2 On Recent Movements of Japanese Current Accounts and Capital Flows

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2.1 Introduction

Persistent Japanese current account surpluses have been one of the sources of trade conflict between Japan and the United States. After the 1985 Plaza Agreement, the U.S. dollar overvaluation was corrected, and then the current account imbalance was corrected, with a long lag. Then yen appreciated from 260 yen/dollar in February 1985 to 150 yen/dollar in August 1986. Japan's current account surpluses, and trade surpluses, peaked in 1987 and then gradually declined for the rest of the 1980s. U.S. current account deficits peaked in 1986 and shrank for the rest of the 1980s. However, Japan's current account surpluses appear to have turned upward again in 1991, when their size doubled from the 1990 level and trade surpluses topped $100 billion for the first time. Has the trend of correcting current account imbalance been reversed?

More interesting, (net) long-term capital movement recorded an inflow of capital in 1991. During the 1980s, Japan used dollars earned via trade surpluses for long-term investment. It was said that current account surpluses were "recycled" into the international financial market as Japanese investors purchased sizable shares of U.S. government bonds, acquired "showcase" real estate and golf courses, and built new factories around the world. Now, "Japan money" seems to be in retreat, perhaps to help ease the difficulties in the domestic stock and real estate markets. Will this trend continue? How can it be

consistent to record large current account surpluses *and* long-term capital inflows?

The rest of this paper analyzes these questions. The next section is an overview of current account and capital movements in the second half of the 1980s. Section 2.3 points out problems in the definition of several items in the data. Section 2.4 examines the argument that current account and capital movements in 1990 and 1991 were affected by several transitory factors, including the Gulf War. I will present a counterfactual estimate of current accounts under the assumption that the Gulf War had not occurred. Section 2.6 discusses policy implications, and section 2.7 concludes with a summary.

2.2   Overview

Movements of current account and capital flows during the second half of the 1980s and in more recent years are summarized in table 2.1.[1] It shows that current accounts (line 1) peaked in 1987 and gradually shrank to a low in 1990. However, it increased again in 1991 and the first quarter of 1992. Trade surpluses recorded an all-time high in 1991. However, the current account/GNP ratio was still about 2 percent in 1991, only half of its 1986–87 level, as shown in figure 2.1.

2.2.1   Capital Account Movements

During the second half of the 1980s, Japan increased its long-term (net) assets (line 2) by more than its current account surpluses. The difference was made up by an inflow of short-term capital (line 3). It was a major characteristic of Japan's capital movement that Japan financed long-term investment by short-term borrowing. In a sense, the startling increase in Japanese investment abroad, or "Japan money," was funded partly by dollars earned by exporting automobiles, machine tools, and semiconductors, but partly by corporate borrowing, through Japanese banks, from the Euro-market.

However, this trend was reversed in 1991. Despite increased current account surpluses, long-term capital movement turned into net inflow. By definition, short-term capital and monetary movement balances (line 4) became a large outflow. This can be seen as "unwinding" the capital movement of the second half of the 1980s. Put differently, Japan as a nation repaid the short-term debt accumulated during the preceding years. Since this unwinding cannot continue indefinitely, long-term capital flow will become outflow sooner or later, provided that current account surpluses continue to exist. This answers our question: it shows how it can be consistent to have current account surpluses and long-term capital inflow.

Note that under short-term capital movement, short-term borrowing and in-

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1. For an analysis of current account movement in the first half of the 1980s, see for example Ueda (1988) and Ueda and Fujii (1986).

**Table 2.1**   **Current Accounts and Capital Flows (billion $ U.S.)**

	1986	1987	1988	1989	1990	1991	1992:1
1. Current accounts	85.8	87.0	79.6	57.2	35.8	72.9	27.4
Trade Balance	92.8	96.4	95.0	76.9	63.5	103.0	31.1
Exports	205.6	224.6	259.8	269.6	280.4	306.6	80.2
Imports	112.8	128.2	164.8	192.7	216.8	203.5	49.1
Service balance	−4.9	−5.7	−11.3	−15.5	−22.3	−17.7	−2.5
Transportation	−2.5	−6.1	−7.4	−7.7	−9.5	−10.5	−2.7
Travel	−5.7	−8.7	−15.8	−19.3	−21.4	−20.5	−5.9
Investment income	9.4	16.7	21.0	23.4	23.2	26.7	9.1
Other	−6.1	−7.6	−9.1	−11.9	−14.6	−13.9	−3.1
Transfers	−2.1	−3.7	−4.1	−4.2	−5.5	−12.5	−1.2
2. Long-term capital	−131.5	−136.5	−130.9	−89.2	−43.6	37.1	13.4
Assets (Japanese capital)	−132.1	−132.8	−149.9	−192.1	−120.8	−121.4	−9.2
Securities	−102.0	−87.8	−86.9	−113.2	−39.7	−74.3	−1.1
Stocks	−7.0	−16.9	−3.0	−17.9	−6.3	−3.6	4.0
Bonds	−93.0	−72.9	−85.8	−94.1	−29.0	−68.2	−4.0
Yen-denominated bonds	−1.9	2.0	1.8	−1.2	−4.5	−2.5	−1.1
Direct investment	−14.5	−19.5	−34.2	−44.1	−48.0	−30.7	−4.0
Trade credits/loans extended	−11.1	−16.7	−22.1	−26.5	−21.5	−9.2	−2.6
Other	−4.5	−8.8	−6.6	−8.3	−11.6	−7.2	−1.2
Liabilities (foreign capital)	0.6	−3.7	19.0	102.9	77.2	158.5	22.6
Securities investment	0.5	−6.1	20.3	85.1	34.7	115.3	14.2
Stocks	−15.8	−42.8	6.8	7.0	−13.3	46.8	7.5
Bonds	−2.1	6.7	−21.6	2.4	17.0	21.2	3.5
External bonds	18.4	30.1	35.1	75.7	30.9	47.3	3.1
Direct investment	0.2	1.2	−0.5	−1.1	1.7	1.4	0.8
Trade credits/loans received	−0.1	−0.1	−0.1	17.8	39.1	38.1	8.2
Other	−0.0	1.3	−0.8	1.0	1.7	3.7	−0.6
3. Short-term capital	−1.6	23.9	19.5	20.8	21.5	−25.8	−21.0
4. Monetary movement balances	44.8	29.5	29.0	33.3	7.3	−76.4	−46.5
Private banks sector	58.5	71.8	44.5	8.6	−13.6	−93.5	−42.1
Official sector	−13.7	−42.3	−15.5	24.7	20.9	17.1	−4.4
Foreign reserves	−15.7	−39.2	−16.2	12.8	7.8	8.1	8.0
5. Errors and omissions[a]	2.5	−3.9	2.8	−22.0	−20.9	−7.8	7.6

