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A SURVEY OF THE INTERNATIONAL USE OF THE YEN

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1. Introduction

The use of the Japanese yen internationally has grown very quickly since the mid-1970s. In particular, its use as an official reserve currency increased more than tenfold in the second half of the 1970s and, as a result, the yen was by the end of 1980, together with the Swiss franc, the most popular official reserve currency after the US dollar and the Deutsche Mark. But in the commercial sphere the yen still continues to play only a minor rôle. This paper sets out to examine the background to these somewhat contrasting situations and their implications.

The use of a national currency at the international level can be viewed, in the same way as domestic use, from three angles: use as a unit of account (currency of invoice); use as a means of settlement; and, finally, use as a store of value (the reserve currency rôle). But in practice it is very difficult to treat the second function separately, since, in most cases, settlement is made in the currency of invoice. It is also hardly possible to make a clear distinction between balances held for "reserve motives" and balances held for "transaction motives". Accordingly, this paper will focus on the yen's rôle as a currency of invoice and financial asset. Further aspects of the internationalisation of the yen, e.g. non-resident borrowing in yen, are not dealt with directly.

The paper is divided into three sections. The first illustrates and examines the background to the relatively minor importance of the yen as a currency of invoice in foreign trade. The second section goes on to review the evolution of the yen as an international financial asset and to examine the factors that have enhanced demand for the yen. The final section seeks to summarise and highlight the implications of this study.

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* For footnotes please see page 24.

2. The yen as a currency of invoice

So far the Japanese yen has played only a relatively minor rôle as a denominator in international commercial practice. There are no data available on the basis of which its use in trade between third countries can be estimated, but such information as there is would suggest that it is fairly negligible. But in its insignificance as a "vehicle" currency, the yen is not very different from other semi-key currencies; what is striking is that the yen is very rarely used even for imports to and exports from Japan. Table 1 shows a sharp contrast between Japan and other industrialised countries as regards the currency composition of import and export invoices. Whereas most of the countries listed in this table invoice more than half their exports, and a significant part of their imports (although much less than in the case of exports), in their domestic currencies, Japan invoices only about 30 per cent. of exports and a negligible 2 per cent. of its imports in yen.

Table 1

Currency of invoice in selected industrial countries.

Countries	Years	Invoicing in own currency: Exports	Invoicing in own currency: Imports	Use of home currency in total world trade in 1977
		in percentages of respective totals		
Japan	1980	31	2	1.7
Austria	1976	55	25	0.9
BLEU	1979	42	28	2.7
Denmark	1979	51	27	0.9
France	1979	62	36	6.5
Germany	1979	83	45	14.1
Italy	1976	39	16	2.4
Netherlands	1976	50	31	3.6
Sweden	1973	67	26	1.8
Switzerland	1976	83	41	2.1
United Kingdom	1979	76	33*	6 - 7
United States	1976	80 - 90	50 - 70	51

* 1978.

Source: Scharrer, H.-E., Die Währungsstruktur im Welthandel, Wirtschaftsdienst, Hamburg, 59. Jahrgang, Nr. 9, September 1979, pp. 454-459, and OECD, CPE/WP3 (81)1, Table 3; except for Japan.

These ratios were even lower in the 1960s, when both imports and exports were invoiced almost entirely in dollars. The ratio of yen-denominated exports jumped after the collapse of the fixed exchange rate system and has risen gradually ever since (Table 2), but not much happened on the import side, despite several attempts by the Government to promote use of the yen.[1]

Table 2

Yen invoicing of exports.

Years	Yen-invoiced bills in total export bills bought by banks	Yen-denominated contracts in total long-term export credits[1]	Yen invoicing in total exports[2]
	in percentages		
1972	.	54	.
1973	.	70	.
1974	13.9	68	23.4
1975	15.1	85	28.2
1976	17.0	82	28.9
1977	19.0	75	29.9
1978	21.4	54	27.1
1979	21.4	49	24.9
1980	26.2	63	30.7
1981[3]	28.3	.	.

1 Credits given by Japanese banks to exporters of ships and plants. 2 Estimated as a weighted average of the first two columns, the weights for the figures in the second column being based on the share of exports of ships and plant in total Japanese exports. 3 January-June.

Source: Ministry of Finance, Annual Report of the International Finance Bureau, several years.

