

# Weak Economy and Strong Currency — The Origins of the Strong Yen in the 1990s

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## Summary

*During the 1990s the Japanese yen proved astonishingly strong despite the persisting recession. This paper tracks the origins of the high yen. It analyses the influence of interest rates, prices and foreign exchange policy on the yen-dollar exchange rate. It comes to the conclusion that real interest differentials can only explain short-term exchange rate changes. Since prices have been exerting their influence on the Japanese currency in the long run, the high yen is explained with deflation. The massive foreign exchange interventions of the 1990s were only able to stop the appreciation temporarily, if they were unsterilized, but they had no lasting effects.*

## 1. Introduction

Until the end of the 1980s Japan was perceived as one of the strongest world economic powers. Real economic growth was high, the share prices at the Tokyo Stock Exchange were soaring, and the Japanese export industry was generating huge current account surpluses. The U.S. economic hegemony seemed to be at its end and a Pax Nipponica was proclaimed (Burstein, 1990, 45–51).

The Japanese yen, which had been appreciating steadily since the breakdown of the Bretton Woods System, was regarded as a symbol of Japan's economic success. While the dollar was traded for 360 yen in the early 1970s, at the end of 1988 the rate had reached a value of 126 yen per dollar. The *endaka*, the name for the high yen in Japan, supported the Japanese investors' acquisition of foreign assets. The purchase of well-known U.S. enterprises and real estate fueled fears of colonization by Japanese money.

Since the bursting of the bubble economy in December 1989, the perception of the Japanese economy has changed fundamentally. Despite massive fiscal spending there is no prospect for a sustained recovery. In September 2001 the Nikkei 225 fell below 10,000 yen; down from almost 40,000 in late 1989. Today, Japanese enterprises and financial institutions are in financial distress and are being taken over by western competitors.

Only the Japanese currency seems to be widely unaffected by the economic slump. The yen proved astonish-

ingly strong even in the economic downturn of the 1990s. In 1995 — when the real economic growth approached the zero percent mark — the yen reached its all-time high of 79 yen per dollar. At that time, only unsterilized foreign exchange intervention could reverse the trend. Nevertheless — despite the recent decline — the high yen persists, and represents a major obstacle to the recovery of the Japanese economy.

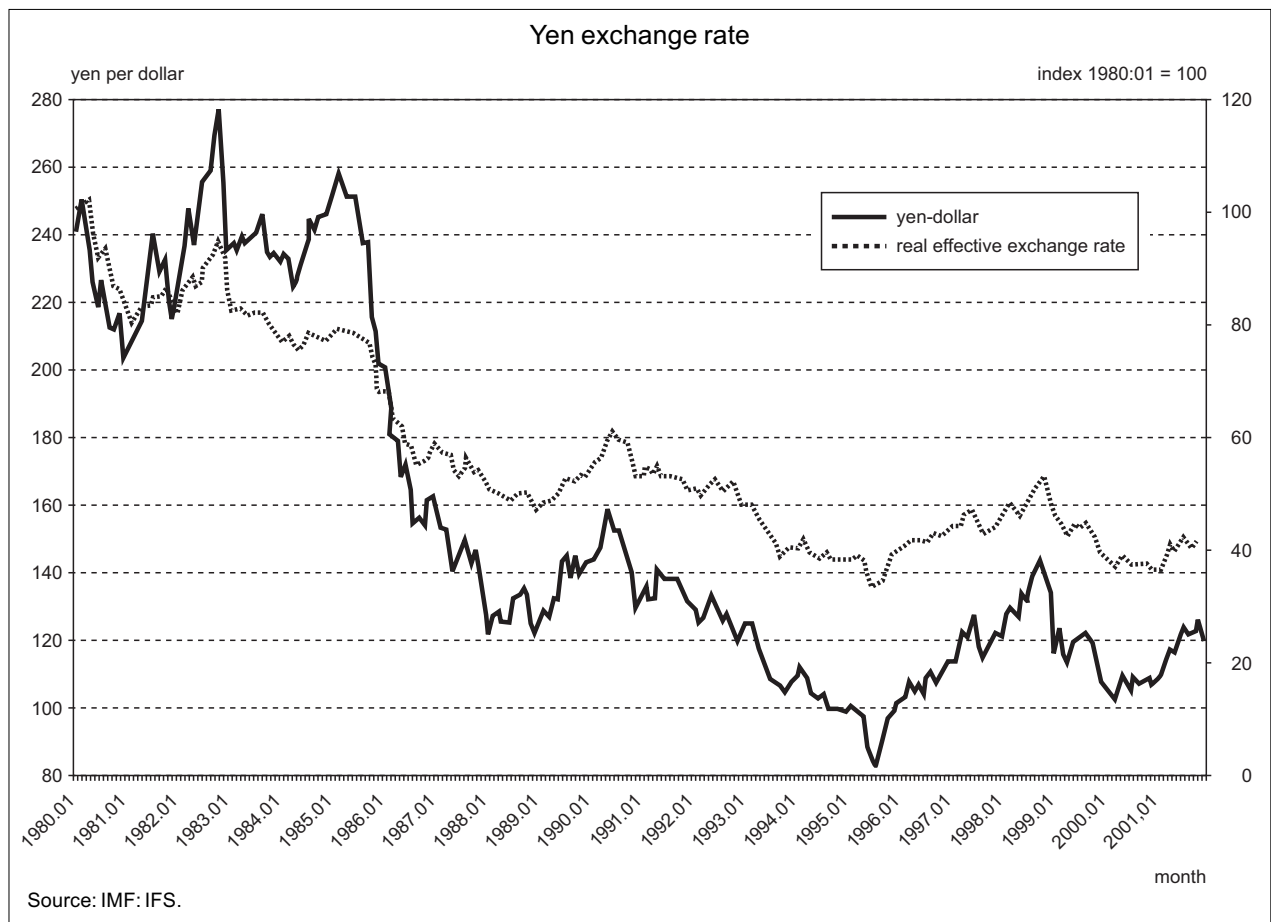
This paper tracks the origins of the high yen through the 1990s. Taking the long-term dimension of exchange rate movements into account, the development since 1980 will be scrutinized. Since most Japanese international trade and capital transactions are conducted in US dollars, and thus the exchange rate versus the U.S. currency has gained the most attention, the focus is on the yen-dollar exchange rate.<sup>1</sup>

The analysis is based on the two main fundamental theoretical concepts of exchange rate determination: one focusing on interest rates and international capital flows (chapter 2), the other focusing on prices (chapter 3). In chapter 4, the role of the foreign exchange policy and monetary policy will be scrutinized. Prospects for the further development of the Japanese yen are given in chapter 5.

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<sup>1</sup> The development of the nominal effective yen exchange rate is not significantly different from the yen-dollar rate (see Figure 1).

Figure 1



## 2. Yen Exchange Rate and Interest Rates

The pervasive phenomenon of the 1990s yen exchange rate development is the combination of recession, net capital outflows, low interest rates and a strong yen. With the bursting of the bubble economy, and the subsequent economic downturn, short-term interest rates fell steadily (Figure 2) and net capital outflows increased (Figure 3). The rising financial account deficits were accompanied by a yen appreciation.

This development peaked in 1995, when the real economic growth fell to 0.3 percent, net capital outflows rose to a high of 122 billion dollars, the short-term interest rate reached the then record low of 2 percent, and the yen climbed to its all time high.