Source: Bank of Japan, *Economic Statistic Annual, 1991* (Tokyo).
Note: Negative entries in capital and monetary movement denote outflow of capital from Japan.
[a]Errors and omissions are defined by line 5 = − (line 1 + line 2 + line 3 + line 4).

vestment in short-term assets acquired or sold by investors (not including banks and the government) are included, while under monetary movement balances, any bank transactions with nonresidents, any transactions between bank headquarters and foreign branches, and any government foreign asset transactions are recorded. Hence, a sudden increase in the outflow of short-term capi-
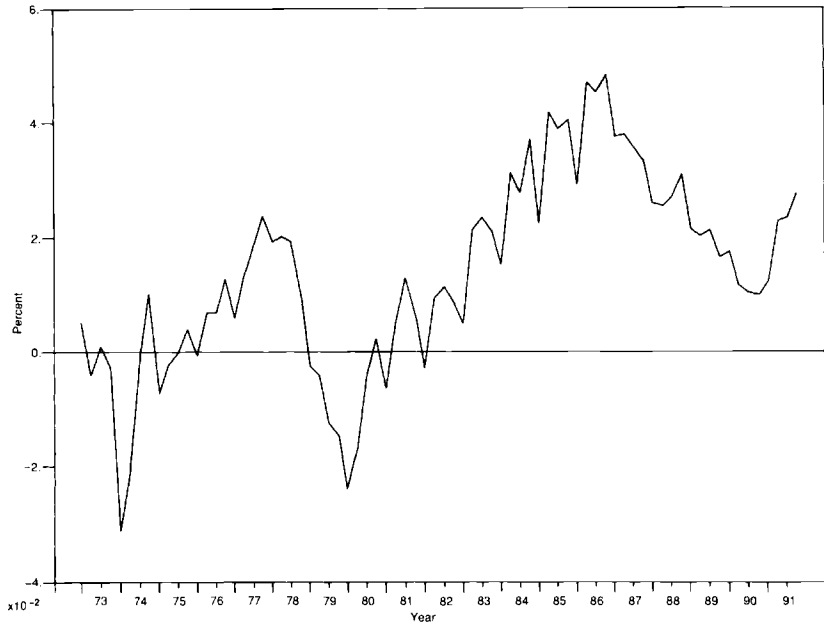
Fig. 2.1   Current account/GNP ratio

tal and monetary movement warrants scrutiny. This will be done in the next section.

Comparing the asset (Japanese capital investment outside Japan) and the liability (foreign capital investment in Japan) sides of long-term capital movement, we see that the change between 1990 and 1991 occurred mainly on the liability side. Namely, foreigners invested in Japanese government bonds and stocks as their portfolio selection. Thus, the switch in long-term capital accounts to net inflow has been caused mainly by the decisions of foreigners, and not by the withdrawal (selling out) of Japanese capital from markets abroad.[2] It is likely that foreigners have decided that Japanese stocks are underpriced (after a more than 50 percent fall in the stock market since its peak in December 1989) and that Japanese bonds have higher yields than some U.S. bonds.

In summary, the inflow shown by long-term capital movement in 1991 was caused partly by the repayment by Japanese capital portfolios of short-term debt from the second half of the 1980s, and partly by foreign portfolio shifts from bank deposits to long-term Japanese assets. Details will be analyzed in section 2.3.

2. This statement, however, may need to be qualified when we look at the figures for the first quarter of 1992. They show a dramatic decrease in Japanese investment abroad. This is partly a seasonal problem, that is, Japanese corporations sold foreign bonds and stocks to help dress up their yearly earnings reports (at the end of March) in the presence of decreasing stock prices.

2.2.2   Current Account Movement

The Japanese current account surplus reached $87 billion (over 4 percent of nominal GNP) in 1987. However, it dropped to only $36 billion (just over 1 percent of nominal GNP) in 1990. This gradual decrease of current accounts has been attributed partly to yen appreciation following the Plaza Agreement and partly to the strong growth of the Japanese economy which increased imports sharply.

Looking at trade statistics, presented in table 2.2, we can see that import volume increased substantially in the second half of the 1980s. It is also noticeable that trade volumes, both exports and imports, were stable through 1990 and 1991.

The trade price index in table 2.2, panel A, comes from customs clearance base. Other export and import price indices are available from the Bank of Japan, as export and import price index statistics; these are shown in panel B.

Table 2.2   **Trade Statistics**

	1985	1986	1987	1988	1989	1990	1991
A. Trade volume and price indices[a]							
Volume index[b]							
Exports	100.0	99.4	99.7	104.8	108.8	114.8	118.2
		(−0.6)	(0.3)	(5.1)	(3.8)	(5.5)	(3.0)
Imports	100.0	109.5	119.7	139.7	150.6	159.3	164.0
		(9.5)	(9.3)	(16.7)	(7.8)	(5.8)	(3.0)
Trade price index[c]							
Exports	100.0	84.6	79.7	77.2	82.8	86.0	85.4
		(−15.4)	(−5.8)	(−3.1)	(7.3)	(3.9)	(−0.7)
Imports	100.0	63.3	58.4	55.3	61.9	68.4	62.6
		(−36.7)	(−7.7)	(−5.3)	(11.9)	(10.5)	(−8.5)
B. Export and import price indices[a]							
Export price index							
In yen	100.0	84.9	80.6	78.8	82.3	84.0	81.1
		(−15.1)	(−5.1)	(−2.2)	(4.4)	(2.1)	(−3.5)
In contract currency	100.0	104.3	108.6	115.7	117.0	113.1	114.8
		(4.3)	(4.1)	(6.5)	(1.1)	(−3.1)	(1.5)
Import price index							
In yen	100.0	64.2	58.9	56.2	60.5	65.7	60.6
		(−35.8)	(−8.3)	(−4.6)	(7.7)	(8.6)	(−7.8)
In contract currency	100.0	83.6	88.2	93.3	96.8	100.3	98.3
		(−16.4)	(5.5)	(5.8)	(3.8)	(3.6)	(−2.0)

Sources: Panel A, Ministry of Finance, *Gaikoku Boeki Gaikyo, 1991* (Tokyo); panel B, Bank of Japan, *Economic Statistics Annual, 1991* (Tokyo).

