stagnation and an explosive inflationary spiral.

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<sup>16</sup> The role and size of government seem to be as extensive as in Latin America in many key dimensions, including: the share of government spending in GNP; the role of state enterprises in aggregate investment; and the extent of government intervention in trade (though in East Asia, the intervention is export-promoting, and infant-industry oriented).



The following diagrams help to shed light on this divergent pattern. The main points of divergence follow the points stressed earlier, including differences in the paths of savings rates, fiscal policy, adjustment to external shocks, and trade orientation. Indirectly, the differences in income distribution in the two regions have also played a clear role.

Figure 1 shows the growth of per capita income in the two countries, showing that from 1970 until the mid-1970s, Brazil and Korea shared a common trajectory, but that Brazil then stagnated (especially after 1980), while Korea continued to boom. Figure 2 shows similarly that while both countries had moderate inflation in the mid-1970s (with Brazil's inflation somewhat higher on average, but still not increasing), Brazil started to diverge by the late 1970s onto a path of sharply higher inflation rates.

Figures 3 and 4 point towards an explanation of these patterns. In the first half of the 1970s, Brazil and Korea were investing and saving a comparable fraction of GNP (indeed, Brazil had somewhat higher savings rates in the early 1970s), but by the mid-1970s, both savings and investment rates in Brazil began to drop off steadily, and eventually very sharply. *The capital accumulation that was the basis of Brazil's rapid growth dropped off by the late 1970s.* In Korea, by contrast, savings and investment rates rose sharply in the second half of the 1970s, and remained high in the 1980s.

This difference in savings and investment cannot easily be explained by external shocks. Indeed, as shown in figure 5, the terms of trade fell by *less* in Brazil than in Korea throughout the 1970s (though

Figure 1

GDP Per Capita, Brazil and Korea

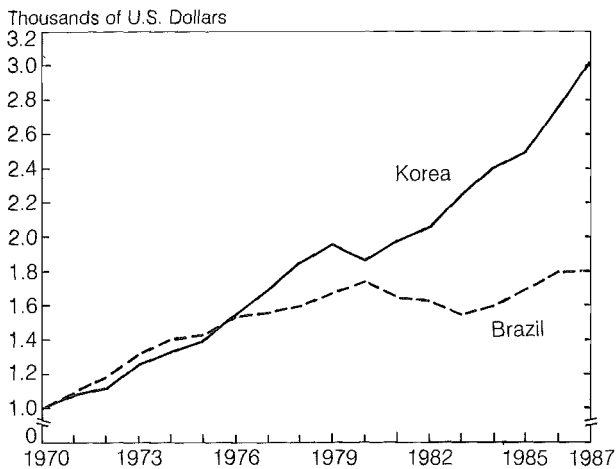


Figure 2

Annual Inflation Rate in Brazil and Korea



Korea's terms of trade are somewhat stronger in the 1980s). The big difference in savings lies in the fiscal area. In Brazil, the government postponed the economy's adjustment to the two oil shocks through various fiscal measures that attempted to insulate the private sector from the higher oil prices. Domestic energy prices were kept low with large and expensive government subsidies that contributed to rising budget deficits and thereby to falling national savings rates. In effect, the higher oil prices were paid for through international borrowing rather than

Figure 3

Share of Gross Fixed Investment in GNP, Brazil and Korea.

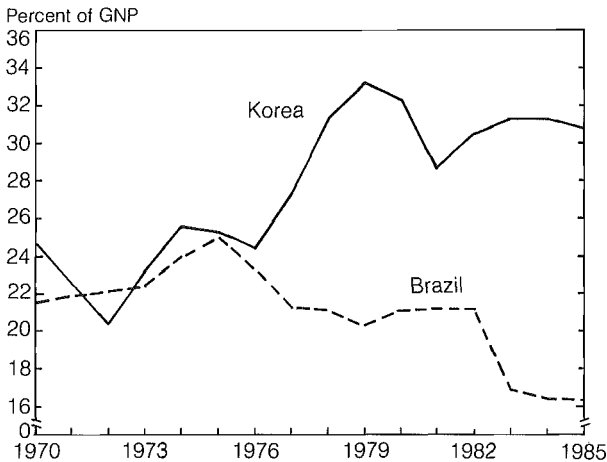
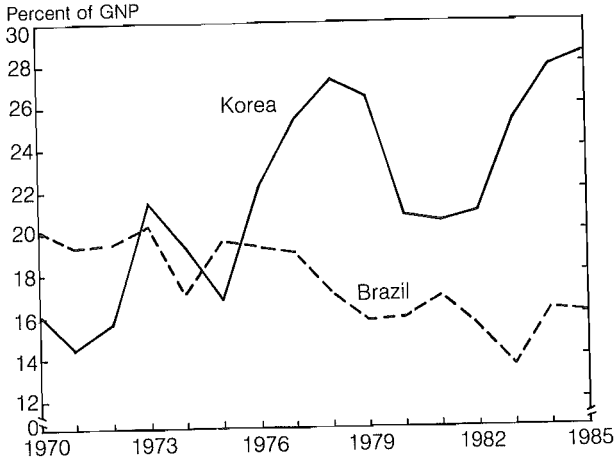


Figure 4

National Savings Rates in Brazil and Korea



reduced consumption spending. Though both Brazil and Korea borrowed heavily in international markets in the 1970s, Brazil is a quintessential case of a country that borrowed to maintain consumption spending, while Korea borrowed to augment the aggregate investment rate. In addition to the differences in fiscal policy, *private* savings rates in

Figure 5

Terms of Trade in Brazil and Korea

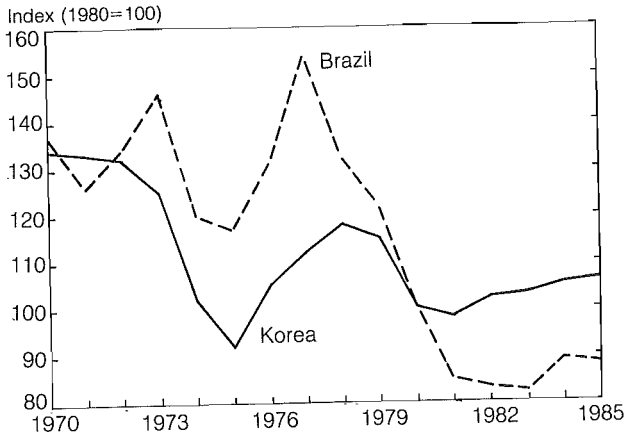
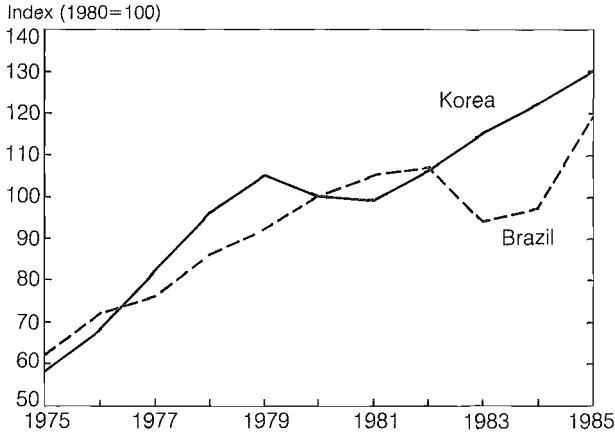


Figure 6

## Real Wages in Brazil and Korea



Korea rose steadily throughout the 1970s, while private savings rates in Brazil stagnated after the mid-1970s.<sup>17</sup>

The differing reactions of the two countries to the external shocks at the end of the 1970s has already been noted in the previous section. In Brazil, a finance minister who wanted to exercise financial restraint in 1979 was fired in favor of an advocate of greater budget deficits and more international borrowing. At the same time Korea embarked on an ambitious multi-year stabilization effort. As with the oil shocks of the mid-1970s, the higher oil prices and higher interest rates on public debt after 1979 were paid for in Brazil through new borrowing (that is, lower savings rates), rather than by internal adjustment. As Brazil's capacity to borrow from international markets dried up in the early 1980s, the combination of lower savings rates and sharply lower external borrowing produced a decisive drop in the national investment rate.

The absence of appropriate adjustments in Brazil to the external shocks shows up as well in a comparison of labor market performance, shown in figure 6. Korean real wages stopped rising between 1979 and 1982, as part of the adjustment to the terms of trade deterioration. In Brazil, on the other hand, real wage growth continued unabated until

<sup>17</sup> There is no easy explanation of the difference in *private* savings behavior. It appears to us, however, that the private savings in Korea continued to rise because of the high and stable growth rates, while the private savings in Brazil fell because of the reaction to increasingly erratic and unstable government policies. This is simply a conjecture, however, that has not been verified by more detailed analysis.

1982, when the country finally fell into deep crisis, and real wages thereafter stagnated.<sup>18</sup>

Why were the policy adjustments in Brazil so bad, and in Korea so strong, at the decisive moments at the end of the 1970s? Here we can only speculate. It seems, for one thing, that the extreme income inequalities of Brazil have played a subtle though important role in the political process. Governments in Brazil are chronically afraid to impose austerity conditions on the general public, for fear of a political revolt among the lower classes, or for fear of allowing a political opening for populist challengers to power. The authoritarian regime that came to power after 1964 sought its legitimacy in high growth rather than in social equity or political legitimacy. As such, it felt too weak to demand sacrifices from the population when external shocks hit the country at the end of the 1970s.

Also, as stressed by Bresser Pereira (1988), there is the role of ideas. Without the good examples of Japan and other successful adjusters as an encouragement, Brazilian policymakers and intellectuals have consistently rejected the very idea of "adjustment" to external shocks (that is, belt-tightening after a terms of trade deterioration), as something imposed from hostile outside forces, such as the IMF or the creditor world in general.

### *Balance of Payments Trends in the 1980s*

In 1987, Asian NIEs collectively ran a trade surplus of \$25.9 billion, large enough to attract considerable attention and even consternation in the rest of the world. The U.S. Treasury began to pressure these countries to take measures to counteract the growing surpluses, including fiscal expansion, exchange rate appreciation, and trade liberalization. Some independent commentators, such as Balassa and Williamson (1987), similarly called for these countries to make adjustments to reduce their trade surpluses.