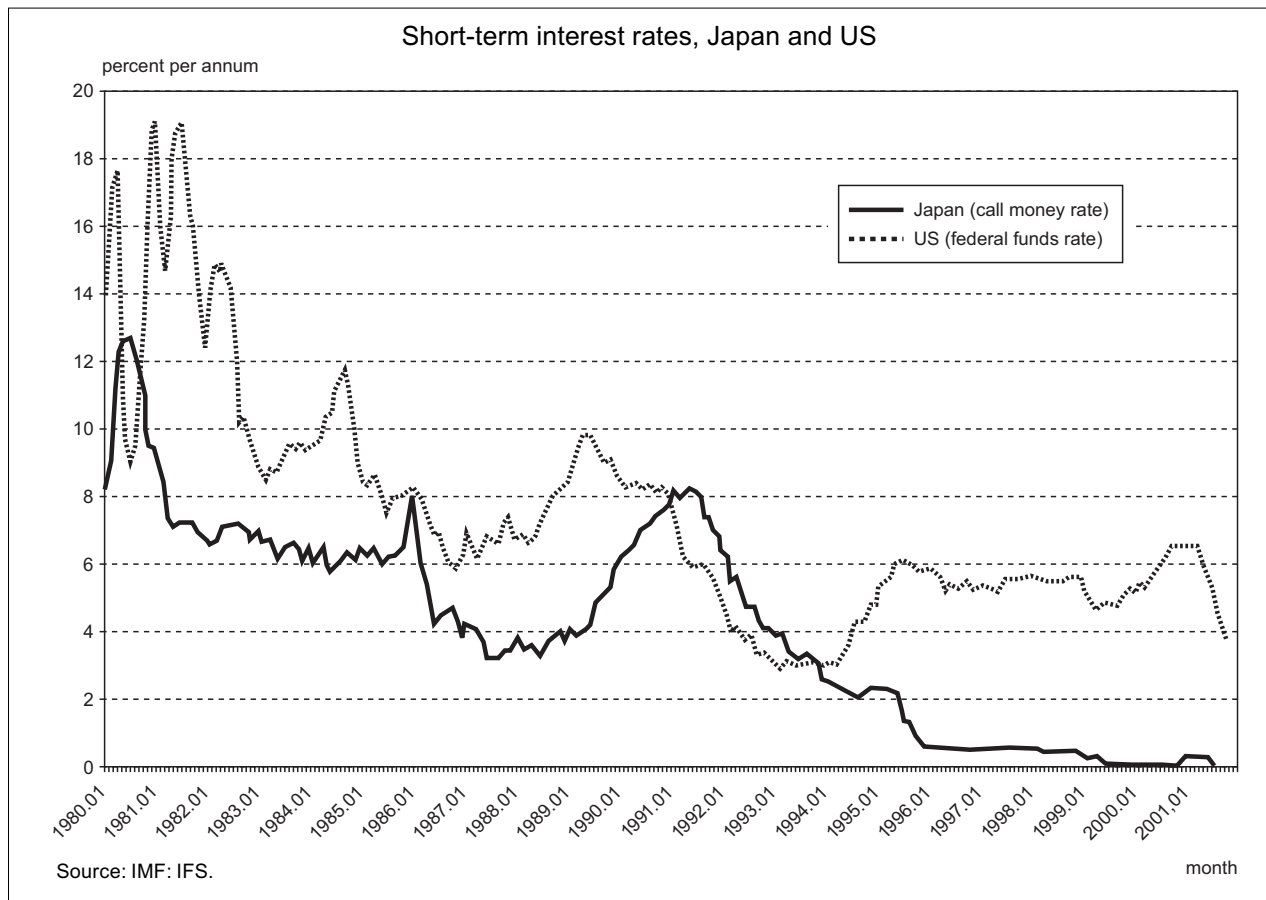
Although the yen appreciation was stopped in 1995/96 through foreign exchange intervention, and although later on, the Asian and Japanese financial crisis (1997/98) triggered a further depreciation, the yen recovered in the late 1990s. In 1999 the yen surpassed the level of 105

yen per dollar, which was then regarded as the highest tolerable level for the Japanese export industry. In September 2001 the yen started to rise again after some months of decline in spite of the deteriorating outlook of the Japanese economy. The combination of low interest rates and a strong currency was a cause of major irritation. Observers spoke of a paradoxical constellation of weak economy and strong currency (Weiler, 1999, 20; Tett, 2001).

Indeed the popular open economy extension of the IS-LM Mundell-Fleming model, which assumes that changes in real interest rates cause exchange rate alterations, fails to explain the *endaka* of the 1990s. Empirical investigations like that of MacDonald and Nagayasu only find weak support for a stable long-term relationship between the US-Japan real interest rate differentials and the yen-dollar exchange rate (MacDonald and Nagayasu, 1998).

Assuming fixed prices, the Mundell-Fleming framework can only explain short-term phenomena such as

Figure 2



the reaction of international capital flows to the central bank's interest rate changes.<sup>2</sup> To solve this contradiction McKinnon and Ohno (2001, 294–297) point to the uncovered interest parity, which assumes that differing rates of return between national and international bonds are phased out by (expected) exchange rate changes. With the assumption of perfect capital markets, lower nominal interest rates in comparison to abroad indicate an expected appreciation.

As depicted in Figure 4, since the beginning of the 1980s the long-term nominal bond yield in Japan has been continuously lower than in the United States.<sup>3</sup> While the Mundell-Fleming-framework would predict capital outflows and a yen depreciation, the uncovered interest parity assumes an equilibrium: Japanese investors kept their money in Japan, because they expected an appreciation of their currency. The higher U.S. interest rate compensated Japanese investors in the US for the losses caused by the appreciation of their currency.<sup>4</sup>

Three conclusions can be drawn from the equilibrium between exchange rate changes and nominal interest differentials. First, the actual persistence of the interest differential between Japan and the US indicates that a further yen appreciation is expected.

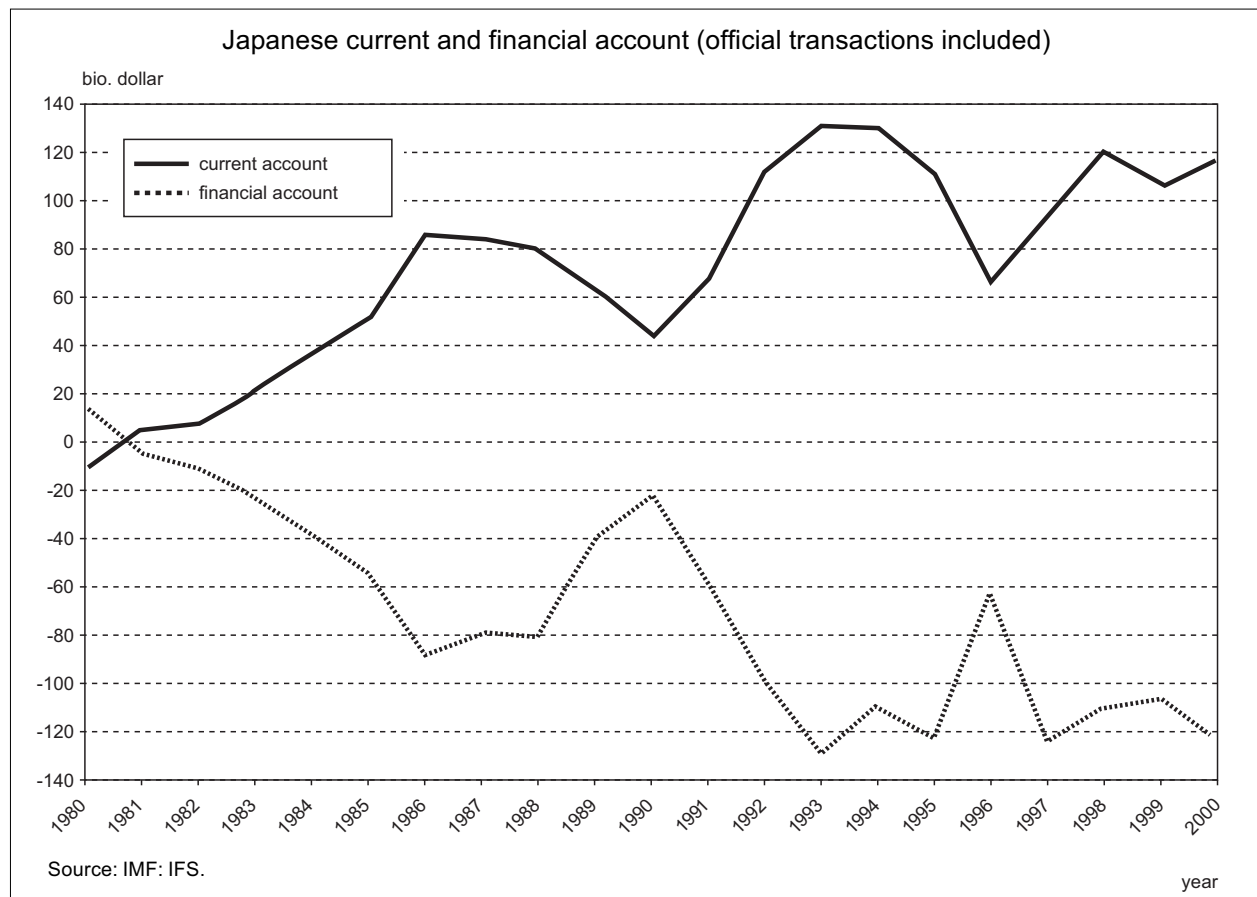
Second, real interest rate differentials can only explain short-run exchange rate movements, because they tend to be phased out by arbitrage. As McKinnon and Ohno

<sup>2</sup> It holds further for the early 1980, when U.S. monetary policy was tightened to bring down inflation in the United States. U.S. real interest rates increased (Figure 5), fueled by the dismantling of Japan's capital controls Japanese money was transferred to the US (Figure 1), and the yen depreciated versus the dollar (Figure 1). The fact that the *enryasu* (the low yen) of the early 1980s continued for about five years contradicts the notion of a short-term relationship. Many authors argued, however, that the persisting yen depreciation was a speculative bubble, which kept the yen too long at an inadequately low value (Modigliani, 1988, 419). This assumption is supported by the rapid appreciation after the Plaza Agreement in September 1985.

<sup>3</sup> The only exceptions are the early 1990s, when the Bank of Japan attempted to burst the bubble economy by a very tight monetary policy. The same is true for short-term money market interest rates (Figure 2). The unchanged expectations are represented by an unchanged distance between the linear trends of the long-term interest rates of the two countries (Figure 4).

<sup>4</sup> Authors who argue that Japanese investors in the United States have suffered huge losses through their capital exports ignore the uncovered interest parity. For instance, Richard Koo, Chief Economist at the Nomura Research Institute, argues that Japanese investors have lost 35 trillion yen through the yen appreciation between 1980 and 1993, because they did not change their profits from the current account surpluses into yen (Koo 1995, 30–33).