Note: Numbers in parentheses are percentage change from previous year.

[a]1985 = 100.

[b]Volume index is defined by (value index)/(unit price index).

[c]Trade price index is defined for the contractual currency basis.

From 1985 to 1986, the value of yen doubled and the crude oil price declined by half. This was reflected by a sudden change in price indices: the import price index in yen dropped by 35 percent, while the price index in contract currency base dropped by 16 percent. The latter shows mainly the crude oil price effect, and the former shows both exchange rate and oil price effects. A brief spell of yen depreciation and oil price increase in 1990 is reflected in increased import prices. However, this was corrected in 1991.

The export price index in table 2.2, panel B, also shows characteristics of pricing behavior by Japanese manufacturers. When the yen appreciated sharply, Japanese exporters often lowered the yen-denominated prices of exports, in order to keep moderate the increase in dollar-denominated prices in the retail market in the United States and other countries. This "pricing-to-market" behavior is reflected in the decline in yen-denominated export price and the slight increase in contract-currency-base export price in 1986–1988.[3] This partly explains the long tail of the J-curve.

A major increase occurred in imports of manufactured goods, with the volume of manufactured imports increasing by about 20 percent from 1985 to 1989. Manufactured goods imports as a percentage of total imports (on customs clearance basis) increased from 22.8 percent in 1980, to 31.0 percent in 1985, to 50.2 percent in 1990. Some policymakers in Japan now feel that the criticism that Japan avoids importing manufactured goods is no longer plausible. However, these ratios may be misleading, because they may reflect the decline in prices of agricultural goods, oil, and other raw materials and also the decrease in the weight of nonmanufactured goods in the economy.

Bilateral trade balances by region are shown in table 2.3. From 1990 to 1991 Japan recorded sharply increased trade surpluses mainly against EC and Asian countries. Trade surpluses with the European Community increased because imports from the European Community—mainly expensive automobiles and paintings—decreased, while trade surpluses against Asian countries increased mainly because of parts exports.

Except for investment income, which gradually grew due to increased external assets, service balance deficits also contributed to the decrease in current account surpluses from 1987 to 1990. A sharp increase in Japanese overseas travel contributed to a widening of transportation and travel deficits.[4]

In summary, the gradual decrease in current accounts from 1987 to 1990 was driven mainly by a large increase in manufactured goods import volumes. Imports from the European Community increased most in 1989–90, but dropped sharply in 1991. Exports to East Asian countries increased sharply in 1991. Trade surpluses against the United States decreased in the second half of the 1980s and were stable in 1990–91, despite a sharp increase in overall

3. See Marston (1990, 1991), Ohno (1989), and Ito (1992, 301–5) for theories and empirical research on the pricing-to-market behavior of Japanese firms.

4. The estimation method of travel account was changed in July 1988, which contributed to an increase. See Ito (1992, 293).

Table 2.3   **Bilateral Trade Balance (billion $ U.S.)**

	1986	1987	1988	1989	1990	1991
A. Balance of payments[a]						
United States	54.9	57.1	52.4	49.4	41.9	43.4
European Community	18.0	21.3	24.6	18.8	16.3	33.4
Southeast Asia	—	17.4	22.9	22.6	30.1	43.4
NIES[b]	—	22.0	26.5	26.1	31.4	43.9
B. Customs clearance basis						
United States	51.4	52.1	47.6	44.9	38.0	38.2
European Community	16.7	20.0	22.8	19.8	18.5	27.4
Southeast Asia	12.3	14.4	19.3	20.6	28.1	37.4
Korea	5.2	5.2	3.6	3.6	5.8	7.7
Taiwan	3.2	4.2	5.6	6.4	6.9	8.8

Source: Ministry of Finance, *Zaisei Kinyu Tokei Geppo* (Tokyo, August 1992).
[a]IMF formula.
[b]Newly industrialized economies (NIEs) are Hong Kong, Korea, Singapore, and Taiwan.

current account surpluses. Exports during 1990–91 did not increase due to sharp yen appreciation. Export price measured in yen declined, due partly to decreased costs of imported materials and partly to deliberate efforts to keep down the local prices in destination markets (export yen price × exchange rate) in the face of sharp yen appreciation. However, after five years of the stable yen—between 120 and 160 yen/dollar—the cost structure of the Japanese manufacturing sectors seems to have adjusted to the new exchange rate environment. In 1991, the momentum of import increase seems to have been lost and the volume of exports started to increase.

2.3   Problems in Capital Movement Data

The format used to report Japan's balance of payments contains several kinds of problems in definition.[5] First, statistical distinctions between long-term and short-term capital movements may not actually reflect their implied activities. Stocks, long-term bonds, and long-term loans and credits are classified as long-term investments, while short-term bonds, deposits, and short-term loans and credits are classified as short-term investments. A particular securities investment is classified as long-term if the securities purchased (or sold) are long-term (bonds with an original maturity of more than one year). However, an apparently long-term investment, using long bonds as instruments, may be reversed quite easily. It used to be the case that even repurchase agreements (*gensaki*) were treated as long-term investment, if the instruments were long bonds. However, repurchase agreements have been treated as short-term capital movement since January 1982. A problem that remains is that if an outright

5. This section is based on Bank of Japan (1992, esp. 15–16) and Harada and Ikawa (1992).

purchase of long bonds is followed by an outright sale, this is still classified as a transaction in long-term assets. This practice contributes to large month-to-month fluctuations, but in the long run, purchases and sales should cancel each other out within the category of long-term assets.

Second, nonresident transactions with banks, in terms of deposits and loans, are recorded in "monetary movement balances." Hence, if nonresidents withdraw yen-denominated deposits from banks and purchase Japanese government bonds and stocks, this transaction will cause a capital outflow in "monetary movement balances" and a matching capital inflow in "long-term capital." In fact, this is a plausible explanation for striking simultaneous increases in "liabilities (securities investment)" and "monetary movement balances" in 1991. (But this is only a part of the whole picture, because if only this were happening, the size of current account surpluses would not change.)

Third, Japanese banks take positions in foreign assets with funds borrowed from the Euro-market. This kind of portfolio shift causes outflows in "monetary movement balances (private bank sectors)," simultaneous with inflows in long-term capital. This must have been the case in the second half of the 1980s, though this shift did unwind in 1991.