There are various factors that may explain this rather singular phenomenon. There is no doubt that a major one lies in the custom, or "history", of trade financing. In the era of the fixed exchange rate régime, the cost of borrowing tended to be higher at home than abroad; this encouraged trade financing in foreign currencies, reduced the need for financing facilities at home and thus led to a lack of refinancing markets. The use of so-called "window guidance", the quantitative control of bank lending, may also have encouraged trade financing to be done abroad.

But there are many other "non-historical" factors. To start with the import side, the most important one is to be found in the commodity make-up of Japanese imports (Table 3): half of total Japanese imports is accounted for by energy, and more than a quarter consists of agricultural products and raw materials. This bias towards primary goods is significant even if compared with a similar industrial and trade-oriented economy such as Germany. Most of the prices for these homogeneous goods are fixed - at least in the short run - in US dollars (crude oil, etc.) or determined in the commodity market, generally also in dollars. It is quite natural that these commodities should be invoiced in the currency in which the price is set. Furthermore, from the importers' standpoint, the elasticity of aggregate domestic demand for such commodities is usually low, at least in the short run; the domestic market price thus tends to be fairly sensitive to exchange rate movements, so that a considerable part of the importers' risk - in a sense - will automatically be hedged by the change in the yen inventory value of the imported goods.[2]

On the export side, geographical composition provides an important explanation (Table 3). About a quarter of Japanese exports are shipped to the United States, while the rest are spread all over the world, with the developing countries taking a major share. In many cases the absence of any, or the presence of only a thin, local (forward) yen market

Table 3

Trade structure by commodity and area for Japan and Germany, 1980.

Commodity	Exports		Imports	
	Japan	Germany	Japan	Germany
	in percentages of total exports or imports			
Agricultural products	1.3	5.2	10.7	11.2
Raw materials ...... (excluding energy)	1.1	2.1	17.5	7.9
Energy	0.4	3.8	50.1	22.6
Industrial products	96.1	87.1	21.0	55.8
Non-classified items	1.1	1.8	0.7	2.5

Area	Exports		Imports	
	Japan	Germany	Japan	Germany
	in percentages of total exports or imports			
OECD	46.0	76.4	33.5	72.9
of which:				
US	24.4	6.1	17.5	7.6
EEC	12.8	48.1	5.4	46.5
Other	8.8	22.2	10.6	18.8
OPEC	14.3	6.5	40.4	11.1
COMECON	3.0	5.0	1.6	4.6
Others	36.7	12.1	24.5	11.4

Source: OECD, Trade by commodities, January - December 1980.

might make it difficult for importers to hedge the exchange risk if the exported goods were invoiced in yen. In contrast to the Japanese case, German exports to the United States account for only 6 per cent. of total exports. German exports are much more concentrated on a few European countries, where importers will have little difficulty in covering the exchange risk by buying forward Deutsche Mark. The fact that yen invoicing is most common for exports to the European Community (Table 4), where the yen (forward) market is well developed, seems to support this argument.

An additional factor might be the existence of large trading companies in Japan. The import and export turnover of the nine largest trading companies amounts to more than half of total Japanese trade; even bearing in mind that in many cases they are only acting on behalf of customers, they can hedge the risk attaching to dollar-denominated exports to some extent by the risk on the import side. Similar reasoning can be applied, for example, to the large steel companies, whose raw material imports roughly match their exports.

Let us sum up these factors in somewhat general terms: if the transaction is hedged in some way, in theory the currency in which the trade is invoiced makes little difference to importers and exporters, and the best solution for both parties is that the one who can cover the risk at the lower cost takes the cover. In this sense the Japanese exporter seems to have a significant advantage.

In the real world, in addition to the pure invoicing problem, a slightly different aspect of exchange risk comes into play for the exporter. He can, and in many cases does, cover the risk arising from exchange rate movements between the date of contract and settlement, but he cannot, especially if he is exporting industrial goods ("fixed price" goods), change the "list price" or "offer price" every day according to the exchange rate; he has to decide to "set" his price either in his own or in a foreign currency at least over a certain period. If he sets his price in his domestic currency, he will face less uncertainty about profit per unit but more uncertainty about the volume of demand, unless he is living in a world of perfect purchasing power parity. The preference of the Japanese export industry for less uncertainty about the volume of demand (probably based on the inflexibility of the labour force and relatively long-term export strategies), even at the cost of greater risk on the profit level,

Table 4

Japanese exports: Currency of invoice by commodity and area, 1981.