In 1988, a new Omnibus Trade Act was passed into law, containing a provision calling on the U.S. Treasury Department to analyze the exchange rate policies of other countries to determine whether they

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<sup>18</sup> As is well understood, a terms of trade deterioration generally requires a real wage decline in order to maintain full employment. (See Bruno and Sachs (1985) for a formal demonstration of this argument in the case of a country facing a rise in the world price of oil.) This may be brought about through nominal wage restraint, or through a policy of exchange rate depreciation. In Korea, both mechanisms were used to keep real wage growth nearly zero for several years after 1979. In Brazil, on the other hand, nominal wages were tightly indexed to past changes in consumer prices, and the exchange rate was not decisively devalued until well after the onset of the external shocks. As a result, real wage growth remained strong until 1982.

"manipulate the rate of exchange between their currency and the United States dollar for purposes of preventing effective balance of payments adjustments or gaining unfair competitive advantage in international trade." If the Treasury determines that such manipulation is in fact occurring, it is to enter into bilateral negotiations with the offending countries in order to rectify the situation.<sup>19</sup> In October 1988, the Treasury issued its first report under the act, declaring that Korea and Taiwan were indeed manipulating their currencies for unfair advantage, within the meaning of the act, and that they would therefore be targeted for bilateral negotiations.<sup>20</sup>

Our purpose in this section and the next is to analyze the appropriateness of the Treasury's conclusions, and to consider possible policy responses for Korea and Taiwan. To put the balance of payments patterns in some perspective, the following points about the East Asian countries should be noted. First, the large surpluses in the region are of very recent vintage. Korea, Hong Kong, and Singapore in fact ran external *deficits* rather than surpluses for most of their recent history.<sup>21</sup> In Hong Kong, they date from 1985,<sup>22</sup> while from Korea and Singapore, they date from 1986. Only in Taiwan have the current account surpluses been persistent, with only one year (1980) in deficit since 1975. The surpluses in the ASEAN countries are much smaller and came later. Malaysia went into a significant current account surplus in 1987, after many years of deep deficits. In Thailand, Indonesia, and the Philippines, the economy remains in current account deficit.

This dating is significant, since the current account surpluses are sometimes wrongly attributed to protectionist trade policies in the Asian countries. But contrary to a simplistic hypothesis which holds that the East Asian economies run current account surpluses because they keep imports out, the fact is that during the 1980s, *trade policies have been liberalized in most of these countries at the same time that current accounts have moved from deficits to surpluses.*<sup>23</sup> Thus, any links between restrictive trade

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<sup>19</sup> The provision is in Section 3004 (International Negotiations on Exchange Rate and Economic Policies) of the 1988 Omnibus Trade Act. If the Treasury determines that the exchange rate is indeed being manipulated, it is to initiate negotiations with the foreign government, "for the purpose of ensuring that such countries regularly and promptly adjust the rate of exchange between their currencies and the United States dollar to permit effective balance of payments adjustments and to eliminate the unfair advantage" (part b, Section 3004).

<sup>20</sup> See U.S. Department of the Treasury (1988).

<sup>21</sup> Hong Kong does not publish current account data. On the merchandise trade balance, however, Hong Kong was in deficit in the 1980s until 1984.

<sup>22</sup> Trade surpluses, in the case of Hong Kong.

<sup>23</sup> Partly in response to U.S. pressures, Taiwan has undertaken significant trade liberalization measures in recent years, including substantial cuts in tariffs and relaxation of nontariff barriers. For a description of the tariff measures in 1987, see "Tariff Cuts in the Republic of China on Taiwan," Taipei, Republic of China: Board of Foreign Trade,

policies and current account surpluses, to the extent that such links exist, would have to be much more complex than is commonly perceived. It is probably safer to assert that the links between trade policies and the balance of payments simply are not that strong. There is little doubt that Latin America is on balance more protectionist than East Asia, yet the Latin American current account balances have chronically been in deficit. Hong Kong, on the other hand, with nearly free trade, has generated large trade and current account surpluses in recent years.

A better starting point for understanding the current account patterns is to look at the savings and investment rates of the various countries in the region. The current account is, by identity, equal to the excess of national savings over national investment. As such, it is determined more by *intertemporal* considerations that affect savings and investment decisions than by static characteristics of the economy such as the trade regime.<sup>24</sup>

When we examine the trends in savings and investment rates in the ANIE economies, a number of distinct trends are seen to be at work. In Taiwan, which has the largest current account surpluses in the region, both in absolute terms and relative to GNP, the notable phenomena are a rise of savings rates to extraordinary levels (over 40 percent of GNP in 1987), combined with a sharp drop in investment rates throughout the 1980s. The same trend is apparent, though in much smaller magnitude, in Singapore. In Korea, the savings rates have also risen, but with no drop in investment rates. And in Hong Kong, the investment rates came down rather sharply after the early 1980s, thereby leading to a widening gap of domestic savings over domestic investment.

The patterns in the ASEAN countries are equally diverse. In Indonesia, there seems to be little decisive trend either in savings or investment rates, except for the sharp drop in savings rates in 1986 upon the collapse of oil prices.<sup>25</sup> In Thailand, investment spending was tapered back throughout the 1980s, most likely in response to tightening credit conditions in world markets, thereby leading to an improvement

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Ministry of Economic Affairs, May 31, 1987. Korea, similarly, has undertaken extensive import liberalization measures since the early 1980s. The timetable adopted by the government for a phased reduction or elimination of existing import tariffs through 1988 is also seen as accommodating, in part, U.S. pressures for liberalization. See Kim (1986) and the World Bank (1987) for a description of these measures.

<sup>24</sup> This point should not be overstated, however. In principle, trade policies could affect the savings and investment rates through various channels. For example, temporary trade policies can clearly alter intertemporal choices, by making households and firms speed up or slow down the acquisition of foreign goods. More subtly, trade policies can affect the distribution of income, and thereby affect the national savings and investment rates, as shown theoretically by Matsuyama (1987).

<sup>25</sup> We should expect that the drop in savings rates would be mostly temporary, in view of the fact that the decline in oil prices seems to be a persistent rather than transitory phenomenon. Unfortunately, we do not have yet have data for the post-1986 period.

in the current account balance in the course of the 1980s. In the Philippines, the combination of the economic crisis and terms of trade decline in the 1980s contributed to a fall in domestic savings which, due to the country's external borrowing constraint, also led to a sharp decline in the investment rate. In Malaysia, there was a sharp cycle over the course of the 1980s: a huge government investment boom led to large budget and current account deficits in the early 1980s; a subsequent sharp cutback in the deficit and in government investment spending led to a sharp improvement of the current account, eventually with a shift into surplus by 1987.

In absolute dollar terms, the surpluses in Korea and Taiwan are by far the most important in the region. The eight countries as a group had a combined 1987 current account balance of about \$31.1 billion, with Taiwan and Korea together accounting for \$27.9 billion of the surplus. It is of course these two countries that have been the major focus of U.S. economic policy attention. For this reason, we will now turn to a more in-depth focus on the current account developments in these two countries.

### *Korean Balance of Payments in the 1980s*

In the early 1980s, Korea appeared to be on the brink of a debt crisis. Korea had borrowed heavily at the end of the 1970s, as part of a drive towards heavy industrialization. As we noted earlier, the authorities sensed trouble in 1979, with the chill winds of higher oil prices and sharply rising international interest rates, and therefore put in place an austerity-cum-export-promotion program.

The year 1980 was a disaster, on all accounts. President Park was assassinated at the end of 1979, and in the following year the country was in political turmoil as a new military regime under General Chun Doo Hwan attempted to consolidate power. The agricultural crop failed because of adverse weather conditions, contributing to a 5 percent drop in GNP. The terms of trade and interest shocks helped to push the debt-service ratios to new highs. Additionally, the investment program of the late 1970s looked like a terrible mistake, with the investment too much skewed to internationally uncompetitive heavy industries, such as steel and petrochemicals. Moreover, it looked like more trouble was brewing, with the collapse of Korea's market for overseas construction projects in the Middle East, and the potential for financial distress in these mammoth construction firms.

Six years later, the concerns of the early 1980s seem hard to imagine. Korea is now booming, with a net debt that is fast approaching zero, a large current account surplus, and virtually zero inflation. The explanation of the remarkable transformation seems to lie in a combination of good policies (particularly the timely shift towards stabiliza-



tion, and the reinforcement of stabilization measures in 1981 and 1982), the returns to earlier investments combined with an opportunity to export to a booming U.S. market, and plain old good luck.

Perhaps the biggest mistake in misjudging Korea's prospects in the early 1980s came in underestimating the incipient returns to the investments of the late 1970s. Until 1985 or 1986, it was an article of faith among many trade specialists that Korea had gone to the edge of crisis in the early 1980s because it had tried to rush the process of industrialization by making an *artificial* jump from labor-intensive manufactures to heavy industry through a foreign-financed investment binge.<sup>26</sup> In retrospect, it appears that those investments, in fact, have paid off handsomely, since it is the new heavy industries that are the major contributors to Korea's export boom to the U.S. market of the past few years. This feature is evident in table 6, which shows how the structure of Korean exports has shifted markedly towards heavy industry and transport equipment, precisely the industries that were built up at the end of the 1970s.

The good luck for Korea came in three steps: first, an import surge in the United States, following the expansion of U.S. fiscal policy in 1983-84; second, three "lows" that simultaneously benefitted the Korean economy after 1985—low interest rates, low oil prices, and a low value of the dollar;<sup>27</sup> and third, the extraordinary boom of the Japanese economy in 1987-88, which is providing a new engine for export growth of the Korean economy. The benefits to Korea of lower oil prices and interest rates are obvious, while the benefits of a lower dollar need some explanation. At a superficial level, the benefits of a lower dollar seem clear. With the won effectively pegged to the dollar, the dollar depreciation vis-à-vis the yen allowed the authorities in Korea to undertake an *effective* depreciation of the won (mainly against the yen) without the need for an overt, and possibly controversial, explicit devaluation. Thus, even as the won strengthened slightly against the dollar after 1985, the trade-weighted real exchange rate depreciated by about 15 percent

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<sup>26</sup> See for example, D. Cole and Y.J. Cho (1986), "The Role of the Financial Sector in Korea's Structural Adjustment," mimeo, Harvard University. Korea was in fact not alone in trying to push towards heavy industry at the end of the 1970s. Singapore pursued a policy of intentionally pushing up wages in order to force producers into shifting to higher value-added-per-worker products. See Pang (1985) and Lim and Pang (1986). In the more normal process, and in the pattern pursued by Korea, workers are bid away from low-wage sectors through a process of capital deepening in heavy industry. The wage-push policy in Singapore proved to be a failure, as it led to a profit squeeze and employment decline, rather than to a restructuring of industry.