Fourth, suppose that Japanese firms issue foreign-currency-denominated bonds abroad. If foreign investors purchase these bonds, this creates an inflow of long-term capital (an increase in "liabilities [securities investment, bonds]"). However, if Japanese investors purchase these bonds, it creates an outflow of long-term capital (an increase in "assets, [securities, bonds]").[6] Again, this transaction would increase both assets and liabilities, and hence should on average have a neutral effect on long-term capital movement.

Fifth, suppose Japanese firms borrow Euro-yen impact loans from abroad. This increases "liabilities (loans received)," or the inflow of long-term capital, if loans are classified as long-term, or the inflow of short-term capital if loans are classified as short-term. However, most Euro-yen impact loans are provided by foreign branches of Japanese banks, and their funds come from their headquarters in Japan. This headquarter-branch transaction is recorded in "monetary movement balances." In fact, from April to September 1990—while a restriction on real-estate lending was in effect—Japanese firms (including nonbanks) relied on impact loans from abroad in order to avoid this restriction. This contributed to large simultaneous inflows of long-term capital and outflows of monetary movement (headquarter-branch transactions).

Sixth, direct investment from Japan may not be declining, as it might seem.

6. There are two reasons for Japanese corporations to issue bonds to be purchased by Japanese investors abroad. First, because of overregulation in the Japanese corporate bond market, transaction costs of issuing bonds in the Euro-market are lower than in the domestic market. This is still the case in the 1990s. Second, during the first half of the 1980s, Japanese life insurance companies were, by regulation, not to invest in foreign bonds over a certain ceiling ratio (to their total assets). The ceiling was increased in steps during the 1980s). However, foreign bonds issued by Japanese corporations were exempted from the ceiling, so that investors preferred such bonds. However, as the ceiling was raised high enough in the mid-1980s, this consideration became irrelevant.

After initial direct investments made by moving money abroad from Japanese parent companies (to purchase equities or build factories), additional lending may be done by foreign branches of Japanese banks. Funds are sent from bank headquarters in Japan, hence the transactions again inflate "monetary movement balances" (outflow) but not "direct investment" in long-term capital. Moreover, reinvestment using the profits of subsidiaries set up by direct investment does not show up in the balance of payments.

Overall, these idiosyncrasies in the data imply that the long-term capital "inflow" in 1991 was partly a result of portfolio shifts among nonresidents and banks. The level of underlying (gross) long-term capital exports from Japan did not decline in 1991. Thus, the real picture is far from the often-rumored withdrawal of "Japan money" or sell-off of foreign assets by Japanese investors.

2.4   Transitory Factors

Current account movement, especially the sudden increase in 1992, needs explanation. It has been argued that movements of the current account in 1990–91 were disturbed by transitory factors (Bank of Japan 1991; Harada and Ikawa 1992). According to this argument, a decrease in current account surpluses in 1990 was exaggerated by payments to the Gulf War coffer, a sudden increase in the crude oil price (due to the Gulf War), and the apparent import of gold for a new type of savings account (the gold investment account). After these transitory factors, which reduced current account surpluses in 1990, either disappeared or were reversed, current accounts appear to have increased sharply in 1991. In 1991, gold investment accounts shrank, so that Japan recorded gold exports. The Gulf War (when fighting began) affected Japanese travelers, so that travel account deficits declined in 1991.

It also has been pointed out that export and import volume (as opposed to value) has been stable throughout recent years. This implies that the profit margins (value added) of such Japanese exports as automobiles rose in 1991. In the rest of this section, these arguments will be quantified.

2.4.1   Investment Gold

Toward the end of the 1980s, securities firms introduced a new product—the gold investment account. It is essentially a swap arrangement to buy spot gold and sell gold forward in the international gold market, with exchange rate risk cover (buy spot dollars and sell forward dollars). This arrangement provides a market (yen-denominated) interest rate and allows securities firms to offer an account comparable to a bank deposit.[7] Moreover, the interest rate on

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7. Banks also sold the gold investment accounts. However, these accounts were much more vigorously promoted by securities firms.

the gold investment account was slightly higher than a comparable bank deposit (regulated) interest rate.

The net purchase of spot gold for the investment accounts is counted as gold import, in Japan's international balance of payments; however, the gold itself is only registered in the market and not physically transported to Japan. Gold imports for the investment accounts do not show up in the customs clearance statistics.

Hence, when the balances of gold investment accounts increase, Japan appears to import gold, and when the balances decrease, Japan appears to export gold. (To be precise, they are "negative gold imports" as recorded in official statistics. Hence, only imports should be corrected for this effect in what follows.)[8] The amount of apparent gold imports and exports can be estimated from the difference between the gold trade statistics of the balance of payments and those of the customs clearance statistics. Following Harada and Ikawa (1992), apparent imports and exports of gold are estimated as in table 2A.1.

2.4.2   Gulf War

The Gulf War had several transitory effects on Japan's current accounts. First, the war raised the oil price, which in turn contributed to decreasing Japan's current account surpluses. Second, Japan's monetary contribution to the Gulf War amounted to $13 billion, of which $9 billion were paid to the U.S. command of the multicountry forces. Third, because of the Gulf War, international travel decreased for fear of terrorism.

Let us now estimate these effects. The actual oil price (at customs clearance basis) and imported amount (customs clearance basis) for the period August 1990–to April 1991 are shown in table 2.A.2. The oil price, measured at Japanese customs, rose sharply from September 1990 to November 1990. It then gradually declined to its previous level by April 1991. Suppose that the oil price had stayed at the August 1991 level, $16.39, for the following eight months. Then we estimate that Japan's surpluses would have been larger by more than $10 billion.

Monthly statistics of the transfer of the current account show some unusual payments in September and December 1990 and March and July 1991. It is roughly estimated that Japan contributed $2.5 billion in 1990 and $10.5 billion in 1991 as a part of the Gulf war–related transfers (table 2A.3).

The travel account balance was also affected by the Gulf War, because fear of terrorist attack on foreign soil or in the sky reduced the number of Japanese tourists going abroad. In 1989 and 1990, travel account deficits increased, on average, at the rate of 18.3 percent per annum (table 2A.4), while the magnitude of deficits declined significantly in the first quarters of 1991. If these

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8. I am indebted to Naohiro Yashiro for pointing this out to me.