Figure 3



(1997, 99) suggest, although difficult to measure, real interest rates in Japan must not necessarily be lower than in the United States. During the last two decades the real interest rate differential between Japan and the United States has been rather small (Figure 5). This indicates a high capital mobility, which equalizes real returns between Japanese and U.S. bonds.

Third, if real interest rates are assumed to be equal, prices seem to exert their influence on the exchange rates in the long run. According to Irving Fisher, nominal interest rates consist of the real interest rate plus a mark-up for (expected) inflation.<sup>5</sup> If real interest rates adjust between two countries, nominal interest differentials and thus different inflation rates would be counter-balanced by the exchange rate alterations. The uncovered interest rate parity points to the role of prices for exchange rate determination, which is analyzed in the following chapter.

### 3. Yen Exchange Rate and Prices

The recession of the 1990s is not only characterized by low interest rates, but also by low inflation. As depicted in Figure 6, export and wholesale prices continued to fall

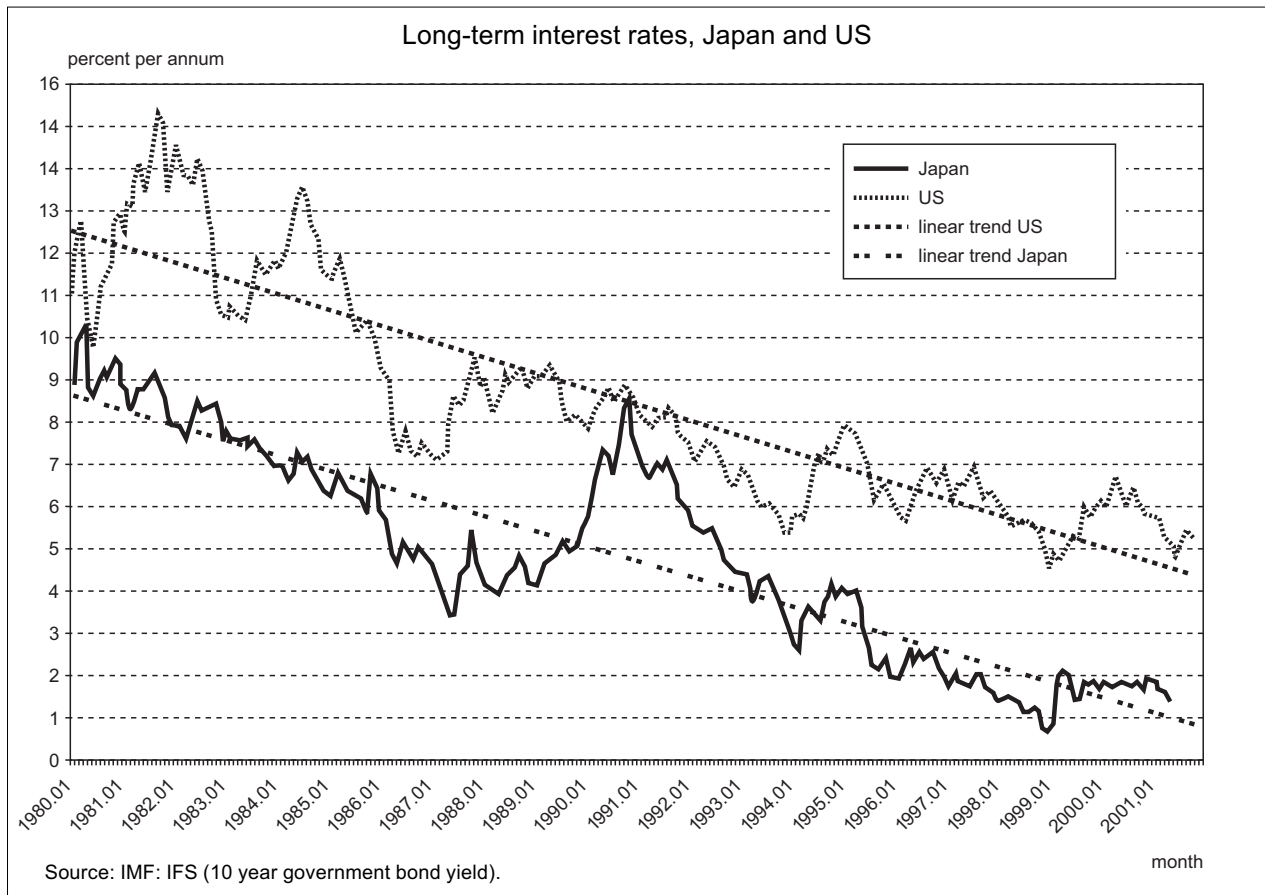
during the 1990s. Consumer price inflation slowed as well and turned negative at the end of the decade. This general deflation not only posed the question of whether inflation-targeting could stop the downward drift of prices, and thus force the Japanese to consume (Krugman, 1998). The influence of prices on the exchange rate has to be analyzed as well.

In general, low inflation (in comparison to abroad) indicates an appreciation. The basic theoretical concept on the exchange rate and prices is that of the purchasing power parity (PPP), which goes back to Cassel (1916). The relative version of PPP states that differences in the inflation rates of two countries equal the changes in the exchange rate of the two currencies.

Although most empirical tests of relative PPP come to the conclusion that "PPP is not a short-run relationship" and "price level movements do not begin to offset exchange rate swings on a monthly or even annual basis" (Froot and Rogoff, 1995, 1648), there is evidence that relative PPP holds for the yen-dollar exchange rate even in the short run, if exclusively based on traded goods prices.

<sup>5</sup> The risk premium is assumed to be zero.

Figure 4



The yen-dollar exchange rate changes can be approximated by inflation differentials between Japan and the US depending on the underlying price concept (Figure 7). While consumer and wholesale prices can at most explain the exchange rate trend, export price based PPP and the yen-dollar exchange rate move parallel. A significant correlation between relative export prices and the yen-dollar exchange rate was proven by Schnabl (2001) for the period between 1980 and 1999 on the basis of annual and quarterly data.

To explain why particularly relative export prices approximate the yen-dollar exchange rate so well, the pricing behavior of Japanese export enterprises is of special interest. According to Marston (1990) and Menon (1995) Japanese exporters tend to lower prices in reaction to an appreciation. While prices were kept by and large stable on the domestic markets, they were reduced on the international markets to avoid a loss of international market share (*pricing to market*).

Athukorala and Menon (1994, 280) identify this incomplete pass through of exchange rate movements to prices in international markets as an “in-built feature” of Japanese export pricing. Hung, Kim and Ohno’s (1993) study

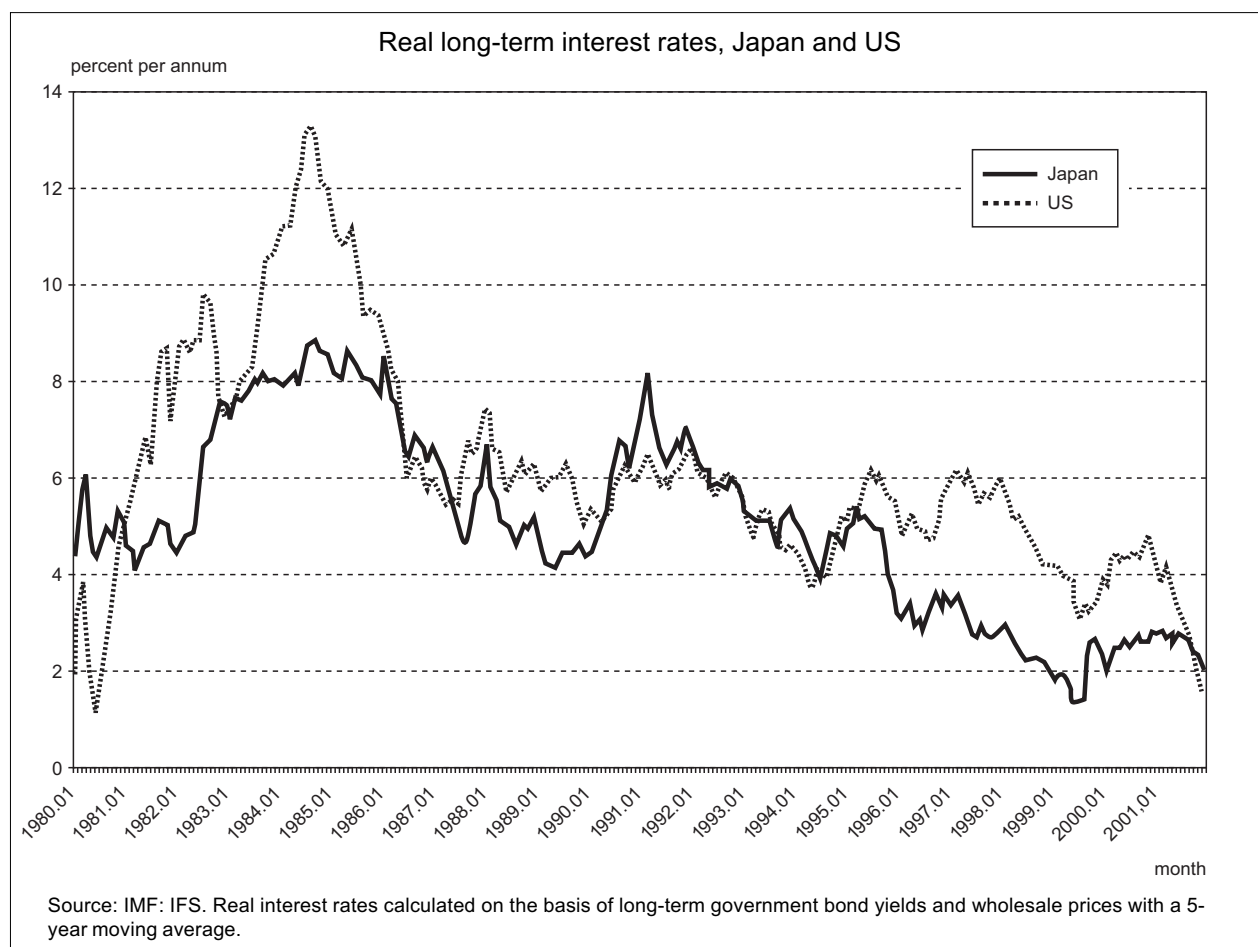
of export pricing compares several countries and comes to the conclusion that this imperfect Japanese shifting behavior is unique among industrial countries. While German and U.S. competitors have steadily augmented their export prices, Japanese enterprises reduced them.<sup>6</sup>