Items	US dollar	Yen	Other currencies
	in percentages of total		
Total exports	61.4	32.5	6.1
By commodities:			
Foodstuffs	81.9	15.5	2.7
Textiles	78.9	18.3	2.9
Chemicals	77.2	15.4	7.5
Non-metallic mineral manuf.	59.4	37.2	3.4
Metallic manuf.	82.0	16.0	2.0
Iron	91.2	7.5	1.3
Machinery	49.9	42.8	7.2
Generators	49.7	48.3	2.1
TVs	61.3	28.5	10.2
Tape-recorders	40.0	43.9	16.2
Automobiles	47.6	46.4	6.0
Ships	36.6	59.8	3.6
Heavy electric manuf.	52.5	41.1	6.5
Other	59.9	30.8	9.2
By area:			
Developed area	61.4	32.5	6.1
USA	83.4	17.4	1.4
EEC	11.2	55.4	33.5
Developing area	69.1	29.5	1.4
South-East Asia	69.5	29.2	1.3
West Asia	67.4	30.8	1.8
Latin America	76.3	23.4	0.3
Africa	60.2	37.1	2.8
Communist countries ..	70.5	20.2	9.3

Source: Ministry of International Trade and Industry. Data for July 1981.

Note: Compiled by number of export contracts, rather than by the volume of exports.

may also have had something to do with the relatively minor use made of the yen for invoicing.

It therefore appears that, although the relatively low importance of the yen in trade is partly due to tradition and financing (in)convenience, it can be explained to a large extent by trade patterns, and also in terms of rational behaviour based on exporters' and importers' preferences. Accordingly, any change will be gradual and any policy to promote the use of the yen artificially would probably not be very effective.

3. The yen as an international asset

3.1 Development of yen holdings by non-residents

In contrast to the rather modest increase in the use of the yen as a currency for invoicing, the use of the yen as a financial asset has developed impressively over the last few years. Non-residents' yen deposits with commercial banks in Japan and with Euro-banks grew from only US$ 3 billion at the end of 1976 to US$ 30 billion at the end of 1980 (Table 5). At the same time, estimated foreign holdings of yen securities (excluding equity shares) rose from US$ 5 billion to US$ 25 billion. Thus, total identified holdings of yen assets by non-residents grew over the four-year period by US$ 50 billion; even taking account of the appreciation of the yen against the dollar during this period, this amounts to an increase of about US$ 44 billion.

In the 1960s non-residents' holdings of yen assets were restricted more or less to company shares. The first signs of a move into other yen assets were observed around 1970. Developments between then and 1981 can be roughly divided into the following five periods (Table 6).

(i) The embryonic phase - 1970 to 1972

The first period coincided roughly with the transition from the fixed to the floating exchange rate system. Japan's structural deficit on current account had given way to a "structural" surplus around 1968-69, and by 1970 it had become increasingly obvious that the yen was undervalued. Expectations of a parity appreciation, which were strengthened by the revaluation of the Deutsche Mark in 1969, triggered speculative moves. Along with large-scale inflows of capital through trade financing channels and "leads and lags", purchases of yen assets grew rapidly. The amount of non-resident yen deposits outstanding, which had moved quite steadily around US$ 0.3-0.4 billion until the end of 1969, showed a very rapid increase and reached US$ 0.9 billion by mid-1971. The purchase of Japanese securities by foreigners rose even more dramatically; estimated holdings of Japanese securities by non-residents, which had shown virtually no increase since 1966, suddenly shot up by more than US$ 1 billion in the same period.

Table 5

Identified yen assets held by non-residents.