<sup>27</sup> Nominal short-term interest rates (LIBOR) fell from 12 percent per year in 1984 to less than 8 percent per year in 1986, and real rates also fell, though not as strongly. Real oil prices fell by over 50 percent between the end of 1984 and the end of 1986. And the real dollar exchange rate depreciated sharply, relative to the yen (which is of most importance to Korea, as we will note), by 35 percent between the end of 1984 and the end of 1986.

Table 6  
Composition of Korean Exports to the United States and to Japan, 1980–87  
Percent

	1980	1981	1982	1983	1984	1985	1986	1987
To the United States:								
Food and animals	2.2	1.9	1.7	1.6	1.3	1.3	1.4	1.7
Beverages and tobacco	.7	.9	.5	.3	.3	.2	.1	.1
Crude materials except fuels	.1	.2	.1	.1	.1	.1	.1	.1
Mineral fuels and materials	0	.2	.8	.1	.1	.8	.3	.2
Animal and vegetable oils	0	0	0	0	0	0	0	0
Chemicals	.8	.9	1.3	.9	.9	.9	1.1	.9
Manufactured materials	26.1	27.2	22.2	20.9	21.3	20.2	14.8	12.2
Machinery and transport equip.	19.4	18.9	20.7	27.7	27.5	25.4	31.9	38.1
Miscellaneous manufactures	50.3	48.8	52.2	47.8	48.0	50.4	49.7	46.2
Others not classified by kind	.5	.9	.5	.6	.5	.7	.6	.6
To Japan:								
Food and animals	19.4	19.6	20.5	20.8	19.8	19.0	21.7	18.2
Beverages and tobacco	.1	.2	.2	.2	.2	.2	.1	.1
Crude materials except fuels	6.3	3.3	3.5	4.1	3.0	3.5	3.1	2.6
Mineral fuels and materials	.1	2.8	2.0	9.6	11.3	12.9	5.6	4.9
Animal and vegetable oils	0	0	.1	0	0	0	.1	0
Chemicals	7.9	7.8	7.1	6.9	6.1	4.9	6.1	4.7
Manufactured materials	30.1	28.2	30.0	25.5	23.9	23.1	22.0	22.1
Machinery and transport equip.	10.1	9.5	8.2	8.6	9.3	9.4	9.7	10.5
Miscellaneous manufactures	24.8	27.6	27.4	20.9	23.9	25.4	30.1	35.6
Others not classified by kind	1.3	1.0	1.2	3.4	2.5	1.6	1.4	1.3

Source: OECD, *International Trade Statistics*.

between 1984 and 1986.<sup>28</sup> Thus, the authorities “got away” with an effective won depreciation that they might have been hard-pressed to pursue in a more open and explicit manner.

But the benefits of the weak dollar and strong yen go beyond this opportunity for a hidden exchange rate change. Because Korean goods compete directly with Japanese goods in U.S. markets, the strengthening of the yen vis-à-vis the dollar had the effect of shifting out the demand for Korean goods in the U.S. market, thereby leading to a terms-of-trade improvement for Korea, and a real income gain. In other words, the appreciation of the yen led to a rise in demand for Korean goods in U.S. markets, and thereby to a rise in the dollar price of Korean exports. To the extent that Korean imports, on the other hand, are fixed

<sup>28</sup> The Morgan Guaranty Trust Co., *World Financial Markets*, presents a trade-weighted real exchange rate for Korea. With 1980 = 100, the exchange rate depreciated from an average 1984 value of 95.6 to an average 1986 value of 82.0. Since 1986, the won has appreciated sharply in real terms, to a value of 95.0 in October 1988.

in dollar terms, the overall effect is a rise in the ratio of export prices to import prices, that is, a terms-of-trade improvement, and a consequent gain in real income. A straight won devaluation, at a given dollar-yen rate, would not result in a comparable terms-of-trade improvement, since the dollar price of import goods would rise along with a rise in export prices.

The overall effect of lower oil prices, lower interest rates, and a stronger yen, was to improve Korea's terms of trade while reducing the interest costs of debt servicing. We can make some very rough calculations of the income savings for Korea from these two developments. The terms of trade improved by 12 percent between 1984 and 1987; with an import share of 34 percent of GNP in 1984, the income savings are on the order of 4 percent of GNP. Similarly, the fall in interest rates after 1984 amounted to a reduction of real interest costs of about 3 percentage points, multiplied by a net debt to GNP ratio on the order of 0.40, suggesting income savings of 1.2 percent of GNP. In total, the favorable shocks contributed to an income improvement per year of approximately 5.2 percent of GNP. These income gains, combined with the surge in exports to the U.S. markets, resulted in a sharp rise in Korea's real income, and a sharp rise in savings rates, which in turn account for Korea's remarkable shift to external surpluses.

Of course, with alternative policies, the macroeconomic authorities in Korea could have encouraged a rise in domestic demand to match the rise in domestic income, so that the favorable shocks would have led to greater investment and consumption, rather than larger external trade surpluses. Some of these policy alternatives (for example, larger budget deficits, exchange rate appreciation, and the like) are considered in the next section. It is clear that the policymakers chose a conservative response for the favorable shocks, that is, to reduce the external debt stock, because of their close encounter with the international debt crisis in the early 1980s. It is hardly credible for U.S. policy authorities to urge a slower decline of Korea's foreign debt at a time when most other highly indebted countries remain trapped in a deep financial crisis.

During the period since 1985, Korea has been engaged in a significant liberalization of the trade account, partly under U.S. pressure, but partly under the natural evolution of Korea's development strategy.<sup>29</sup> The simultaneous emergence of large trade surpluses at the time that trade liberalization was proceeding at unprecedented rates

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<sup>29</sup> A discussion of the liberalization measures undertaken during this period is available in the 1987 World Bank report *Korea: Managing the Industrial Transition*. A description of the schedule for import liberalization between 1984 and 1988 and discussion of its relevance to U.S. Korean trade is available in Kim (1986).

suggests that indeed the surpluses result from important macroeconomic phenomena rather than from the trade regime itself.

### *Taiwan's Balance of Payments Performance*

Taiwan, unlike Korea, did not rely on foreign savings to finance domestic investment in the 1960s and 1970s. Debt was kept low, and the current account was approximately balanced or in small surplus until the early 1980s, when the economy shifted to enormous trade surpluses. Since 1980, the cumulative surpluses have led to the accumulation of international reserves of no less than 80 percent of GNP, the largest reserve holding in the world in both absolute and relative terms.<sup>30</sup> Of course, large current account surpluses result in an increase in net foreign asset holdings (or a reduction of net foreign debt). The fact that in Taiwan they resulted in such a large accumulation of *short-term, highly liquid foreign exchange reserves*, results mainly from Taiwan's extensive capital controls, which have prevented the private sector from accumulating other forms of financial assets.<sup>31</sup>

We have already noted that the emergence of the surpluses during 1980–85 occurred through a sharp contraction of investment spending relative to GNP, while savings rates remained very high. Then, after 1985, savings rates rose while investment rates remained at their "depressed" levels.<sup>32</sup> Table 7 helps us to identify some of the factors in the decline in investment rates, by breaking the overall investment spending into levels for the private sector, government enterprises, and the central government. It is clear from the table that the largest cutback in spending was undertaken by the state enterprises, but that private sector investment also declined sharply.

Many possible explanations exist for the sharp drop-off in investment rates, though few if any careful studies.<sup>33</sup> One likely factor is the rise in political uncertainty about Taiwan's future following the U.S. recognition of the People's Republic of China, and the breaking of

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<sup>30</sup> By contrast, German foreign exchange reserves at the end of 1987 were valued at 6.9 percent of GNP and Japanese only at 3.4 percent of GNP.

<sup>31</sup> These capital controls are now being liberalized, in part to facilitate the diversification of foreign assets, and in part because the very large stock of foreign exchange reserves is the focus of considerable political pressure from abroad for Taiwan to expand domestic demand. For details of Taiwan's capital controls and their implications for the accumulation of foreign exchange reserves, up through mid-1987, see Seth, Rama and Robert N. McCauley, "Financial Consequences of New Asian Surpluses," Federal Reserve Bank of New York *Quarterly Review*, vol. 12, no. 2, Summer 1987, pp. 32–44.

<sup>32</sup> Of course, the term "depressed" is relative to 1980 levels, and not relative to the rates of other countries. With an investment rate of over 19 percent of GNP, investment is still higher than the average of Latin American countries, for example.

<sup>33</sup> We have not been able to locate any detailed, English-language statistical analyses of investment spending in Taiwan.

Table 7  
Taiwan National Income and Investment, 1980–87  
NT\$ Billion

	GDP	Gross Fixed Capital Formation	Source of Investment Spending		
			Government	Public Enterprises	Private
1980	1407	456	66.9	155.9	233.6
1981	1749	494	75.5	161.0	257.0
1982	1860	488	84.3	165.6	238.7
1983	2041	472	78.2	148.8	245.3
1984	2255	484	81.9	125.9	276.5
1985	2357	449	85.8	112.0	251.0
1986	2701	500	98.6	121.9	280.3
1987	3013	597	112.3	133.6	350.7
As Shares of GDP (percent):					
1980		32.4	4.8	11.1	16.6
1981		28.2	4.3	9.2	14.7
1982		26.2	4.5	8.9	12.8
1983		23.1	3.8	7.3	12.0
1984		21.5	3.6	5.6	12.3
1985		19.0	3.6	4.8	10.6
1986		18.5	3.7	4.5	10.4
1987		19.8	3.7	4.4	11.6

Source: *Statistical Yearbook of the Republic of China*, 1988.

relations with Taiwan. A second factor is the external shocks of the late 1970s and early 1980s. The rise in oil prices and world interest rates led the conservative, inflation-averse government of Taiwan to cut back sharply in government investment projects. A third factor was the rise in protectionist barriers to Taiwanese exports in the developed economies, leading many Taiwanese firms to shift investments to overseas markets in order to protect market access.<sup>34</sup> Finally, it has been suggested that inadequate domestic financial intermediation has led to difficulties in channeling private domestic savings to domestic investment, with the result that a rise in private savings is channelled not into private domestic investment, but into government bonds that are the

<sup>34</sup> In the textile sector, for example, which accounted for 23 percent of Taiwan's exports in 1980, an estimated 90.9 percent of Taiwan's textile exports to the U.S. market were subject to quota restrictions. See Table A5, in Kuo-shu Liang and Ching-ing Hou Liang, "Development Policy Formation and Future Policy Priorities in the Republic of China," *Economic Development and Cultural Change*, vol. 36, no. 3, Supplement, April 1988, pp. S67–S102.

counterpart of the government's accumulation of foreign exchange reserves.<sup>35</sup>

As in Korea, Taiwan benefitted substantially from the favorable oil and exchange rate shocks of the mid-1980s,<sup>36</sup> though the interest rate shocks would appear to have been detrimental rather than beneficial, in view of Taiwan's net creditor status. Also, like Korea, Taiwan has engaged in substantial trade liberalization in recent years, putting into severe doubt the suggestion that Taiwan's growing trade surpluses in the mid-1980s are somehow importantly related to its trade policies.