Losses due to imperfect shifting behavior in reaction to an appreciation can be compensated by profit margins in the short run. If — as in the case of Japan — appreciation continues over a long period, only cost reductions can maintain the original rate of return. As attributed by Athukorala and Menon (1994, 272–273) as well as Fukuhara (1996, 124–130), cost reductions and productivity gains have been crucial in coping with the appreciation.

The break-even point of Japanese exports, which gives an average yen-dollar rate at which exports are still profit-

<sup>6</sup> Ohno (1990, 296–298) explains the different pass through behaviors of Japanese and U.S. enterprises with different time frames for profit orientation. The profit orientation is assumed to be relatively long-term for the Japanese enterprises in comparison with U.S. companies. Japanese companies put up with short-term profit losses during exchange rate fluctuations in order to stabilize the market share, which promises higher earnings in the long run. U.S. companies tend towards a complete pass through to avoid losses in the short run.

Figure 5



able and which functions as an indicator for productivity gains, supports this assumption: it fell when the yen gained in value (Figure 8). This is not only true for the period after the Plaza Agreement, but also the 1990s. The recession in combination with the high yen forced the exporters to cut costs in order to stay competitive.

In contrast to the high dynamics of the Japanese export sector, productivity increases have been slow in the domestic economy. As pointed out by the Economic Planning Agency (1994) and the McKinsey Global Institute (2000), regulation is pervasive in a large number of sectors such as agriculture, mining, construction, finance, transport, communication, and distribution. These sectors are insulated from international competition through formal and informal trade barriers, which allows consumer prices to be steadily raised.

Despite the slower upward trend of the consumer price index<sup>7</sup> in the 1990s, the relative increase versus the export prices persisted. Therefore, the observation of De Gregorio, Giovannini and Wolf (1994) that the discrepancy between traded and nontraded goods prices is particularly large in Japan can be assumed to hold true for the 1990s as well.

Hsieh (1982), Marston (1987) and Ceglowski (1996) argue that strongly differing price and productivity development in the Japanese traded and nontraded goods sectors leads to *Balassa's* and *Samuelson's* productivity differential model as a (long-term) explanation approach for the yen exchange rate.

Relative price reductions and productivity increases in the traded goods sector in comparison to the nontraded goods sector are assumed to cause the departure of the exchange rate from (consumer price based) PPP (Figure 7).<sup>8</sup>

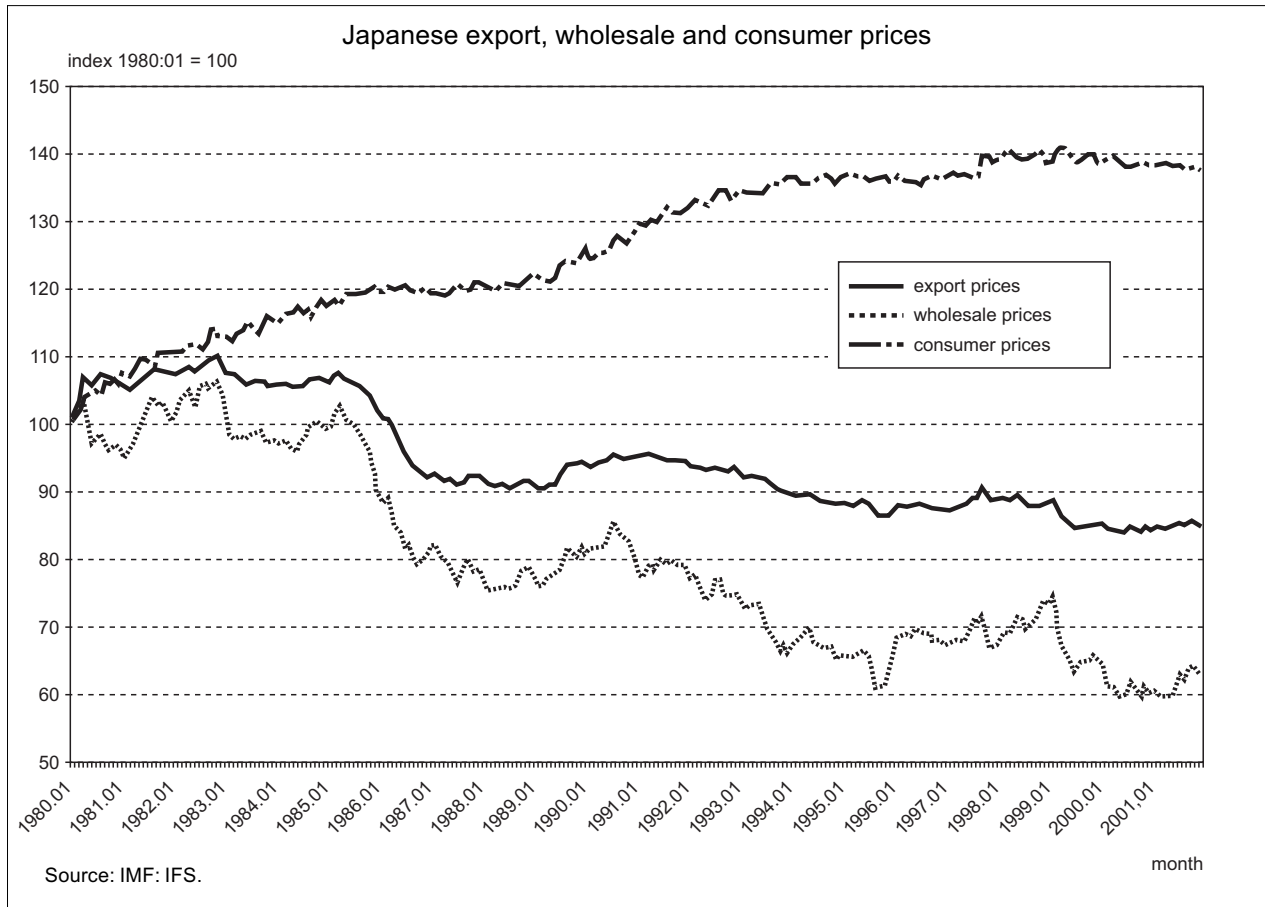
Marston (1987, 92–93) concludes that this productivity gap between the traded and nontraded goods sector caused the need for (real) exchange rate appreciation. In this sense, the long-term appreciation trend of the Japanese yen is rooted in the export enterprises' decision to

<sup>7</sup> The consumer price index contains mostly nontraded goods.

<sup>8</sup> For further explanation of the Balassa-Samuelson approach see Dornbusch (1987, 1078–1079).



Figure 6



increase productivity and lower prices.<sup>9</sup> The yen remained strong in the 1990s, because restructuring and price reductions continued.

Thus, the origins of the *endaka* are located in real sector, which raises the question of the role of interest rates in the determination of the exchange rate. In this context two relationships are possible.

First, as capital flows have reached a very high mobility, there is no doubt that exchange rates are driven by international capital. This implies that capital movements cause an appreciation and prices just adapt. In the late 1990s, the decision of Japanese investors to repatriate capital has brought the yen under appreciation pressure and Japanese enterprises had to lower prices, if they wanted to keep their market share abroad.

Second, as McKinnon and Ohno (1997, 181) put forth, if the exchange is a forward variable that anticipates future changes in fundamentals, the true causality is again from prices to the exchange rate, although the exchange rate alteration precedes the price changes.