Years	yen assets held by: Foreign monetary authorities[1]	yen assets held by: Banks in Japan	yen assets held by: Banks abroad	placed in: Japanese bond market[2]	placed in: Euro-bonds	Total	Memo items: Total/GNP	Memo items: Total/Trade
	in billions of US dollars						in percentages	
1970	0.01	0.5	.	0.9	.	1.4	0.7	4.1
1971	0.05	0.9	.	1.6	.	2.5	1.0	6.4
1972	0.1	0.9	.	2.1	.	3.0	1.0	6.4
1973	0.1	0.7	.	2.3	.	3.0	0.8	4.4
1974	0.1	0.9	.	2.4	.	3.3	0.7	3.1
1975	0.2	1.5	0.6[2]	3.5	.	5.6	1.2	5.4
1976	0.5	1.9	1.1[2]	5.2	.	8.2	1.5	6.7
1977	0.7	4.1	3.1	9.2	0.1	16.5	2.2	11.7
1978	2.6	8.7	7.9	15.3	0.2	32.1	3.1	19.4
1979	2.4	3.8	14.0	14.4	0.4	32.6	3.6	16.3
1980	3.3	12.3	17.3	25.1	0.7	55.4	4.8	22.0
1981	2.6	13.2	26.8	.	.	.	.	.

1 The bulk of this item consists of accounts with the Bank of Japan which the latter operates in the form of short-term government bonds and which are thus included in the item "bonds in the home market". This item is therefore excluded from the total in this table.
2 Estimated from the flow of funds statistics.

Sources: International Banking Statistics and Data on External Monetary Positions, Bank for International Settlements; Financial Market Trends, OECD; Economic Statistics Monthly, Bank of Japan.

Table 6

Development of yen assets held by non-residents.

Items	1970 Q1 to 1972 Q1	1973 Q1 to 1977 Q3	1977 Q4 to 1978 Q1	1978 Q2 to 1979 Q4	1980 Q1 to 1981 Q2
	in billions of US dollars (annual percentage changes in parentheses)				
Yen assets held in Japan[1]	3.1 (52.4)	6.9 (19.5)	11.3 (302.9)	-1.2 (-3.7)	19.2 (532)
Total yen assets excl. double-counting[2]	-	-	12.3 (338.7)	7 (16.0)	18.9 (37.4)
Memo items:					
Nominal trade growth	(20.2)	(29.8)	(25.3)	(20.8)	(20.0)
Current-account balance	14.1 (4.7)	5.0 (1.1)	8.9 (17.8)	-2.6 (-1.5)	-10.0 (-6.7)
Change in dollar/yen rate, in percentages	18.5 (5.8)	13.8 (2.8)	19.4 (42.6)	-7.3 (-4.2)	6.3 (4.1)

1 Adjusted for the change in the exchange rate and expressed at constant end-1980 rate. Assets with the Bank of Japan and Euro-bonds are excluded.
2 Break in series owing to the start of Euro-yen statistics (the gap in the total net ban used in this table is small).

The policy stance of the Japanese Government around 1970 and 1971 was aimed at preventing (or at least delaying and minimising) the appreciation of the yen. Accordingly, various measures were taken to curb the inflow of capital, especially the speculative acquisition of yen assets. A feature of the measures taken during this period was that many of them were direct controls on transactions.[3] In March 1971 non-residents were prohibited from purchasing short-term government securities, which had been one of the main targets of speculation. This measure was ultimately extended in October 1972 to a general ban on the net purchase of Japanese securities. As for banking flows, the level of free-yen accounts (freely convertible yen deposits by non-residents) was "frozen" when the yen was virtually floated in August 1971. This direct restriction was removed in January 1972, but controls on the conversion of foreign currency (free-yen were treated as a "foreign currency") into yen by foreign exchange banks had already been strengthened in December 1971; speculative inflows through this channel were made unattractive since the banks which accepted yen deposits from non-residents had to match the yen liabilities with dollar assets and thus take the final exchange risk themselves. Finally, in June 1972 a 25 per cent. marginal reserve requirement on free-yen was introduced, to be raised to 50 per cent. soon afterwards. As a result of these strict measures the increase in holdings of yen assets by non-residents came to a halt, and they actually dropped in 1973.