### *Korea and Taiwan in the Global Adjustment Process*

In response to the large trade surpluses of Taiwan and Korea, and the rapid growth of these economies, U.S. government officials and many economists insist that these countries should participate more actively in international policy coordination to help resolve the large financial imbalances in the world economy. Two kinds of arguments are typically given. First, it is argued that these economies can play a major role in resolving the U.S. external deficit by undertaking policies to reduce their own large surpluses. Second, it is argued that as the U.S. economy shifts its policies towards fiscal contraction, along Gramm-Rudman-Hollings lines, it will be necessary for Korea and Taiwan to move to domestic demand-led growth to compensate for the fall in demand from the United States.

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<sup>35</sup> Specifically, suppose that savers choose government securities as their only financial investment instrument, because of the poor quality of domestic financial intermediaries. A rise in the household propensity to save leads in the first instance to a fall in yields on government securities, with no reduction in the cost of borrowing for domestic firms (who lack access to the increased household savings). The rise in savings (and equivalent fall in domestic spending) also leads to a fall in imports and a rise in exports. Given the existence of international capital controls in Taiwan, exporters must sell their foreign exchange to the central bank in return for domestic currency, while importers must buy the foreign exchange from the central bank using domestic currency. The result of the widening of the trade surplus is therefore a greater net flow of foreign exchange sold to the central bank, and a more rapid flow increase of the money supply held by the private sector. In practice, the central bank sterilizes the monetary consequences of the trade surplus by selling government bonds to the private sector in return for their increased money holdings. The result, therefore, of the increased savings rate in this scenario is: a more rapid accumulation of government bonds by the private sector; a larger trade surplus; a more rapid accumulation of foreign exchange reserves at the central bank; and little, if any, increase in the domestic investment rate.

<sup>36</sup> As with Korea, the Taiwanese dollar depreciated sharply vis-à-vis the yen. Overall, Taiwan depreciated by 9.0 percent between 1984 and 1986, according to the Morgan Guaranty Index, but it appreciated sharply between 1986 and 1988, reversing the earlier real depreciation.

A typical expression along these lines was found in a widely circulated statement of 33 economists issued in December 1987 (pp. 11–12):<sup>37</sup>

We believe that the NICs, notably Taiwan and to a lesser degree Korea, should aim to greatly reduce their current account surpluses over the next three to five years. These countries have achieved the most enviable development records in the world over the past twenty years, and there is no reason why they cannot continue expanding their exports rapidly. However, in light of their relatively low levels of per capita income, the impressive rates of return on domestic investment and the threats posed to their monetary stability by continued large surpluses, it would be economically and politically unwise for them to continue running such large surpluses—which now exceed 20 percent of GNP for Taiwan and 8 percent of GNP for Korea. Thus, they need sharp increases in imports and some diversion of productive output to the domestic market.

Three sets of measures would seem appropriate for these countries. First, for Taiwan and Korea, there remains considerable scope to extend the program of trade liberalization. . . . Second, all these countries have enormous opportunities for further increases in domestic investment and thus in internal demand. . . . Third, some further currency appreciation will undoubtedly be needed for the NICs to complete these adjustments.

These arguments may be correct in part, but we suggest that they are improperly motivated. To the extent that the ANIE policies should be changed, they should be changed as a response to the domestic needs of those economies, not according to the perceived needs of the global economy or the U.S. economy. *The effect on the rest of the world of the recommended changes in Korea and Taiwan are simply too small to justify a major change in their policies on the behalf of other countries.*

The motivation for the recommended changes becomes even worse when Korean and Taiwanese surpluses are attributed to unfair currency manipulation. We have already seen that the trade surpluses emerged not from currency manipulation per se, but from a variety of more basic macroeconomic factors. These include rising savings rates; a sharp fall in Taiwanese investment rates starting in the early 1980s; the high productivity of investments in Korea and Taiwan that led to a spurt of real output in the mid-1980s; and favorable terms of trade shocks in the mid-1980s. It is striking that the United States accuses these countries of unfair exchange rate manipulation despite the fact that their currencies have actually *appreciated* against the dollar during the 1980s, and during

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<sup>37</sup> See "Resolving the Global Economic Crisis: After Wall Street: A Statement by Thirty-three Economists from Thirteen Countries," Institute for International Economics, Special Report No. 6, December 1987.

the past three years. If these countries are guilty of unfair currency manipulation, what about the United States itself?<sup>38</sup>

The charge that currency manipulation (as opposed to other kinds of macroeconomic shocks) can explain the large Korean and Taiwanese surpluses can also be evaluated by examining the overall effective exchange rate movements of Korea and Taiwan. Interestingly, according to the Morgan Guaranty index, the real effective exchange rates for Korea and Taiwan in October 1988 are very close to their 1980–82 averages. They have not sharply depreciated, as is sometimes thought. With 1980–82 = 100, the index for Korea in October 1988 stood at 95.0 (that is, a 5 percent real depreciation during the 1980s), and the index for Taiwan stood at 99.8.<sup>39</sup>

Some of the widely recommended policy changes such as further sharp currency appreciation could do real harm to these economies, while yielding little if any benefit for the rest of the world. Nor should these countries necessarily boost internal demand to counteract a future slowdown in export growth to the U.S. market. A more reasonable strategy for these countries, and one that can emerge largely from market forces, is for Korea and Taiwan to reorient their trade to the Japanese market as the U.S. trade deficit shrinks. As we shall indicate, this process of shifting from the U.S. market to the Japanese market has already begun.

Our doubts about the wisdom of currency appreciation and fiscal expansion for Korea and Taiwan *for the sake of the U.S. trade balance* will first be made on purely theoretical grounds, and then on quantitative grounds using a global macroeconomic simulation model, which allows us to study the macroeconomic links between the Asian NIEs and the rest of the world. The theoretical doubts follow mainly from the small size of the Asian economies, from the difficulty of adjusting current account deficits and surpluses via exchange rate realignments alone, and from the inadvisability of running large budget deficits as a response to current account surpluses.

In 1987, the combined GNP of Taiwan and Korea was \$220 billion, or about *one-twentieth* of U.S. GNP, and *one-sixtieth* of OECD GNP. This means that enormous changes in Taiwan and Korea, relative to the size of these two economies, will be very small changes for the rest of the

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<sup>38</sup> The U.S. position seems problematic for other reasons as well. On the one hand, the United States is accusing other countries of currency manipulation for merely pegging closely to the dollar itself over some periods, but on the other hand, the United States is resisting the growing use of the yen as a reserve currency. But to the extent that countries find themselves attacked merely for linking to the dollar, they surely will begin pegging other currencies, such as the yen, in basic political self-defense.

<sup>39</sup> See Morgan Guaranty Trust Company of New York, *World Financial Markets*, no. 6, November 29, 1988, p. 13.



world. Moreover, since the U.S. economy only accounts for about 30 percent of the production of the rest of the world, any changes in Korea and Taiwan will not fall mainly on the United States in any case, but instead will be spread out among the entire industrial world (and even beyond).

Suppose, for example, that Korea and Taiwan increase the government budget deficit enough to reduce their combined trade surplus by \$10 billion. The necessary budget deficit would be at least \$10 billion, or over 4 percent of GNP.<sup>40</sup> The rest of the world will experience this budgetary shift as a rise of world interest rates, which will lead to a reduction of investment and rise in savings in other parts of the world, and a consequent \$10 billion improvement in the current account of the rest of the world. Since the U.S. economy constitutes about one-third of the rest of the world, a very rough measure would suggest that the U.S. current account deficit would fall by about \$3 billion, or 0.06 percent of U.S. GNP. The tradeoff looks pretty meager: a 4 percent of GNP budget deficit in Korea and Taiwan to spur a \$3 billion improvement in the U.S. external account. Nor would this small improvement tend to be permanent, since the budget deficit would probably have to be reduced eventually in Korea and Taiwan.

As a first approximation, the distribution of the current account improvement in the rest of the world will depend on the levels of investment and savings in other parts of the world, and not importantly on the trade patterns of Korea and Taiwan.<sup>41</sup> Even if in the first instance *all* of the increased net imports of Korea and Taiwan fell on U.S. products, the U.S. current account would still rise by much less than \$10 billion. The net shift of demand towards U.S. goods would lead to an appreciation of the dollar, and a redistribution of the rise in net imports to other parts of the world. As a result, the *bilateral* trade balance between the U.S. and the ANIEs would improve, but the U.S. deficit with other parts of the world would tend to worsen. As long as savings and investment rates in the United States and abroad do not depend overwhelmingly on the real exchange rate of the dollar and other currencies (an assumption that will be approximately true for *permanent*

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<sup>40</sup> This is because a given shift in the budget balance tends to have less than a one-for-one effect on the current account balance.

<sup>41</sup> In general, the response of the trade balance in any particular region will depend on the share of that region in total world absorption (consumption plus investment), and on the elasticity of absorption with respect to the world interest rate in that region compared to the interest elasticity for the rest of the world. Countries with free international capital mobility will tend to have a larger interest elasticity of absorption with respect to world interest rates (since in the case of capital controls, the links between world interest rates and domestic absorption are weakened). Therefore, after a fiscal expansion in Korea or Taiwan, countries in the rest of the world with free international capital mobility will tend to experience the largest rise in their external balance.

changes in exchange rates), but depend instead on the levels of real interest rates, the eventual distribution of current account surpluses outside Korea and Taiwan will be little affected by the direction of real trade.