Table 2.4   **Effects of Transitory Factors on Current Account Movement (billion $)**

	1990	1991
Investment Gold	−2.4	12.80
Oil price	−7.21	−3.09
Transfer	−2.50	−10.50
Travel	0.00	4.8

Source: See appendix.

deficits had increased in 1991 at their 1989–90 rate, travel account deficits would have been larger by $4.8 billion in 1991 (table 2A.5).

We summarize the effects of the transitory factors outlined above in table 2.4.

2.4.3   Expensive Imports and Exports

Both the Bank of Japan (1991) and Harada and Ikawa (1992) point out that there was a sharp increase in imports of expensive automobiles, paintings, and diamonds in 1989 and 1990 and a subsequent reversal in 1991. (Hence, the logic goes, a decrease in the trade balance in 1990 and an increase in 1991 were both exaggerated by this factor.) These goods were imported due to wealth effects related to a sharp increase in land and stock prices. (Stock prices peaked in December 1989, but profits from capital gains were used with a time lag.) There may be cases in which these goods were used to reduce the tax liabilities, through depreciation, of corporations and wealthy individuals. Because of a crash in the stock market and declining land prices, imports of these luxury goods, presumably through a (reverse) wealth effect, declined sharply in 1991.[9] I will not consider correcting for these expensive imports, however. Shifts in the composition of imports are not particularly interesting in a discussion of the overall trade balance, and there is no hard evidence that these expensive imports are not just a result of substitution for other goods. In other words, a temporary shift in the import function would have to be shown in order to count these expensive imports as a transitory factor.

According to the Bank of Japan (1991) and Harada and Ikawa (1992), a decomposition of exports into price and volume shows that most of the increase in exports (export value) in 1991 is due to upgrading effects. That is, the same export commodity from Japan (say, an automobile) has become more expensively or highly value-added (say, a model shift from small/compact cars to luxurious cars). Again, I will not investigate this change in this paper.

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9. Since the stock and land price increases of the second half of the 1980s are considered examples of financial "bubbles," these goods are nicknamed "bubble goods."

2.5   Exchange Rate Effect—Simulation

2.5.1   Export and Import Functions

A last factor, which I consider more structural, is the exchange rate. The yen/dollar exchange rate has essentially stayed in the 120–160 yen/dollar range since the spring of 1986. During the following six years, the productivity increase in the tradable sector was higher in Japan than in the United States, so that the same nominal rate implies the tendency of more exports from Japan.[10]

In order to assess the effect of the yen/dollar exchange rate on Japan's exports and imports, (nominal) export/(nominal) GNP and (nominal) import/(nominal) GNP ratios are regressed on the yen/dollar exchange rate, controlling for the growth rates of Japan and the United States, the inflation (GNP deflator) differential of the two countries, and the oil price. Imports are adjusted, before estimation, for gold investment account effects. Results of these regressions are shown in tables 2.5 and 2.6. Yen appreciation (a decline of LYEN) indeed decreases exports and increases imports, as shown from the sign of the sum of lagged LYEN coefficients. We have obtained in our estimates the expected signs for effects of U.S. growth and the inflation differential on exports; we also obtained the expected signs for effects of Japanese growth, the oil price, and the inflation differential on imports.

2.5.2   Counter-factual Hypothesis

Using these regression results, we first calculate how exports and imports would have been different if the exchange rate had not experienced yen depreciation from 1989 to 1990. Let us assume that the yen/dollar exchange rate stayed at 125 yen/dollar (the average of daily closing rates in the last quarter of 1988) from 1989:1 to the end of 1991. In addition, let us estimate the effect of the oil price increase due to the Gulf War, using the import functions. Let us assume that the spike in the oil price due to the Gulf War had not occurred, so that the oil price stayed about $18 per barrel (the oil price in 1990:3) from 1990:4 to 1991:2.

Tables 2.7 and 2.8 simulate such a case using the estimated coefficients of export and import functions in tables 2.5 and 2.6. Exports would have been uniformly lower than actual statistics in 1989–91. Imports would have been smaller in 1989 and 1990 and higher in 1991.

It is now of interest to derive the hypothetical paths of trade and current account surpluses under a set of assumptions which eliminate the Gulf War effects and exchange rate fluctuations. Effects of gold investment accounts, travel account deficits (in service trade), and the Gulf War contribution effect (transfer), taken from table 2.4, can be considered, in addition to the simulated trade balance, calculated in tables 2.7 and 2.8, namely the exchange rate and

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10. It is assumed here that fundamentals suggest that the "equilibrium" level of the Japanese yen appreciate against the U.S. dollar in the long run. See Yoshikawa (1990) for such an analysis.

Table 2.5   **Export Function (estimation period, 1975:1–1991:4)**

Variable	Coefficient	t-statistic
ER $(t-1)$	0.7873	8.828
LYEN (t)	0.0619	4.643
LYEN $(t-1)$	−0.0506	−2.384
LYEN $(t-2)$	0.0134	0.629
LYEN $(t-3)$	−0.0017	−0.084
LYEN $(t-4)$	−0.0003	−0.014
LYEN $(t-5)$	−0.0182	−0.819
LYEN $(t-6)$	0.0237	1.094
LYEN $(t-7)$	−0.0069	−0.333
LYEN $(t-8)$	−0.0070	−0.562
LUSYR $(t-1)$	0.1026	1.471
LUSYR $(t-2)$	0.0134	0.119
LUSYR $(t-3)$	−0.0735	−0.675
LUSYR $(t-4)$	−0.0401	−0.556
USJADEF $(t-1)$	0.1600	1.699
USJADEF $(t-2)$	−0.1457	−1.600
CONSTANT	−0.0838	−0.364
QTR2	0.0144	7.558
QTR3	0.0110	6.641
QTR4	0.0139	8.356
Sum of LYEN coefficients	0.0142	
$\bar{R}^2$	0.921	
SSR	0.000957	
SEE	0.004466	
D-W	2.045	

Note: Export Equation is
$$ER = a_0 * ER\,(t-1) + \sum a_i * LYEN\,(t-i) + \sum b_i * LUSRY\,(t-i) +$$
$$\sum c_i * USJADEF\,(t-i) + d_1 + d_2 * QTR2\,(t) + d_3 * QTR3(t) +$$
$$d_4 * QTR4(t) + e(t).$$

Definition of variables:

ER	= exports (trillion yen)/GNP (trillion yen)
LYEN	= log yen/dollar rate, average over quarter
LUSYR	= log U.S. real GNP (1982 price), proxy for the world demand
USJADEF	= log (U.S. GNP deflator) − log (Japan GNP deflator)
QTR2	= dummy variable for the second quarter
QTR3	= dummy variable for the third quarter
QTR4	= dummy variable for the fourth quarter

oil price effects. The "benchmark" column in table 2.9 shows the trade and current account surpluses adjusted for those factors listed above.