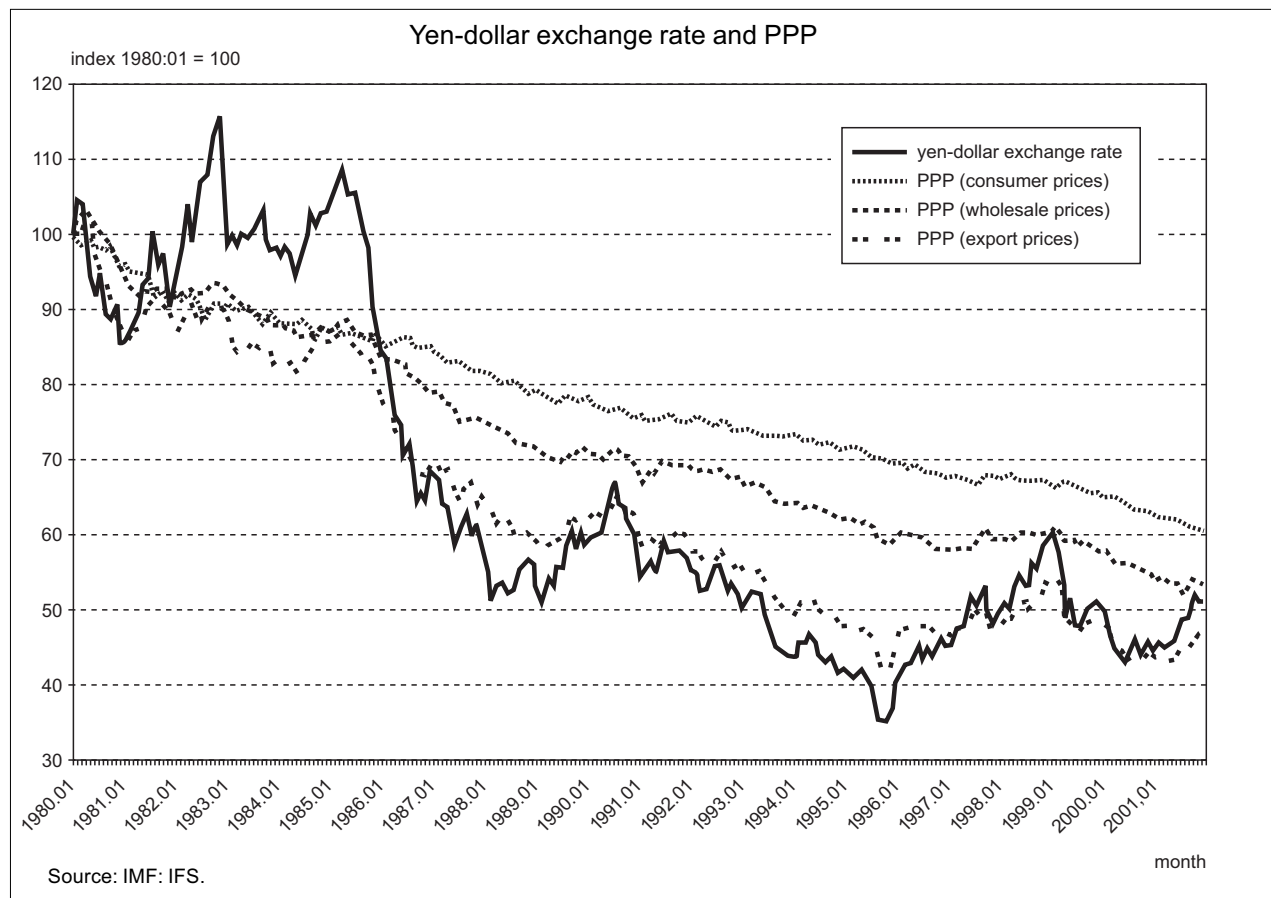
#### 4. Foreign Exchange Market Intervention and Monetary Policy

The fact that prices have to be regarded as a major determinant of the yen exchange leads to the question of how foreign exchange intervention and monetary policy have influenced the value of the Japanese currency. In general, foreign exchange intervention and monetary policy are closely linked. The strong yen, which slowed the

<sup>9</sup> Even if there is strong evidence that the exchange rate had major impact on the pricing behavior of the Japanese export industry, the reverse causality is also possible. Granger causality tests by Schnabl and Baur (2001) indicate that not only appreciation caused the price reductions of Japanese export enterprises, but also that lower export prices put a floor under the yen appreciation and thus reinforced the *endaka*. This points to a (vicious) circle of appreciation and price reductions. When Japanese export enterprises tried to cope with the high yen, they initiated a new round of appreciation.

A causality from prices to the exchange rate would further imply that sinking export and import prices contributed to the 1990s deflation.

Figure 7



already weak domestic activity further during the 1990s, triggered massive foreign exchange intervention (Figure 9).<sup>10</sup> Since every official purchase and sale of foreign currency affects the monetary base, monetary policy is also affected by exchange rate considerations.

Given the continuous upward trend of the yen, Japanese exchange rate policy has been traditionally directed to resist the *endaka*. The first anti-appreciation intervention goes back to the break-down of the Bretton Woods System. When President Nixon announced in August 1971 that he favored a flexible exchange rate between the dollar and the yen, the Japanese monetary authorities felt a “moral obligation” to banks and enterprises, and decided to buy dollars at the 360 yen parity (Henning, 1994, 123–124).

The motivation to lean against an appreciation has since been larger than to intervene against a depreciation (Ramaswamy and Samiei, 2000, 8). The preference of the Japanese government for a weak yen can be explained by the traditionally strong ties between the government and big business as well as by the government’s concerns about economic growth.

According to Funabashi (1988, 101–104), the pressure from industry has been the major source of Japanese ex-

change rate policy. Cargill, Hutchison and Ito (1997, 146–170) prove on the basis of a model of political business cycles that there is a direct interdependency between the re-election of government party members and output.

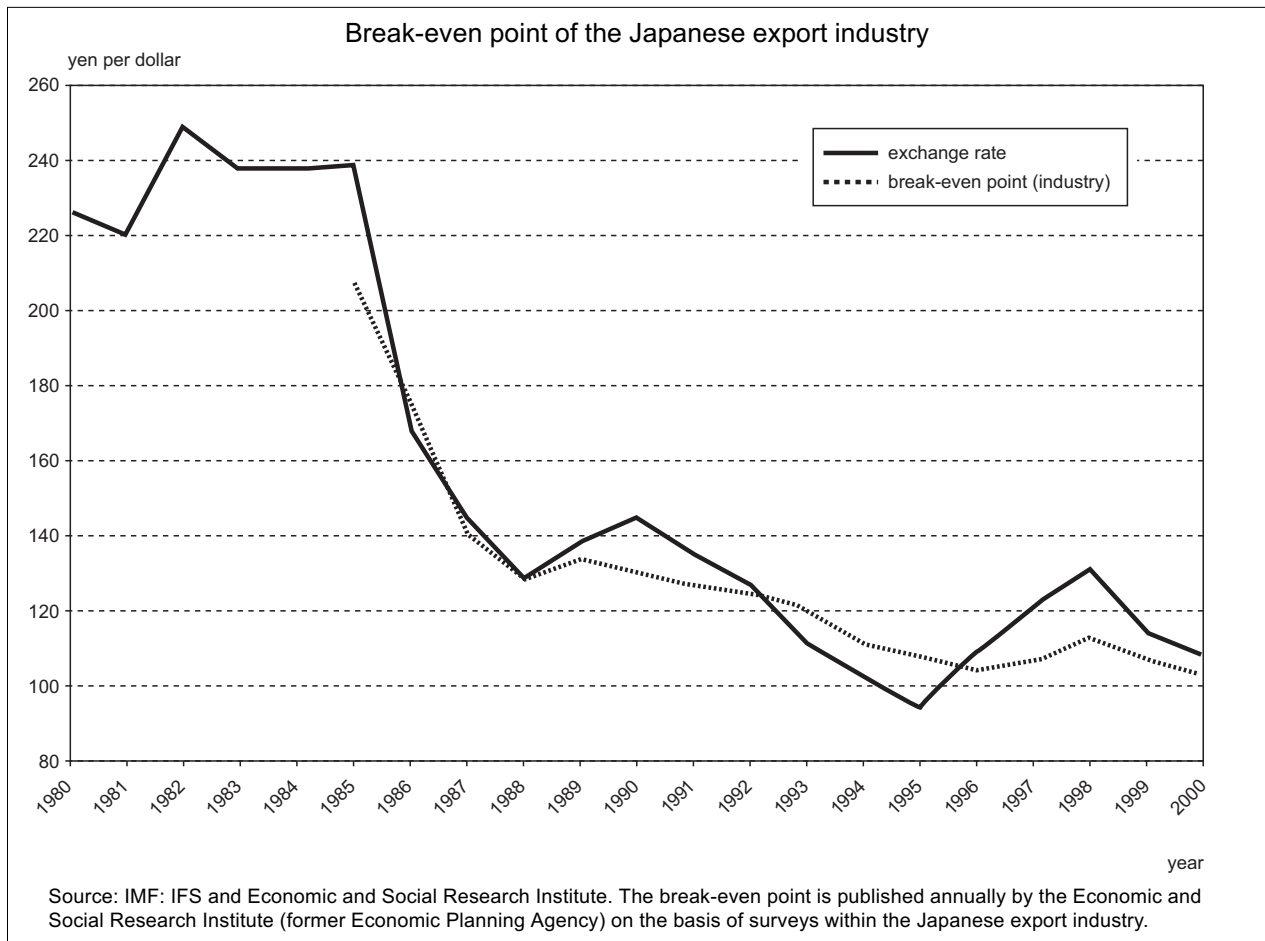
As stressed by Johnson (1982), fostering the export industry has been traditionally regarded as pivotal for economic growth, symbolized by commonly used terms like “export-led growth” (*gaiju shudôgata seichô*) and “high-yen-induced recession” (*endaka fukuyô*). The contribution of exports to economic growth has even increased during the economic slump of the 1990s (Figure 10), which explains the Ministry of Finance’s increasing tendency to foreign exchange intervention (Figure 9).<sup>11</sup>

<sup>10</sup> Since the Japanese central bank does not publish intervention data since 1980, changes in official foreign reserves are used as approximation.