The benefits for the United States of an exchange rate appreciation in Korea and Taiwan are likely to be even more modest. In fact, a significant exchange rate appreciation in Korea or Taiwan could damage those economies without improving the U.S. external balance in a sustained manner. An appreciation in Korea or Taiwan would tend to raise the real product wage and squeeze profitability in tradeables production. Demand for nontradeable goods in Korea and Taiwan would rise following an appreciation, raising employment in nontradeables sectors, but employment in the tradeables sectors would tend to fall by even more, and unemployment would likely ensue in the short run.<sup>42</sup> Thus, any reduction in the ANIE trade surplus would also be accompanied by rising unemployment.

Trade liberalization is often mentioned as a possible response to the trade surpluses in Korea and Taiwan, but as we have already pointed out several times, the relationship between trade policies and the external balance is very weak. Remember that Latin America, with highly restrictive trade policies, has run chronic trade deficits except in the periods of extreme debt crisis (during which they could not get credits to finance an external deficit). In general, *temporary* trade liberalizations tend to lead to a reduction of trade surpluses, as firms increase their purchases of imports during the period of temporary liberalizations. *Permanent* liberalizations, on the other hand, are likely to stimulate exports and imports about equally, with little net effect on the trade balance.

A final policy option for reducing the trade surplus is the elimination of capital controls. This was pushed by the U.S. government in bilateral negotiations with Japan in the mid-1980s, but with the opposite results from those intended.<sup>43</sup> With free international capital mobility, savings will flow from low-interest-rate regions to high-interest-rate regions. Thus, the direction of capital flows after liberalization will depend on the direction of the initial interest rate differentials before

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<sup>42</sup> This discussion assumes that the appreciation is carried out with exchange rate and monetary policy alone, and is not accompanied by a fiscal expansion. An exchange rate appreciation cum fiscal expansion might avoid the unemployment effect, but would generate the other problems associated with increased fiscal deficits.

<sup>43</sup> For a historical and analytical discussion of this episode in United States-Japan bilateral negotiations, and especially the unintended consequences of the U.S. negotiating position, see Jeffrey Frankel, "The Yen/Dollar Agreement: Liberalizing Japanese Capital Markets," *Policy Analyses in International Economics*, no. 9, Institute of International Economics, Washington, D.C., December 1984.

liberalization. In the case of Japan, the Japanese capital controls were bottling up Japanese savings in the domestic economy, and keeping Japanese interest rates lower than those in the rest of the world. Thus, when the capital flows were liberalized, Japanese savings flowed out, the yen depreciated, and the Japanese external surplus was *enlarged*.<sup>44</sup>

In the case of Korea and Taiwan, it is not exactly clear in which way the current capital control regime is now working. It appears that the capital controls are acting to prevent an *inflow* of capital that would help to finance a greater rate of domestic investment spending. In that case, capital market liberalization would indeed tend to reduce the current account surplus, and such a policy move might be advisable.<sup>45</sup> It is possible, however, (mainly in the case of Taiwan) that the capital controls are restricting the *outflow* rather than the *inflow* of capital. In that case, freer international capital movements could actually enlarge the trade surplus.

Liberalization of international capital movements would have one more important effect in Taiwan. Taiwanese current account surpluses would be reflected in the accumulation of a wider range of foreign assets, and not simply an accumulation of short-term, dollar-denominated, foreign exchange reserves of the central bank. The mountain of foreign exchange reserves now exposes Taiwan to political problems abroad and to extreme foreign exchange risk (from which Taiwan is already estimated to have lost \$12 billion U.S.). Liberalization would result in a much sounder and better diversified portfolio.

### *Welfare Considerations of Policy Moves in Korea and Taiwan*

The analysis so far suggests that the effects of actions in Korea and Taiwan on the United States are likely to be very small relative to their effects on the own economies. Thus, on purely economic terms, the decision of whether to reduce the trade surpluses should depend on tradeoffs mainly within the ANIE economies.<sup>46</sup> Here, the first fundamental question is whether the marginal social returns to domestic

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<sup>44</sup> In savings-investment terms, the liberalization caused Japanese interest rates to rise, thereby causing savings to rise and investment to fall, with a net effect of raising the current account surplus (equal to savings minus investment).

<sup>45</sup> It is still worth emphasizing, however, that policymakers in Korea are rightly worried about free capital mobility, and the costs of heavy foreign indebtedness, in view of the bad experience with foreign borrowing of most of the heavily indebted countries in the 1980s.

<sup>46</sup> Of course, the ANIEs have to calculate the costs and benefits of responding to various kinds of political pressures from the United States and other industrial countries. And those political pressures might have important economic consequences, such as the imposition of trade restrictions, or in the case of Korea, various pressures to assume some of the costs of military security that are now borne by the United States.

investment are higher than on foreign investment (in which case the domestic investment rate should be raised, and the current account commensurately reduced); and the second is whether the marginal social utility of current consumption is higher than the marginal social utility of wealth (in which case savings should be reduced by an incremental rise in current consumption spending).

These are very tricky questions, that cannot in general be determined by "market forces" alone. The course of economic development requires infrastructural investments and thus public-sector spending and non-market decisions. Indeed, it is a drop in public investment spending in Taiwan that accounts for a large proportion of the increase in the external surplus in the 1980s. It seems plausible, though far from proved, that Taiwan could usefully devote more domestic savings to public infrastructure and R&D investment rather than to an incremental accumulation of financial wealth.<sup>47</sup>

With respect to the savings-consumption decision, the marginal social utility of current consumption versus future consumption is even harder to gauge. In view of the turmoil of world financial markets, there may well be a social premium to eliminating external debt. Korea might thus be correct in trying to eliminate its net debtor status even if unrestricted private capital flows would lead to a net inflow of capital, and a smaller net surplus on the current account.

### *A Simulation Approach to U.S.-ANIE Macroeconomic Interactions*

In the final section of the paper, we attempt to document some of our skepticism about the usefulness of ANIE currency appreciations in overcoming the U.S. external deficits. For this purpose, we employ an extended version of the McKibbin-Sachs Global model (the APMSG model) which has been developed to model linkages between East Asia and the industrialized economies. The new ANIE and ASEAN sub-blocks of the model are multi-sector, computable general equilibrium sub-blocks, parameterized on the composite trade and output structure of the two East Asian regions. The work is preliminary and still in progress, but the results are promising enough to present some early results. A summary of the structure of the ANIE and ASEAN blocks is presented in the appendix.

The following points about the ANIE sub-block can be highlighted here. The ANIE economy is modelled as a four-sector economy: primary

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<sup>47</sup> The government of Taiwan has indeed been taking steps in this direction with its 14 major projects' that are being implemented. This is expected to significantly raise government investment expenditures during 1989-90.

commodities, light industry, heavy industry, and services. We assume capital controls on private inflows and outflows of capital (correct for the larger economies, Korea and Taiwan, but not for Singapore and Hong Kong). Trade is parameterized according to the 1986 direction of trade for the four countries. We assume, without econometric verification at this point, that the ANIE goods are highly substitutable for Japanese goods in the import demands of U.S. final demanders. Thus, an appreciation of the yen vis-à-vis the Asian currencies (denominated as the Asian Currency Unit, ACU, in the model), leads to a strong shift in demand from Japanese goods to ANIE goods.

We consider two main experiments using the model. First, we study the effects on the NIEs and on Japan and the United States of a 10 percent sustained nominal appreciation of the ACU. We assume that the monetary consequences of the appreciation are sterilized within the ANIEs, in the sense that the money supply remains constant after the appreciation.<sup>48</sup> Next, we study the effects on the ANIEs of implementing Gramm-Rudman-Hollings budgetary measures in the U.S. economy.

### *Appreciation of the ACU*

The results of the 10 percent further appreciation of the ACU are presented in table 8, where we report results for the ANIEs, the United States, and Japan (results for the other regions are not shown). The key points are as follows. The appreciation of the ACU leads to an initial decline in output of tradeables, as output prices fall relative to wages (thereby leading to a profit squeeze, and a reduction in employment), and to a rise in nontradeables output and employment. The rise in nontradeables demand comes essentially from a real balance effect: with a given nominal supply of money, the appreciation of the currency reduces domestic prices and raises the real money stock, which in turn depresses real interest rates and raises internal demand.<sup>49</sup> In the simulation model, employment in the three tradeables sectors (primary, light industry, and heavy industry) falls by 0.08 percent, 0.69 percent, and 0.26 percent, respectively, while service sector employment is

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<sup>48</sup> Specifically, the appreciation of the ACU leads to a reduction of the trade surplus in the ANIE region. With capital controls, and without sterilization, the reduced trade surplus would lead to a fall in the money supply relative to the baseline. This fall in the money supply is sterilized in the model by assuming that the central bank undertakes open market purchases of government bonds in order to offset the decline in the money supply.

<sup>49</sup> In an economy with high international capital mobility, the reduction in domestic interest rates would lead to a capital outflow, which in turn would reduce the domestic stock of nominal money balances, thereby causing domestic interest rates to rise quickly back to world levels. With capital immobility, domestic interest rates can remain lower than world interest rates without generating an immediate capital outflow.