Briefly, this exercise can be understood as follows. If the Gulf War had not occurred, the oil price would have been stable through 1990 and 1991, Japanese travel would not have been reduced in 1991, and of course, the monetary contribution to the allied forces and other neighboring countries would not have been necessary. In addition to eliminating the Gulf War effect, suppose

Table 2.6   **Import Function (estimation period, 1975:1–1991:4)**

Variable	Coefficient	t-statistic
IR $(t-1)$	0.6901	7.047
LYEN (t)	0.0694	6.489
LYEN $(t-1)$	−0.0616	−3.595
LYEN $(t-2)$	0.0275	1.600
LYEN $(t-3)$	−0.0383	−2.309
LYEN $(t-4)$	0.0053	0.327
LYEN $(t-5)$	−0.0083	−0.490
LYEN $(t-6)$	0.0052	0.313
LYEN $(t-7)$	−0.0012	−0.076
LYEN $(t-8)$	−0.0011	−0.118
LOIL (t)	0.0097	3.281
LJAYR $(t-1)$	0.1154	1.574
LJAYR $(t-2)$	−0.0972	−1.122
LJAYR $(t-3)$	0.0252	0.287
LJAYR $(t-4)$	−0.0512	−0.702
USJADEF $(t-1)$	−0.0336	−0.041
USJADEF $(t-2)$	−0.0263	−0.325
CONSTANT	0.0555	0.444
QTR2	0.0030	2.363
QTR3	0.0017	1.388
QTR4	0.0066	4.948
Sum of LYEN coefficients	−0.0032	
$\bar{R}^2$	0.973	
SSR	0.000581	
SEE	0.003517	
D-W	1.545	

Note: Import equation is
$$IR = a_0*IR\ (t-1) + \sum a_i*LYEN\ (t-i) + \sum b_i*LJAYR\ (t-i) +$$
$$\sum c_i*USJADEF\ (t-i) + c_5*LOIL\ (t-i) + d_1 + d_2*QTR2\ (t) + d_3*QTR3(t) +$$
$$d_4*QTR4(t) + e(t).$$

Definition of variables:

IR	= imports (trillion yen)/GNP (trillion yen)
LYEN	= log yen/dollar rate, average over quarter
LJAYR	= log Japan real GNP (1985 price)
LOIL	= log oil price ($ per barrel, customs clearance base)
USJADEF	= log (US GNP deflator) − log (Japan GNP deflator)
QTR2	= dummy variable for the second quarter
QTR3	= dummy variable for the third quarter
QTR4	= dummy variable for the fourth quarter

that the yen had stayed at 125.00 yen/dollar in 1989–91 and that gold invest-ment accounts had not been available. The hypothetical current account "benchmark" column in table 2.9 simulates the current account surpluses in such a situation. One may regard this column as the benchmark for Japanese current account surpluses without transitory factors.

Table 2.7   **Simulation of Exports**

Year and Quarter		EXPORT	Fitted Value		Strong Yen Scenario	
			FEXPORT	EXPR	FEXPORT2	EXP2R
1989	1	66945	65143.5	−2.69	63834.1	−4.65
	2	66560	68701.3	3.22	64311.2	−3.38
	3	68157	69449.2	1.89	63697.6	−6.54
	4	67908	73707.3	8.54	66850.5	−1.56
1990	1	65460	67260.6	2.75	58329.5	−10.89
	2	65510	72776.5	11.09	61827.7	−5.62
	3	70500	74915.8	6.26	66208.3	−6.09
	4	78904	85648.5	8.55	79926.2	1.30
1991	1	71778	75786.3	1.08	68513.2	−8.62
	2	68790	77980.5	8.32	70902.5	−1.51
	3	73734	77337.1	0.52	72384.7	−5.91
	4	79495	84820.8	2.57	81124.4	−1.90

Note: Conditions for simulation were: exchange rate was 125 yen/dollar from 1989:1 to 1991:4, and oil price was at its 1990:3 level from 1990:4 to 1991:2.

Definition of variables:

EXPORT   = Actual exports (million $)
FEXPORT   = Fitted value of the regression, with actual RHS variables (million $)
FEXPORT2 = Simulated exports (million $)
EXPR   = Deviation of FEXPORT from EXPORT (%)
EXPR2   = Deviation of FEXPORT2 from EXPORT (%)

In this benchmark case, it is clear that the Japanese current account did not fluctuate so wildly in 1989–91. However, even in the benchmark case, it is clear that current account surpluses increased in 1991 from their level in 1990, although the change was only 10 percent, as opposed to more than 100 percent in the actual statistics. Hence, transitory factors alone do not explain the reversal. Thus we can conclude that there was a fundamental change in the movement of current account surpluses in 1991. The same observation applies to the trade balance. The most likely cause for the trend reversal was a lack of yen appreciation in recent years and, moreover, some yen depreciation in 1990. We will see the effects of yen/dollar movement on trade and current account surpluses in the next section.

2.6   Policy Implications

If the size of current account surpluses is judged to pose some political problems for Japan, yen appreciation is a potent policy tool.[11] In order to determine

11. Of course, the position that no size of current account surplus/deficit matters is perfectly acceptable from an economist's point of view, because it is just the borrowing/lending (saving-investment balance) of the nation as a whole. When a demographic change makes Japan a society with many retirees (as is predicted to happen in the next two or three decades), the current account will become deficit.