<sup>11</sup> In Japan the finance ministry is exclusively responsible for foreign exchange intervention. According to the Foreign Exchange and Foreign Trade Law (*gaikoku kawase oyobi gaikoku bôeki kanri hô*), Article 7, Para. 3, the Ministry of Finance is authorised to decide on foreign exchange market interventions independently in order to stabilise the exchange rate of the Japanese currency. In the case of intervention, the Bank of Japan acts solely as an agent (Article 36 and Article 40, Para. 2, Bank of Japan Law). The Bank of Japan buys and sells foreign currency on the account of the Ministry of Finance.



Figure 8



Sterilized foreign exchange operations have only short-term effects, however, because they leave interest rates unchanged (McKinnon, 1987, 163). In order to avoid disturbances on the money market, and to keep the short-term interest rate as target of the monetary policy stable, in countries with flexible exchange rates the monetary effects of foreign exchange market intervention are typically offset by open market operations (sterilization) (Baillie and Osterberg, 1997, 910). Since no international capital movements are induced, there is no lasting influence on the exchange rate.

Although the Bank of Japan generally declines to provide information about its sterilization policy, Takagi (1991) proves for the period from 1973 to 1989 that the Bank of Japan absorbed excess liquidity after foreign exchange interventions (at least partially). Data of the Bank of Japan (2000) indicate that this strategy was continued in the 1990s.

Since the sterilization policy contradicts the foreign exchange intervention, a basic conflict between the Bank of Japan and the Ministry of Finance arises. This became apparent in autumn 1999. When the growth of the Japanese economy did not recover and the strong yen put pressure

on the Japanese exports, the Ministry of Finance urged the Bank of Japan to stop its sterilization operations (Tett, 1999). The Bank of Japan (1999) resisted by saying that the exchange rate was not the goal of its monetary policy.

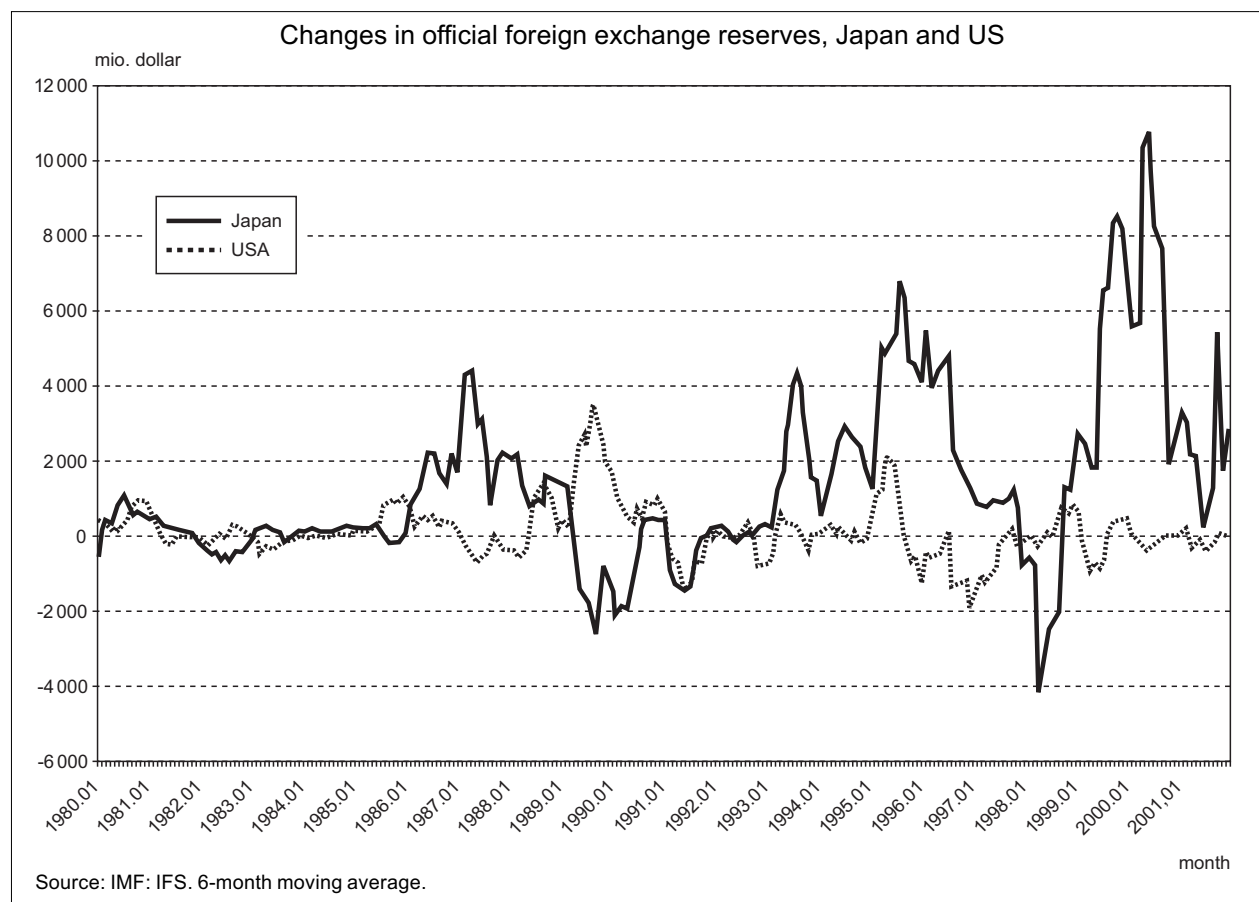
The 1999 sterilization conflict has raised the question of central bank independence. Until 1998 the Bank of Japan was under the supervision of the Ministry of Finance.<sup>12</sup> Unsurprisingly, the degree of independence of the Japanese central bank has been regarded as low (Grilli, Masciandaro and Tabellini, 1991). Foreign exchange interventions were often followed by interest rate changes (unsterilized intervention) (Henning, 1994, 121–175).

Estimations of the Bank of Japan's monetary policy reaction function found that the exchange rate has been a major determinant of Japanese monetary policy (Takagi, 1991; McKinnon and Ohno, 1997, 178–200; Ueda, 1997). Even though the Bank of Japan became officially independent in April 1998,<sup>13</sup> there is strong evidence that Japa-

<sup>12</sup> Article 42 of the Japanese Central Bank Law stated: "The Bank of Japan shall be under supervision of the competent Minister."

<sup>13</sup> Article 3 of the revised Bank of Japan Law now says: "The Bank of Japan's autonomy regarding currency and monetary control shall be respected."

Figure 9



nese monetary policy is still influenced by exchange rate considerations for three reasons.

First, the Ministry of Finance continues to exert influence on the central bank on an informal basis. Second, former managers of industrial enterprises are directly represented on the Bank of Japan board.<sup>14</sup> Third, there is significant pressure on Japanese monetary and exchange rate policy from abroad.<sup>15</sup>

All together there is strong evidence that the Bank of Japan repeatedly changed interest rates to redirect the exchange rate. As depicted in Figure 2, in all major appreciation phases (1986–88, 1990–95 and 1999–2000) the short-term interest rate as the target of monetary policy<sup>16</sup> declined considerably. In all cases, sooner or later the appreciation could be halted (1999–2000) or even reversed (1987–88, 1995–96) and the pressure on the Japanese export industry was lowered.

The impact of the Japanese exchange rate policy in the 1990s on the yen-dollar exchange rate can be summarized as follows. In the short run, sterilized intervention has — by definition — no lasting influence on the exchange rate. Sterilized intervention, such as in the early 1990s or during the Japanese financial crisis in 1998,

consequently had no measurable effect on the exchange rate. Instead transaction costs on foreign exchange markets can be assumed to have risen because of higher volatility.