Table 8  
Results of a 10 Percent Permanent Appreciation of the Asian Currency Unit (ACU)<sup>a</sup>

		1989	1990	1991	1992	1993
<u>Asian NIEs:</u>						
Value Added by Sector:						
Light Mfg. (X)	%GDP	-.69	.65	-.61	-.56	-.51
Heavy Mfg. (M)	%GDP	-.26	-.20	-.13	-.05	.02
Agric. & Mining (R)	%GDP	-.08	-.04	-.01	.03	.06
Services (S)	%GDP	-.01	.14	.29	.45	.60
Employment:						
labor in X	%	-.69	-.73	-.76	-.78	-.79
labor in M	%	-.26	-.33	-.39	-.42	-.45
labor in R	%	-.08	-.08	-.09	-.09	-.10
labor in S	%	-.01	-.14	-.24	-.32	-.37
Total	%	-1.03	-1.29	-1.48	-1.62	-1.71
Trade Balance in						
Constant ACU	%GDP	-3.86	-3.83	-3.79	-3.73	-3.70
Domestic Price	%	-4.38	-4.62	-4.86	-5.12	-5.38
Exch Rate (\$/ACU)	%	10.00	10.00	10.00	10.00	10.00
Exports (volumes)						
to the US	%GDP	-1.65	-1.60	-1.53	-1.46	1.38
to Japan	%GDP	-.21	-.20	-.19	-.18	-.17
to the ROECD	%GDP	-.40	-.39	-.37	-.34	-.33
<u>U.S. Economy:</u>						
Trade Balance	%GDP	.04	.05	.05	.05	.05
Output	%	-.02	-.07	-.11	-.14	-.18
Domestic price	%	.02	.07	.13	.18	.23
<u>Japanese Economy:</u>						
Trade Balance	%GDP	.10	.10	.11	.11	.11
Output	%	.04	-.01	-.03	-.04	-.05
Domestic price	%	.01	.05	.09	.12	.14

% = percent deviation from base year value

%GDP = Change as a percent of GDP from base year value (1986)

<sup>a</sup>See the appendix for a description of the model.

unaffected in the first period, and then rises rapidly. Overall, total employment falls on impact of the devaluation by 1.0 percent. This fall in employment would presumably show up partly as open unemployment, partly as a reduction of working hours, and partly as a decline in the labor force.

The decline in production of tradeables combined with the internal demand increase causes the trade balance and current account to deteriorate. The trade balance falls by 3.9 percent of GNP on impact, or by approximately \$8 billion. As already discussed, this decline in the trade surplus is matched by an identical rise in the trade surplus in the rest of the world. In Japan, the trade surplus rises by 0.1 percent of

Japanese GNP, and in the United States, the trade surplus rises by 0.04 percent of GNP, or by approximately \$1.8 billion. Note that U.S. imports from the ANIEs fall by roughly twice this amount. However, the decline in imports from the ANIEs is balanced by an increase in imports from Japan and other parts of the world.

Thus, a sizable, 10 percent appreciation of the ACU has the effect of substantially reducing ANIE employment on impact, by 1 percent of labor input, while at the same time improving the U.S. trade balance by a mere \$1.8 billion. Assuming that the monetary effects of the trade balance reduction are fully sterilized, the appreciation has a persisting effect on the trade balance.

### *Gramm-Rudman-Hollings Budgetary Policies in the United States*

Recently, some advocates of fiscal expansion in the ANIEs have urged domestic demand expansion as a counterweight to declining U.S. demand for ANIE exports. The argument goes, correctly in part, that the United States cannot be an engine of growth for the ANIE economies in the next few years, since budgetary austerity (not to mention protectionist sentiment) is sure to slow the increases in U.S. demand for imports from the ANIEs. The argument is that fiscal expansion in the ANIEs will be necessary to counteract the contractionary effects of U.S. policy changes.

There are two important points in response to this argument. First, alternative policy responses are available to the ANIE economies. One of the simplest is to reduce internal interest rates through a *monetary* (rather than fiscal) expansion, in step with the reduction in international interest rates that will come from a tighter budget in the United States. If the ANIEs match the reduction in interest rates that will be experienced in world markets if the United States adheres to Gramm-Rudman-Hollings, then internal demand might expand adequately to counteract any contraction coming from U.S. fiscal austerity.

Second, and equally important, the decline in U.S. demand will tend to be matched by a rise in demand in other parts of the world, thereby compensating Korea and Taiwan partly or wholly for the decline in the growth of the U.S. market. Note that this effect will be fairly automatic. As the U.S. budget deficit is reduced, world interest rates will fall. For other regions in the world with high capital mobility between local and world markets (especially Japan and the European Community), interest rates will tend to decline in step with those in the United States. This fall in interest rates in Japan and Europe will tend to contribute to a rise in internal demand in these economies, which will fuel a higher demand for imports from the ANIEs.

Thus, an important part of the adjustment to a falling U.S. budget deficit will be a *shift in ANIE exports* from the U.S. market to Japan and Europe. In fact, this shift is already occurring in 1987–88, especially towards Japan, given the strong internal demand in Japan and Europe. Korean exports to Japan, for example, have leaped by 50 percent in dollar terms comparing the first eight months of 1988 with the same period in 1987. This shift is naturally facilitated by the fact that the won is tied closely to the dollar, so the dollar-yen depreciation that accompanies the U.S. retrenchment leads to a won-yen depreciation. The cheaper won has allowed Korea to penetrate deeply into Japanese markets. The same phenomenon of growing exports to Japan is also visible with the Taiwan economy.

The simulation results shown in table 9 for a Gramm-Rudman-Hollings budgetary policy bear out these arguments. The simulation traces out the effects of a permanent cut in U.S. government spending of 3 percent of GNP, spaced out over five years with a cut of 0.6 percent of GNP each year. As the U.S. fiscal deficit is reduced, the Federal Reserve is assumed to expand the money supply sufficiently to stabilize U.S. employment levels. As expected, the reduction of the budget deficit has a significant effect on the U.S. external balance, reducing the trade deficit by about 0.9 percent of GNP in the fifth year. On impact the dollar depreciates in real terms against the major currencies, by 4.8 percent against the ECU and 7.1 percent against the yen.

As a result of these policy changes, ANIE exports to the United States decline, more for final goods than for intermediate goods.<sup>50</sup> At the same time, however, exports to Japan and to Europe rise markedly, since the ACU depreciates against the yen and the ECU (by 8.4 percent vis-à-vis the yen by the third year), and since domestic absorption in Japan and Europe is increased by the decline in world interest rates following the U.S. budget cut. On balance, interestingly, the trade balance and overall employment are estimated to *increase* after the U.S. policy shift, despite the loss of market growth in the United States.

This exercise points up a valid policy concern for the United States: the openness of the *Japanese* market for East Asian export goods (particularly finished goods). A natural part of the adjustment process in future years will be a shift in ANIE export markets from the United States to Japan. This, we have already seen, has been occurring in the past 18 months. Perhaps not surprisingly, many Japanese producers are starting to resist the inflow of manufactured goods from the East Asian

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<sup>50</sup> The U.S. demand for *final* goods imports from the ANIE bloc is related to U.S. absorption, which falls with the cutback in the budget deficit. The U.S. demand for *intermediate* goods from ANIE, on the other hand, is related to U.S. GDP, which does not fall when the budget is contracted. Thus, the decline in demand for intermediate goods is less than the decline in demand for final goods.



Table 9  
Gramm-Rudman-Hollings Phased Reduction in the U.S. Deficit

		1989	1990	1991	1992	1993
<u>Asian NIEs:</u>						
Value Added by Sector:						
Light Mfg. (X),	%GDP	.01	.05	.11	.17	.24
Heavy Mfg. (M)	%GFP	.02	.07	.12	.17	.22
Agric. & Mining (R)	%GDP	.04	.06	.07	.09	.10
Service(s) (S)	%GDP	.06	.12	.19	.27	.34
Employment:						
labor in X	%	.01	.06	.12	.18	.25
labor in M	%	.02	.07	.13	.19	.24
labor in R	%	.04	.05	.07	.08	.10
labor in S	%	.06	.13	.21	.29	.38
Total	%	.14	.32	.52	.75	.97
Trade Balance in						
Constant ACU	%GDP	-.01	.09	.20	.31	.43
Domestic Price	%	.78	1.15	1.57	2.01	2.38
Exchange Rate (\$/ACU)	%	2.40	3.28	4.12	4.89	5.41
Exports (volumes)						
to the US	%GDP	-.54	-.70	-.82	-.93	-.97
to Japan	%GDP	.39	.50	.60	.67	.72
to the ROECD	%GDP	.29	.41	.52	.59	.63
<u>U.S. Economy</u>						
Trade Balance	%GDP	.49	.63	.75	.84	.89
Output	%	-.36	-.42	-.42	-.37	-.26
Domestic Price	%	.12	.61	1.14	1.66	2.07
<u>Japanese Economy:</u>						
Trade Balance	%GDP	-.65	-.79	-.90	-.99	-1.05
Output	%	.04	.40	.58	.76	.93
Domestic Price	%	-.31	-.84	-1.31	-1.72	-2.06

% = percent deviation from base year value

%GDP = Change as a percent of GDP from base year value (1986)

economies, and there are legitimate fears of a protectionist backlash from Japanese producers. Certainly, an important part of Japan's global responsibilities in the future adjustment process is to maintain open markets for its East Asian neighbors.

## Conclusions

Balassa and Williamson's 1987 study of the ANIEs is aptly titled, "Adjusting to Success: Balance of Payments Policy in the East Asian NICs." Indeed, as we have shown at considerable length, the story of the East Asian economies (not only the ANIEs, but also the ASEAN

countries) is one of remarkable success. And almost all of it was earned. The evidence suggests strongly that the fruits of success came despite adverse external shocks for much of the period, and emerged through a long process of heavy investment, responsible macroeconomic policy, and an appropriate trade regime.

Our concern is that the ANIEs may now become a scapegoat for the failure of U.S. macroeconomic policy to display the same farsightedness. The U.S. Treasury Department report to Congress of October 1988 attributes much of the ANIE success to unfair trade and exchange rate practices, rather than to deeper macroeconomic forces that are clearly at play. Ironically, the charge of exchange rate manipulation comes despite the fact that these currencies are actually appreciating against the dollar (quite sharply in the case of Taiwan). Moreover, contrary to a common theme that unfair trade practices explain the large surpluses of this part of the world, stands the evidence that the rise in trade surpluses has occurred during a period of vigorous trade liberalization.

As we suggest in the final section, it may be wise for the East Asian economies to expand internal demand on their own behalf, especially if there are infrastructural investments that can be undertaken with a high social rate of return. It is clear, however, that even significant actions by Taiwan and Korea on their fiscal or exchange rate policies would do little to help restore external balance for the United States, and any attempt to guide the policies of these countries according to the perceived needs of the U.S. economy could do significant harm to their economies. Perhaps as important as internal demand expansion is a shift of ANIE export growth from the U.S. market to Japan. U.S. diplomacy will be useful in this regard in stressing to Japan the importance of absorbing a much larger volume of finished-good imports from the East Asian countries.

## *Appendix: Outline of the Asia-Pacific MSG Model*

This appendix provides a brief description of the key behavioral equations underlying the Asia-Pacific MSG model discussed in the text. A detailed discussion of features pertinent to the Asian region is available in Sundberg (1989). A complete description of the developed country blocs of the model and the solution techniques it employs is available in McKibbin and Sachs (1989) and McKibbin (1986).