Table 2.8   **Simulation of Imports**

			Fitted Value		Strong Yen Scenario	
Year and Quarter		IMPORT	IMPORT − G	FIMPORT	IMPR	FIMPORT2	IMPR2
1989	1	44634	44984	44536.3	−1.00	43067.9	−4.26
	2	45766	46116	45987.7	−0.28	41295.4	−10.45
	3	47387	47737	46779.7	−2.00	41066.7	−13.97
	4	50866	51216	52963.7	3.41	46717.5	−8.78
1990	1	50467	50467	50851.9	0.76	44335.1	−12.15
	2	51296	51296	51039.0	−0.50	44109.5	−14.01
	3	52751	52751	49933.7	−5.34	47231.2	−10.46
	4	59932	59932	57947.9	−3.31	56570.4	−5.61
1991	1	54249	57449	54792.3	−4.62	52962.9	−7.81
	2	48638	51838	52247.1	0.79	52281.8	0.86
	3	49095	52295	51026.2	−2.42	51615.9	−1.30
	4	51232	54432	55659.5	2.25	58554.2	7.57

Note: Conditions for simulation were: exchange rate was 125 yen/dollar from 1989:1 to 1991:4, and oil price was at its 1990:3 level from 1990:4 to 1991:2.

Definition of variables:

IMPORT	= Actual imports (million $)
IMPORT − G	= Import − gold investment (when net imports)
FIMPORT	= Fitted value of the regression, with actual RHS variables (million $)
FIMPORT2	= Simulated imports (million $)
IMPR	= Deviation of FIMPORT from IMPORT − G (%)
IMPR2	= Deviation of FIMPORT2 from IMPORT − G (%)

how exchange rate movement would change the trade and current account surpluses, two paths of opposite exchange rate movements are assumed in the next exercise.

In the appreciation scenario, the yen is assumed to have moved from 125 yen/dollar in the first and second quarters of 1989 to 100 yen/dollar in the third and fourth quarters of 1991, with 5-yen/dollar appreciation steps every six months; in the depreciation scenario, the yen is assumed to have moved from 125 yen/dollar in the first and second quarter of 1989 to 150 yen/dollar in the third and fourth quarters of 1991, with 5-yen/dollar steps every six months. The "100 yen" and "150 yen" columns of table 2.9 vividly show how much difference the exchange rate makes in the trade and current accounts. Compared to the benchmark case, the 1991 trade and current account surpluses in the yen appreciation case are about $25 billion less, while the yen depreciation scenario shows just the opposite.

The simulation results show that exports and imports respond to the yen/dollar exchange rate remarkably well, though with lags. If too much surplus is politically unacceptable, a way to cause yen appreciation must be explored. In order to cause yen appreciation, a different domestic policy mix and international policy coordination (or, a second "Plaza Agreement") would be a good idea. The policy mix for yen appreciation should be tighter monetary policy

Table 2.9   **Simulations of Trade and Current Accounts for Different Exchange Rate Paths (million $)**

Year and Quarter		Actual	Hypothetical		
			100 Yen	Benchmark	150 Yen
Trade account					
1989	1	21,311	20,766	20,766	20,766
	2	19,794	23,015	23,015	23,015
	3	19,770	22,847	22,630	22,422
	4	16,042	20,005	20,133	20,255
1990	1	14,393	14,268	13,994	13,747
	2	13,614	16,693	17,718	18,692
	3	17,149	17,769	18,977	20,176
	4	18,372	20,226	23,355	26,255
1991	1	20,729	11,624	15,550	19,259
	2	23,352	12,704	18,620	23,967
	3	27,745	13,889	20,768	27,017
	4	31,463	12,814	22,570	31,086
Totals					
1989		76,917	86,635	86,546	86,459
1990		63,528	68,958	74,046	78,872
1991		103,289	51,032	77,510	101,330
Current account					
1989	1	16,064	15,519	15,519	15,519
	2	14,283	17,504	17,504	17,504
	3	14,957	18,034	17,817	17,609
	4	11,853	15,816	15,944	16,066
1990	1	12,305	12,180	11,906	11,659
	2	7,892	10,971	11,996	12,970
	3	7,400	9,120	10,328	11,527
	4	8,164	11,418	14,547	17,447
1991	1	10,260	8,391	12,317	16,026
	2	18,664	7,128	13,044	18,391
	3	19,604	5,810	12,689	18,938
	4	24,373	5,068	14,824	23,340
Totals					
1989		57,157	66,875	66,785	66,699
1990		35,761	43,691	48,778	53,605
1991		72,901	26,398	52,875	76,696

Notes: Actual trade account: actual trade balance, reported in balance of payments. Actual current account: actual current account balance, reported in balance of payments.

Hypothetical trade/current account contains corrections for gold investment account, Gulf War–related transfers, and travel decrease. It also assumes oil prices remained at the level of 1990:3. Yen level was assumed as follows: 100-yen scenario: the yen appreciates from 125 yen/dollar in 1981:1 to 100 yen/dollar in 1991:3 by 5 yen/dollar every six months. Benchmark: the yen stays at 125 yen/dollar 1989–91. 150-yen scenario: the yen depreciates from 125 yen/dollar in 1989:1 to 150 yen/dollar in 1991:3 by 5 yen/dollar every six months.

and looser fiscal policy. This mix would enhance a tendency toward strong nonresident demand for Japanese assets as shown in table 2.1. Investigations in earlier sections also show that an increase in nonresident long-term capital investment in Japan was, at least partly, financed by a decrease in short-term yen-denominated assets. When a net inflow of capital, both short-term and long-term, to Japan occurs, the yen will appreciate against other currencies and trigger more structural changes in Japan's imports and exports. Our estimation and simulation analysis supports such an idea and provides some quantitative estimates.

2.7   Concluding Remarks

In this paper, I have described factors affecting Japan's current accounts and capital accounts in the second half of the 1980s and up to 1991. Japanese current accounts appear to have experienced a sharp reversal. However, this is due partly to transitory factors, such as the popularity of gold investment accounts and the Gulf War. Simulation shows that the increase in the current account surpluses in 1991 would have been much more modest if transitory factors had been eliminated.

Japanese long-term capital movement became inflow in 1991. This was due partly to strong demand for Japanese assets by nonresidents and partly to reduction in the short-term debt of Japanese residents. This kind of movement cannot continue long, since, sooner or later, short-term debts will be repaid and long-term capital will turn to outflow, given the large size of current account surpluses. Some transitory factors, such as the Gulf War contributions, are purely exogenous to Japan's economic policies, while others, such as the gold investment accounts, are due to (antiquated) regulations on financial products.

With export and import movements corrected for transitory factors, the simulated trend in current account surpluses, which started in 1987, still shows a reversal in 1991, although the magnitude is much less than the official statistics. If the coming increase in current account surpluses is judged to be politically problematic, yen appreciation would be helpful in avoiding the problem in the near future.