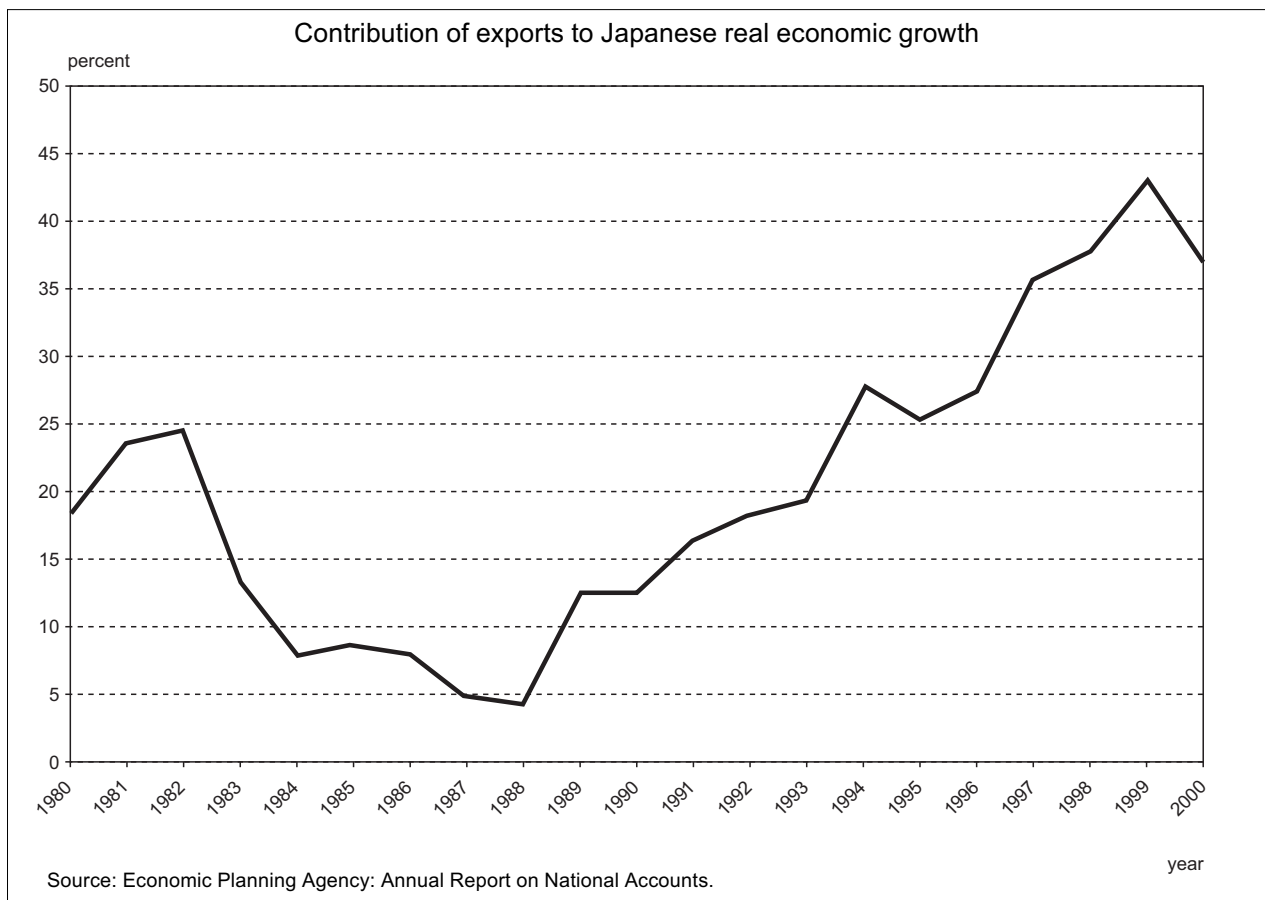
Second, if monetary authorities wanted a sustained effect on the exchange rate, they had to change interest rates. For this reason the Ministry of Finance had to break the resistance of the Bank of Japan against a monetary expansion. When money supply was expanded, for instance in 1995–96, the appreciation could be reversed.

<sup>14</sup> Masaru Hayami from Nissho Iwai, Toshio Miki from Nippon Steel and Nobuyuki Nakahara from Toa Nenryo. The Board consists of nine members. Particularly Nakahara stands out in the Bank of Japan minutes as an extreme supporter of monetary expansion.

<sup>15</sup> Ueda (1997, 265). The foreign pressure on Japanese economic policy has a long tradition and is called in Japanese is called *gaiatsu*. A good example for U.S. pressure on Japanese monetary policy is the paper of Posen (2001).

<sup>16</sup> In 1999–2000, only the monetary base could be expanded, because money market interest rates already had declined to zero percent (Figure 11). In March 2001, the Bank of Japan decided to shift from the uncollateralized overnight call rate as the main operating target of monetary policy to the outstanding balance of the current accounts at the Bank of Japan (Bank of Japan (2001, 1).

Figure 10



Third, the Bank of Japan's discretionary monetary policy had serious side effects. When the Bank of Japan expanded the money supply to stop the drastic appreciation in 1987–88, this also initiated a speculation boom on the real estate and asset markets.<sup>17</sup> With the bursting of the bubble the Japanese economy got caught in the deflation spiral of 1990s.

The interest cuts of 1995–96 not only stopped the appreciation of the yen and brought the Japanese economy back on the path of growth, but also initiated the Asian crisis (1997–98). The economic expansion on the domestic market lowered the outflow of capital, which had fueled the boom in East Asia. The depreciation of the yen eroded the international competitiveness of the East Asian countries, which had pegged their currencies to the dollar. As expansion in Asia was slowed down, international capital was further withdrawn, what caused the crisis (Schnabl, 2000).

The impacts of the 1999–2000 and 2001 monetary expansions are still unclear. As depicted in Figure 9 and Figure 11, in the years 1999–2000 the Bank of Japan not only bought a large amount of dollars to resist the appreciation. It also tolerated an extreme rise in monetary base and money supply (M1). Although prices did not increase

because of the negative economic outlook of the Japanese economy, the question remains as to whether the monetary expansion has created an inflationary potential for the time when the Japanese economy recovers.

All in all, the huge volume of foreign exchange intervention which took place during the 1990s could not reverse the general upward trend in the yen exchange rate. It had mid-term effects at most, if the monetary base was altered, but with the high risks for economic stability. In the long run the yen remained strong despite the massive intervention.

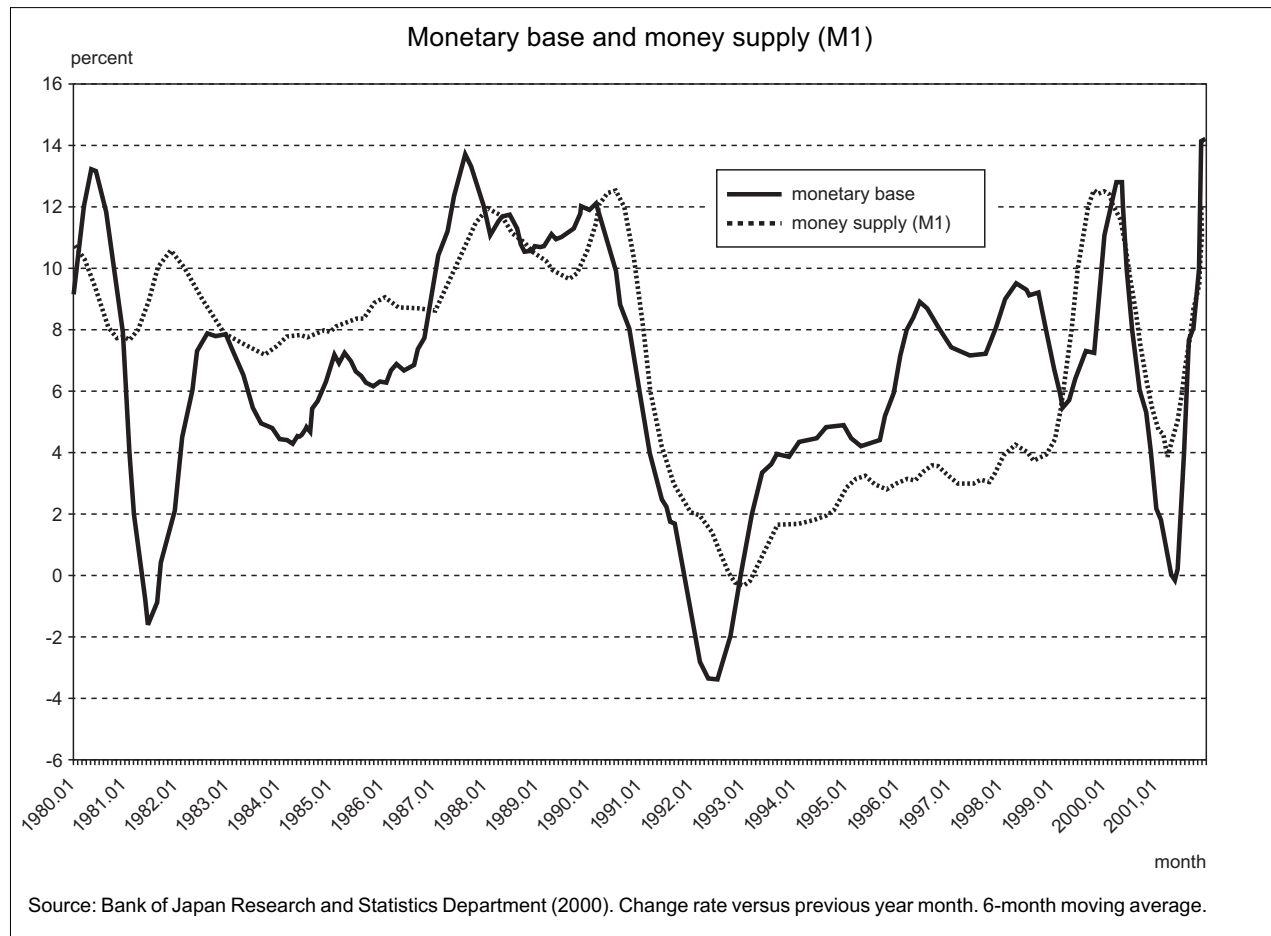
## 5. Prospects for the Yen Exchange Rate

Due to the numerous determinants it is in general difficult to make any predictions about exchange rates. This is — of course — also true for the Japanese yen.