The APMSG model is a dynamic general equilibrium model of a seven-region world economy. There are three developed country blocs: the United States, Japan and the rest of the OECD countries (ROECD). Developing countries have been divided into three regions comprising the export-led high growth economies of East Asia (the Asian NIES), the middle-income developing countries of ASEAN (Indonesia, Malaysia, the Philippines and Thailand), and the rest of the developing world (ROW). The member countries of OPEC are also treated as a separate bloc (excluding Indonesia).

The behavioral structure of the developed country blocs in the model are characterized by i) efficient asset markets in which asset prices are determined assuming rational expectations, risk neutrality, and intertemporal arbitrage conditions; ii) intertemporally profit-maximizing firms in which capital stocks adjust according to a "Tobin's q" model of investment; and iii) different wage-price dynamics in the United States (nominal rigidities), Japan (market clearing with a one-period lag), and the ROECD (more forward-looking, slow market clearing behavior).

The model solves for a full intertemporal equilibrium in a linearized form. Both the developing and developed regions carefully observe the key stock-flow relationships in the world economy. Government and current account deficits accumulate into public debt or changes in the net foreign asset position, serviced at variable rates of interest, and physical investment accumulates into capital stocks.

The Asian NIEs and ASEAN blocs are similarly specified. There are four productive sectors, comprising light manufacturing (X), heavy manufacturing (M), agriculture and mining (R), and services (S). For the purposes of trade classification these may be thought of as i) consumer manufactures and industrial intermediates, ii) capital goods, iii) primary commodities and minerals, and iv) non-tradeables, respectively. Output from the first three of these sectors is traded. In addition, oil is treated as a separate traded commodity.

### *Production*

The basis for aggregate supply in the economy is the representative firm in each sector which maximizes revenues. Production is specified using a nested, multi-input CES production function of value-added

inputs and an intermediate input bundle (see Bruno and Sachs (1985) for a careful discussion of this production specification).

$$Q_i = [\beta_{1i}(V_i)^{\rho_{1i}} + (1-\beta_{1i})(N_i)^{\rho_{1i}}]^{1/\rho_{1i}} \quad (1)$$

$$V_i = [\beta_{2i}K_i^{\rho_{2i}} + (1-\beta_{2i})L_i^{\rho_{2i}}]^{(1/\rho_{2i})} \quad \beta_{2i} = \frac{1}{1 + \left(\frac{\mu_{2i}}{1-\mu_{2i}}\right)^{(1-\rho)/1}} \quad (2)$$

$$N_i = [\beta_{3i}(X_i)^{\rho_{3i}} + \beta_{4i}(M_i)^{\rho_{3i}} + \beta_{5i}(R_i)^{\rho_{3i}} + \beta_{6i}(S_i)^{\rho_{3i}} + \beta_{7i}(IM)^{\rho_{3i}} + (1-\beta_{3i}-\beta_{4i}-\beta_{5i}-\beta_{6i}-\beta_{7i})(E_i)^{\rho_{3i}}]^{(1/\rho_{3i})} \quad (3)$$

where  $V_i$  = value added in sector  $i$

$K_i$  = capital stock of sector  $i$

$X_i$  =  $X$  input to the  $i$ th sector

$IM_i$  = imported inputs to sector  $i$

$E_i$  = oil input to sector  $i$

$N_i$  = intermediate bundle in sector  $i$

Solution of this yields the familiar derived demand for labor and intermediate inputs equating the marginal product of each input to its marginal cost. Total labor demand ( $L^D$ ) is the sum of the sectoral demands. Imported inputs are a composite made up of inputs from the three developed country blocs. Imports are treated as imperfect substitutes in production, and hence enter as a separate, non-competing input. This is the familiar Armington assumption.

### Investment

The capital stock in each industry is a function of the current period level of physical investment and the rate of depreciation. A composite 'investment good' is specified with inputs from each sector as well as imported capital goods.

$$K_{i(t+1)} = J_{i(t)} + K_{i(t)}(1 - \delta - \vartheta) \quad \forall i, \quad i = X, M, R, S. \quad (4)$$

$$I_i = (I_{i(x)})^{\phi_1} (I_{i(m)})^{\phi_2} (I_{i(s)})^{\phi_3} (I_{i(im)})^{(1-\phi_1-\phi_2-\phi_3)} \quad (5)$$

$$I_{i(im)} = (I_{i(us)})^{\phi_4} (I_{i(j)})^{\phi_5} (I_{i(o)})^{(1-\phi_4-\phi_5)} \quad (6)$$

Gross fixed capital formation is determined by two terms, a simple static expectations version of Tobin's 'marginal  $q$ ' and a term representing cash flow constraints on firms. Weights on these terms ( $\alpha$  and  $\gamma$ ) need not sum to unity.

$$q_{ti} = (MPK_{ti} \cdot P_{ti}^I) / (P_t^I \cdot r_t) \quad \text{and} \quad MPK_{ti} = \frac{\partial Q_t^i}{\partial V_{ti}} \cdot \frac{\partial V_t^i}{\partial K_{ti}} \quad (7)$$

$$I_i = \alpha_i \cdot [(q_i - 1) / \phi_o] \cdot K_i + \gamma_i \cdot (Q^i - L^i \cdot W - P_n^i \cdot N^i) / P^I \quad (8)$$

$$P^I \cdot I^i = [1 + (\phi_o / 2)(J^i / K^i)] \cdot P^J \cdot J^i \quad (9)$$

where  $J_i$  = gross investment in sector  $i$  (less adjustment costs)

$I_i$  = gross investment in sector  $i$

$I_{im}$  = imported inputs in the investment good

$P_i$  = log price of the investment good

$\delta$  = the rate of capital depreciation (equal in all  $i$ )

$\vartheta$  = the rate of population growth

Gross investment ( $I_i$ ) includes adjustment costs, and  $P_i$  is the log price of the investment good using a simple weighted average of its log input prices. Gross investment differs from net investment by adjustment costs. A rising marginal cost of investment, due to installation costs, is a linear function of the rate of investment.

### Consumption and Savings

Consumption is specified as disposable income less savings. Time separability and intertemporally optimizing agents are not assumed as in the OECD regions, since neither human nor financial wealth are currently arguments of consumption demand. This does not, however, change our basic results. Savings are a fixed portion of disposable income plus a term allowing for savings response to the real interest rate.

$$S_t^P = (\alpha^s + \alpha^r r_t) \cdot (Y_t - T_t) \quad (10)$$

$$C_t = Y_t - T_t - S_t^P \quad (11)$$

where  $S_t^P$  = private savings

$T_t$  = total taxes

Consumption is divided between output in each sector according to the usual consumer's maximization problem with log utility. Total consumption ( $C$ ) is expressed as a nested CES function similar to (2), (3) and (4) above, divided between domestic ( $C_d$ ) and imported ( $C_{im}$ ) final consumption goods. All goods are normal, and utility functions are continuous and concave. Imported consumption goods are from each other world region except OPEC.

### Prices

Prices are derived from the dual to the CES functions or in the case of Cobb-Douglas demand they are share-weighted indices of the constituent prices. For example:

$$P^c = (\beta_j^{\sigma_i} \cdot P^{d(1-\sigma_i)} + (1-\beta_j)^{\sigma_i} \cdot P^{im(1-\sigma_i)})^{1/(1-\sigma_i)} \quad (12)$$

and

$$P_{im} = \alpha_u P_u + \alpha_j P_j E_j^u + \alpha_o P_o E_o^u \quad \sum_i \alpha_i = 1 \quad (13)$$

Wages adjust according to an augmented Phillips curve. Nominal wages respond to domestic price inflation ( $\Pi$ ), the terms of trade ( $P_{ex}/P_{im}$ ) and the level of domestic employment.

$$W_{t+1} = W_t + \left(\frac{L_t^d}{L_t^s}\right)^{\lambda_1} (\Pi_t)^{\lambda_2} \left(\frac{P_{ex}}{P_{im}}\right)^{\lambda_3} \quad (14)$$

### Government and Monetary Accounts

Only the government undertakes external borrowing, and there is zero private capital mobility. Government revenues are derived from 1) lump sum taxes out of labor and capital income of the private sector, 2) interest earnings on the stock of net foreign assets of the central bank, and 3) seigniorage taxes arising from the issue of currency. Government expenditures fall on the domestic service sector and taxes are set to balance the government budget at all times. External debt (or foreign assets) are consolidated for the government and central bank. Government spending is set as a share of GNP, and varies only with changes in debt service or investment income.

$$G_t = \bar{g} + r_t^i \cdot (B_t - R_t) = \bar{g} + r_t^i \cdot (D_t) = T_t \quad (15)$$

where  $D_t$  = net national debt (external debt minus reserves)  
 $T_t$  = tax revenues

The government pegs the exchange rate to a currency basket (.65 on the \$US, .25 on the yen, and .10 on the ECU). Money supply thus adjusts endogenously to changes in foreign assets of the central bank and a standard Goldfeld-type money demand specification is used.

### Model Calibration and Specification of Trade Flows

One of the model's main attractions is its ability to handle different categories of traded commodities within the dynamic, intertemporally optimizing MSG framework. Four product categories are exported by

developing countries: 1) primary goods (agriculture and mining), 2) consumer manufactures and manufactured industrial intermediates, 3) capital goods, and 4) petroleum. Demand for imported primary goods and industrial intermediates is derived from the firm's optimization problem in the importing country, demand for imported consumer goods is derived from utility maximization, and capital goods are derived from the firm's intertemporal investment decision. Oil exports from the ASEAN countries have been handled separately from these categories and are priced according to the OPEC oil price. Disaggregation of goods to match these commodity characteristics was done following the U.S. Bureau of the Census end-user classification system. A mapping was then made to the SITC classification (at the 2-digit level) as reported in the United Nations trade data.

The model has been initialized around 1986 and trade flows reproduce the actual levels and direction of trade between regions in that year. For example, the pattern of trade between Japan, the United States and the Asian NIEs reflects the prevalence of imported capital goods and industrial intermediates by the ANIEs and exports of consumer manufactures to the US market. The ASEAN countries similarly export mainly raw materials to Japan and light manufactured goods to the United States. Shown below is the 1986 trade matrix used for initializing the model.