Appendix

Decomposition of Changes in Current Accounts, 1988–91

Table 2A.1   **Gold Investment Account (billion $)**

	1988	1989	1990	1991
Apparent gold export	1.4	−6.1	−2.4	12.8

Source: Harada and Ikawa (1992)

Table 2A.2   **Gulf War Effect: Oil Price**

	1990					1991			
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
1. Oil price (actual; $)	16.39	22.44	30.34	34.16	32.77	28.16	24.73	19.11	17.49
2. Oil import (actual; million barrels)	113	113	119	133	153	119	128	210	54
3. Oil import value (actual; billion $)	1.85	2.54	3.61	4.54	5.01	3.35	3.17	4.01	0.94
4. Oil import (Hypothetical; billion $)	1.85	1.85	1.95	2.18	2.51	1.95	2.10	3.44	0.89
5. Difference (billions $)		0.69	1.66	2.36	2.50	1.40	1.07	0.57	0.05
Sum of differences (billion $)									
Aug–Dec 1990					7.21				
Jan–Apr 1991									3.09

Source: Lines 1 and 2 from Toyo Keizai Shinpo (1991).
Note: Line 3 = line 1 × line 2. Line 4 = 16.39 × line 2. Line 5 = line 3 − line 4.

Table 2A.3   **Gulf War Effect-Transfer (billion $)**

	1990	1991
Estimated contribution	2.5	10.5

Table 2A.4   **Travel Balance, 1989–90 (billion $)**

	1989				1990			
	1	2	3	4	1	2	3	4
Actual	−4.458	−4.593	−5.442	−4.854	−4.782	−5.017	−6.005	−5.546
	(63.8)	(13.6)	(17.8)	(10.2)	(7.3)	(9.2)	(10.3)	(14.2)

Note: Numbers in parentheses are percentage change (in deficit) over same quarter of previous year.

Table 2A.5   **Gulf War Effect: Travel Balance (billion $)**

	1991			
	1	2	3	4
Actual	−3.893	−4.547	−6.166	−5.905
	(−18.6)	(−9.4)	(2.6)	(6.5)
Hypothetical[a]	−5.657	−5.935	−7.104	−6.561
Difference[b]	1.8	1.4	0.9	0.7

Note: Numbers in parentheses are percentage change (in deficit) over same quarter of previous year.

[a]Equals 1.183 × level in same quarter of 1990. Average of deficit growth rate over eight quarters of 1989–90 is 18.3 percent.

[b]Equals actual − hypothetical.

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Comment   Naohiro Yashiro

This paper summarizes well the recent developments in Japan's balance of payments and explains the major factors affecting them. The major points of this paper are as follows: (1) transitory factors were important in aggravating Japan's surplus in both current and capital accounts in 1991; (2) nevertheless, yen depreciation since 1989 has been mainly responsible for the reversal of the declining trend in Japan's current account surplus from 1991 onward; (3) a policy mix consisting of tighter monetary policy and looser fiscal policy would be desirable if the coming increases in current account surpluses are judged to be politically problematic.

While the first section of this paper is quite informative, the second section is not necessarily persuasive. Moreover, I disagree with the author's policy prescription, mainly because the author explains Japan's ratio of total exports to GNP by using U.S. GNP as a proxy for world demand and the yen/dollar exchange rate. There are two obvious problems with this equation. One is the meaning of the export equation. Does the ratio of Japan's exports to its GNP imply the supply function, i.e., the capacity of Japan's manufacturing sector to export? Alternatively, if it is a traditional demand equation, the export denominator needs to be world GNP, not Japan's GNP. Another possibility is the heroic assumption that U.S. demand represents world demand for Japan's exports. This argument is likely to exaggerate the role of exchange rate, as the share of the U.S. market in Japan's total exports has declined from 37.1 percent in 1985 to 28.7 percent in 1991.

Comment   Maria S. Gochoco

Japan's current account surplus declined in the 1980s after the yen appreciated but has started to increase dramatically since 1990–91. At the same time, the long-term capital account recorded inflows in 1991. This is in sharp contrast with Japan's record in the 1980s, when it became the world's largest exporter of capital (from $10 billion in 1981, its net long-term capital flow peaked at $137 billion in 1987).

Ito's study discusses possible explanations for an apparent puzzle in the 1990s. The macro accounting identity implies that the current account is the balance between national savings and investment. If a country runs a current account surplus by exporting more goods and services than it imports, it must

lend the difference to foreigners by investing and acquiring an equal amount of net claims through its capital account. A current account surplus must have as its counterpart, therefore, a capital outflow, not an inflow as seems to be the case for Japan since 1991.

It is not clear whether the phenomenon being described is a structural or temporary one, or whether the process of adjustment simply takes time. As an example of the latter, we note that the yen appreciation following the Plaza Accord did not immediately correct the current account imbalance. In section 2.2.1 of his study, Ito seems to believe that this is a temporary phenomenon. He says that the "unwinding" cannot go on indefinitely and that long-term capital flows will become outflows *sooner or later* provided that current account surpluses continue to exist.

Ito cites other reasons, mostly having to do with data, that seem to imply that perhaps the problem is not really a problem at all. The current account surplus is not really that large. He says, for example, that the current account surplus in 1990, which amounted to 1 percent of nominal GNP, was much less than that in 1987, which amounted to 4 percent of GNP. Furthermore, the long-term capital "inflows" in 1991 were partly a result of portfolio shifts among nonresidents and banks. Also, the decline in the current account deficit in 1990 was exaggerated by Gulf War payments, an increase in oil prices, etc.—in other words, by unusual exogenous factors. He estimates that without the yen depreciation and the Gulf War effect, the current account surplus would have increased by only 10 percent between 1990 and 1991.

Perhaps greater attention ought to be given to the determinants of capital flows (see Glick 1991). In the 1980s, long-term capital outflows exceeded current account surpluses. This seems to indicate that independent factors related to greater demand for foreign assets by Japanese investors are important. This is in contrast with the view from the macro accounting perspective that the involuntary acquisition of foreign assets by Japanese investors occurred merely to finance unbalanced trade in goods and services.

Both macro and micro factors may also be important. The aging population's effect on savings may reduce outflows. The stock market crash in 1990 and the current recession may, on the other hand, reduce domestic investment. The stance of monetary policy and exchange rate expectations may also explain portfolio shifts. On the micro side, domestic deregulation may affect the amount of foreign borrowing by banks, for example. The greater degree of integration between Japanese and world financial markets may also affect such flows of capital.

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