As is often argued, the further development of the yen depends on the prospects of the Japanese economy,

<sup>17</sup> For more information on the bubble economy see Noguchi (1996).

Figure 11



which are currently hard to predict. Although the new Koizumi government has demonstrated the willingness for the necessary economic reforms, the victory of the LDP in the Summer 2000 elections has triggered further losses on the Japanese stock market and a depreciation of the Japanese currency. Later in September 2001, the yen started rising again, although the outlook of the Japanese economy deteriorated rapidly. In late 2001 the yen finally fell substantially.

In the short run international capital flows are the major determinant of the exchange rate. If the disappointment about the Japanese economy continues to grow, capital outflows and thus, according to the Mundell-Fleming framework, a further depreciation could be the consequence.

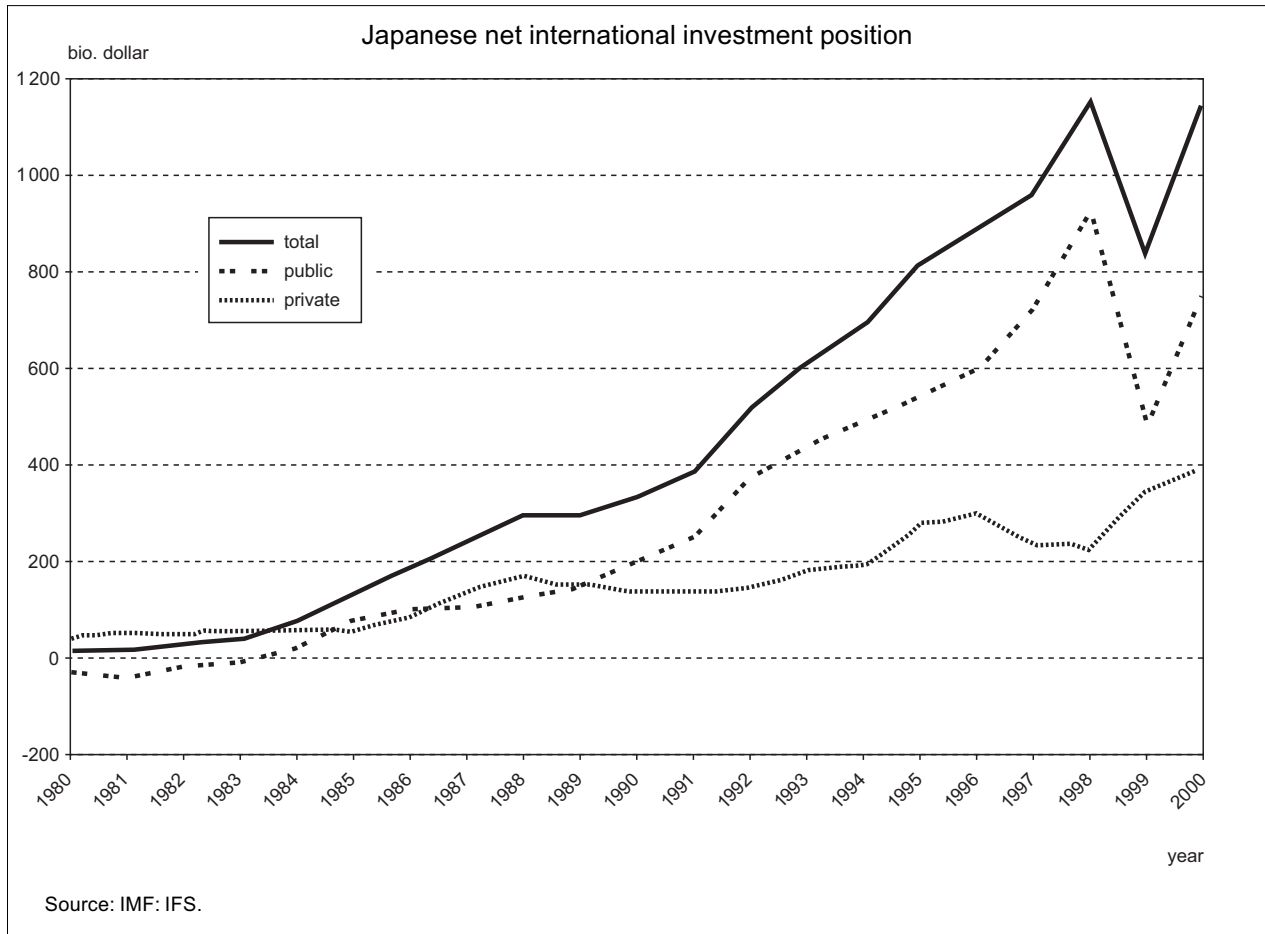
But even if the Nikkei continues to fall, this does not mean that a further depreciation is certain. An aggravation of the bad debt problem could also cause an appreciation. Based on sustained current account surpluses and financial account deficits, Japanese investors have accumulated the world's largest net foreign assets (Figure 12). If Japanese financial institutions decided to repatriate capital — for instance to cover the losses because of bad debts — this would raise the value of the Japanese currency.

An indication of what could happen in such a case was given in 1999, when private financial institutions transferred huge amounts of capital to Japan and the yen came under strong appreciation pressure. The same happened in September 2001, when Japanese banks liquidated overseas assets to offset losses on the domestic stock market (Tett, 2001). From this point of view, Japan's international assets constitute a huge appreciation potential.

Further, monetary policy and prices exert their influence on the exchange rate in the long run. In this case too, forecasts are difficult. If the recession in Japan continues, deflation will persist. According to PPP, a strong yen is to be expected, which would further enforce deflation. The same is true if the Japanese government takes the necessary steps for deregulation. The dismantling of the pervasive competition restraints would trigger price adjustments and therefore support deflation and appreciation.

On the other hand, as outlined in chapter 4, the expansionary monetary policy of the second half of the 1990s has inflated the monetary base. Due to negative economic prospects the monetary expansion was not transmitted to the broader monetary aggregates such as M2 or M3. Thus there was no respective impact on the price level.

Figure 12



When the Japanese economy starts growing again, the monetary transmission process can be assumed to be restored. Then the monetary overhang could be the origin of accelerated inflation. This would bring the yen under depreciation pressure.

Finally, the role of monetary and foreign exchange policy is uncertain. During the 1990s, the Ministry of Finance was determined to resist the yen appreciation. The official foreign exchange purchases of 1999–2000 were unprecedented. In practice the foreign currency, which was converted into yen by private investors, was purchased by the government and reconverted into dollars. As long as the Japanese economy is weak, this attitude will probably persist.

The expansionary monetary policy, which is the direct consequence of unsterilized foreign exchange purchases,

could erode the value of the yen, however. In the late 1990s, the Bank of Japan was urged to fight the recession with ample liquidity. While monetary growth slowed temporarily in late 2000, in April 2001 the Japanese central bank was forced to return to its zero interest rate policy, and growth rates in monetary base and money supply soared again. In late 2001 the Bank of Japan further eased liquidity. If the expansionary monetary policy is continued — which now seems probable — and if money growth is transmitted to more inflation — which now seems less probable — the yen will depreciate.

All in all, the further development of the yen is as unsure as the future of the Japanese economy as a whole. The only thing which seems to be sure is that as long as the interest gap between Japan and the US persists, a sustained yen depreciation cannot be expected.

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## Zusammenfassung

### Schwache Wirtschaft und starke Währung — die Ursachen des starken Yen in den 90er Jahren

*Der Yen ist in der japanischen Rezession der 90er Jahre überraschend stark geblieben. Der Aufsatz untersucht die Ursachen für den hohen Yen. Er analysiert den Einfluss von Zinsen, Preisen und Währungspolitik. Danach haben reale Zinsdifferenzen allenfalls einen kurzfristigen Einfluss auf den Wechselkurs. Langfristig ist das Preisniveau entscheidend, so dass der hohe Yen mit der Deflation der 90er Jahre erklärt werden kann. Die massiven Devisenmarktinterventionen der 90er Jahre konnten die Aufwertung nur vorübergehend aufhalten, wenn sie nicht sterilisiert wurden. Langfristig konnten sie jedoch die Aufwertung nicht verhindern.*