*1986 Regional Trade Matrix (in US\$ millions)*

Importer:	U.S.	Japan	ROECD	ASEAN	ANIEs	OPEC	ROW
Exporter:							
U.S.	*	22631	107017	5319	18743	10877	23464
Japan	66684	*	35356	8231	31370	11253	21698
ROECD	145238	21228	*	7496	18347	37062	113680
ASEAN	9230	12462	8097	*	8280	1100	2900
ANIEs	49279	13530	19821	8534	*	4588	17600
OPEC	14610	25830	23467	2300	7457	*	5275
ROW	37861	14628	106138	4000	20939	9413	*

These aggregate trade flows are disaggregated into the corresponding sectoral outputs and demand categories mentioned above. The 1986 exports and imports of the Asian NIEs are shown below.

*Structure of ANIE Exports 1986*

	United States	Japan	ROECD
<i>Exports</i>			
Food & intermediates	2.3%	33.6%	29.1%
Light manufactures	56.7	41.9	42.3
Capital goods	41.0	24.5	28.6

The Asian NIE imports are disaggregated into: fuels, 4 percent (from ASEAN and OPEC); other raw materials, 6.8 percent (from ASEAN and ROW); machinery and transport equipment, 30.4 percent; and other manufactured goods, 58.5 percent. Of total imports, 6.3 percent are consumer goods, 9.8 percent are investment goods (used in production of investment goods), and 84 percent are intermediate manufactured and raw inputs to production. This last category is very sizable since it includes, amongst other things, imported components used by assembly industries, often for re-export.

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# Discussion

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Sachs and Sundberg have written a wide-ranging, insightful analysis of balance of payments performance in the East Asian countries. They trace the success of the Asian newly industrializing economies (ANIEs) and ASEAN countries to a variety of factors, but emphasize three in particular: high savings rates, conservative fiscal policies, and outward-oriented trade policies. They show how these factors combined to produce growth and trade performance far beyond that achieved in other developing economies.

Sachs and Sundberg focus much of their attention on the two largest ANIEs, Korea and Taiwan. Of all the countries in the region (leaving aside Japan), these two have had the largest trade surpluses as well as the largest bilateral surpluses with the United States. The surpluses have drawn the attention of U.S. policymakers, who have accused the ANIEs of manipulating their currencies to prevent them from appreciating relative to the dollar. Sachs and Sundberg point out that the Korean won and Taiwanese dollar have recently appreciated significantly in real terms, so this complaint by the United States may no longer be justified. They cite figures for real effective exchange rates published in Morgan Guaranty Trust's *World Financial Markets*, which show that the won reached a value of 95.0 in October 1988 on a base of 100 for the 1980–82 period, while the Taiwanese dollar reached a value of 98.8. Since the won and Taiwanese dollar have depreciated significantly relative to the yen, these figures for real *effective* exchange rates suggest that both currencies must have regained most if not all of their

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value in real terms relative to the dollar. This is an important development which should help to ease tensions between these countries and the United States.

Sachs and Sundberg argue that the source of large trade or current account surpluses in this region does not lie in manipulated exchange rates. Large surpluses are instead due to more fundamental factors involving intertemporal savings and investment behavior. High savings relative to investment, with savings rates as high as 30 to 30 percent in the four Asian NIEs, make possible the large current account surpluses. This emphasis on intertemporal factors is certainly justified, but it is also important to remember that current account surpluses require access to foreign markets. In the case of the Asian NIEs, access to the U.S. consumer market has been crucial to their success. In all four Asian NIEs, in fact, the *share* of exports going to the United States rose from 1980 to 1987. This was during a period when the total value (in dollars) of exports from these countries was more than doubling.

Increasing dependence on the U.S. market for exports coincided with increasing dependence on Japan for imports. These changes reinforced what I would like to term the *new triangular trade*: The Asian NIEs export consumer goods to the United States, while importing machinery and inputs from Japan. (The third side of the triangle is completed by the United States selling securities to Japanese investors, a phenomenon that is hardly sustainable in the long run.) Table 1 below reports trade between the NIEs, on the one hand, and the United States

Table 1  
Trade Pattern of Asian NIEs with the United States and with Japan, 1980 and 1987  
Percent of Total Exports or Imports

	Exports		Imports	
	1980	1987	1980	1987
Hong Kong Trade:				
United States	26.1	27.9	11.8	8.5
Japan	4.6	5.1	23.0	19.0
Korean Trade:				
United States	26.3	38.7	21.9	21.4
Japan	17.4	17.8	26.3	33.3
Singapore Trade:				
United States	12.5	24.4	14.1	14.4
Japan	8.1	9.1	18.0	20.4
Taiwan Trade:				
United States	34.1	44.1	23.7	22.1
Japan	11.0	13.0	27.1	34.3

Source: International Monetary Fund, *Direction of Trade Statistics*; Bank of Korea, *Economic Statistics Yearbook*, 1988; Council for Economic Planning and Development, Republic of China, *Taiwan Statistical Data Book*, 1988.

Table 2  
Export Patterns in the Manufacturing Sectors of Korea and Taiwan, Selected Years

Korean Exports by Sector as a Percentage of Total Exports			
	1970	1980	1987
Textiles	15.3	10.2	7.2
Clothing and Footwear	27.7	21.8	21.8
Metals and Metal Products	3.7	11.9	7.0
Transport Equipment	1.1	5.1	9.1
Electrical Machinery and Appliances	5.3	7.8	16.6

Source: Bank of Korea, *Economic Statistics Yearbook*, various issues.

Taiwan Exports by Sector as a Percentage of Total Exports			
	1970	1980	1987
Textile Products	31.7	22.6	16.7
Leather, Wood, Paper Products	10.5	8.4	7.8
Metals and Metal Products	6.3	6.4	7.4
Machinery and Transport Equipment	4.1	7.0	8.7
Electrical Machinery and Apparatus	12.3	18.2	25.2

Source: Council for Economic Planning and Development, Republic of China, *Taiwan Statistical Data Book*, 1988.

and Japan, on the other hand, for two years, 1980 and 1987.<sup>1</sup> The geographical pattern of flows is quite distinct. In the case of Hong Kong, for example, 27.9 percent of Hong Kong exports in 1987 are to the U.S. market, but only 5.1 percent to the Japanese market. At the same time, 19.0 percent of Hong Kong imports are from Japan compared with 8.5 percent from the United States. Korea and Taiwan rely even more on the U.S. market for their exports, 38.7 percent and 44.1 percent, respectively, although the pattern of trade is not quite so lopsided.

This penetration of the U.S. market would not have been possible if the ANIEs had not rapidly transformed the products being produced for export. During the 1980s, the share of traditional exports like textiles and footwear declined, while the share of more technically sophisticated products like electrical machinery increased. Sachs and Sundberg refer to this product transformation in their discussion of Korean exports. But the breakdown of Korean products in their table 6 is not as revealing as in table 2 above, which reports on the export patterns of Korea and Taiwan. The table distinguishes among five sets of products, with the last two categories representing the most sophisticated. In the case of

<sup>1</sup> This table updates a similar one appearing in *World Financial Markets*, January 1987.

Korea, exports of transport equipment have risen from 1.1 percent to 9.1 percent of their total exports, while exports of electrical machinery and apparatus have risen from 5.3 percent to 16.6 percent of total exports. The figures for Taiwan are a little less dramatic, but still reveal a very sharp pattern of product transformation. This product transformation is an essential part of the ANIEs' success story, as essential as their high savings rates to understanding the rapid increase in exports.

Sachs and Sundberg succeed in deflating claims by the U.S. government that one important way to reduce the U.S. trade deficit is for the Asian NIEs to reduce their own trade surpluses. The paper establishes very clearly that a reduction in the trade surpluses of the ANIEs would have only a marginal effect on U.S. trade or output. But they may underestimate the effects *on* these countries of a reduction in the U.S. trade deficit and the importance of the U.S. market to the continued expansion of Asian exports.

Consider how essential the U.S. market was to the expansion of exports in the 1980s. As table 3 below indicates, total exports grew by \$28.8 billion in Korea and by \$33.7 billion in Taiwan between 1980 and 1987. In the case of Korea, \$13.6 billion or 47.1 percent of the export growth was due to increases in exports to the United States. In the case of Taiwan, \$16.9 billion or 50 percent of the export growth was attributable to the U.S. market. The last column of the table places these figures in perspective by comparing them with the *level* of exports in 1987. In both Korea and Taiwan, about 30 percent of total exports in 1987 consisted of *new* exports to the United States. If growth in this market halts in the 1990s, or if this market contracts as the United States cuts its \$160 billion trade deficit, some other market or markets must replace the U.S. market. And it is not enough to find markets for the 1987 level of exports. The new markets must expand fast enough to replace the rapidly expanding American market of the early 1980s.

Table 3  
Growth in Exports by the Asian NIEs, 1980-87

From:	Growth in Total Exports (\$ Bil)	Growth in Exports to U.S. (\$ Bil)	U.S. Share of Total Growth (Percent)	U.S. Share As Percent of Exports in 1987
Hong Kong	\$28.8	\$ 5.5	19.0	11.3
Korea	28.8	13.6	47.1	29.3
Singapore	7.9	4.4	55.8	16.2
Taiwan	33.7	16.9	50.0	31.5

Source: International Monetary Fund, *Direction of Trade Statistics* and *International Financial Statistics*; for Taiwan, Council for Economic Planning and Development, Republic of China, *Taiwan Statistical Data Book*, 1988.

Where will these markets be found? The answer is that the other industrial countries must open their markets to East Asian exports. Hyundais must start appearing in increasing numbers on the streets of Tokyo and Paris as they have on the streets of New York (and Toronto). Exports to Japan and the European Economic Community have already begun to rise, spurred by the depreciation of the East Asian currencies with respect to European currencies and the yen. But the magnitude of the adjustment required is daunting, particularly because exports to these countries start from such a low base.

Japan will clearly have to play the leading role in the adjustment process. The triangular trade pattern between the Asian NIEs, the United States, and Japan should shift somewhat as the exchange rate changes initiated in 1985 begin to affect trade decisions. But the pattern of triangular trade is so pronounced that it is unlikely to be eliminated without painful adjustment on the part of the exporting countries. So the Asian exporters have a major task ahead of them if the United States takes decisive action to reduce its trade deficit. High savings rates will not be enough to keep exports expanding if the other industrial countries maintain barriers to exports from this region.