(ii) <u>A period of relatively modest growth - 1973 to autumn 1977</u>

Whereas the first period had been marked by strong demand for yen assets and efforts on the part of the authorities to limit their supply, the second period, from 1973 to autumn 1977, was one of modest demand and easy supply. Following the weakening of the yen rate after the transition to the floating exchange rate system, and the quick turn-round of the balance on current account, which was due partly to the overheating of the domestic economy and partly to the impact of the first oil shock, the foreign exchange controls were reversed. Together with tighter controls on outflows of capital, restrictions on investments by non-residents in yen assets were relaxed in 1973, and practically eliminated in 1974. But the less buoyant outlook for the yen rate made such investment unattractive; although the decline stopped in the second half of 1973, the increase in the following few years was modest. Free-yen deposits doubled in the period as a whole, and the amount of yen bonds in foreign hands nearly tripled, but their growth was not much out of line with the growth in nominal gross national product and trade, which, to a large extent as a result of inflation, also doubled and tripled (in dollar terms) respectively between 1973 and 1977.

(iii) An incipient reserve currency - autumn 1977 to spring 1978

The third phase, from late 1977 to the spring of 1978, was once again a period of strong demand for yen assets, triggered by the marked strength of the yen, and a drive by the authorities to curb the supply of yen assets. It was also in this period that the yen started to play the rôle of an official reserve currency of some importance.

Japanese banks' yen liabilities vis-à-vis non-residents more than tripled from US$ 2.6 billion to US$ 8.6 billion in the six months between September 1977 and March 1978 (adjusted for the appreciation of the yen against the US dollar[4]). Deposits from official monetary institutions with commercial banks in Japan rose from only US$ 0.3 billion to US$ 1.8 billion. This big jump took place despite the introduction of the 50 per cent. marginal reserve requirement in November 1977. In the same period, foreign holdings of yen securities saw a 60 per cent. increase.

To stem this rush the marginal reserve requirement was raised to 100 per cent. in March 1978, and the purchase of yen securities with maturities of less than five years and one month was prohibited.

(iv) Expansion of the Euro-yen - spring 1978 to early 1980

The next period, from the spring of 1978 into early 1980, was marked by the following features. As a result of the measures mentioned above, the inflow into yen securities virtually stopped and there was an outflow out of free-yen deposits. In contrast, Euro-yen deposits increased considerably, making up for the decline in the home market. This tendency was not only observed when the yen rate was strong but continued even after it weakened, and the restrictions on investment in domestic yen assets were removed in 1979. At the end of 1979 total estimated yen assets held in Japan by non-residents were roughly at the March 1978 level, but Euro-yen holdings had tripled in the same time-span. Another event during this period was that the US authorities, as part of their dollar defence package of November 1978, converted their reserve tranche and SDRs into yen held with the Bank of Japan. But as a result of the weakening of the yen only a small part of this yen reserve was actually used; moreover, the US authorities acquired further yen through market interventions. Overall, estimated non-resident holdings of yen assets saw an increase of more than 40 per cent. during the period.

The explosion of the Euro-yen market requires a somewhat deeper examination. Table 7, which summarises its evolution since the end of 1977, illustrates two interesting features. The first is the rather large swing in the net asset position of the Euro-banks. From March 1978 to the end of 1979 their net asset position showed a decrease of 4.5 billion (current) US dollars. But the forces behind this phenomenon were quite different in 1979 from those in 1978. In 1978 expectations of a further appreciation of the

Table 7

Sources and uses of net Euro-yen funds.

Items	1978*	1979	1980	1981 Jan.-Sept.
	changes, in billions of US dollars			
Sources				
(A) = Liabilities to non-banks and official monetary institutions ...	1.5 (1.2)	2.6	- 1.2	0.3
(B) = Liabilities to non-Euro-banks	1.2 (0.8)	1.0	1.4	1.9
(S) = (A) + (B)	2.6 (2.0)	3.6	0.2	2.2
Uses				
(C) = Lending to non-banks and official monetary institutions	0.7 (0.3)	0.3	1.1	2.6
(D) = Assets held with banks in Japan	1.4 (0.3)	- 1.5	2.6	0.3
(E) = Assets with other non-Euro-banks	0.8 (0.5)	1.2	- 0.5	1.9
(U) = (C) + (D) + (E)	2.9 (1.1)	0.0	3.2	4.0
(U) - (S) = Change in net asset position in yen ...	0.3 (-0.9)	- 3.6	3.0	2.6
Memo item:				
Change in inter-Euro-bank deposits	2.2 (1.9)	2.6	3.2	2.1

* Figures in parentheses are from March 1978 to December 1978.
Source: International Banking Statistics, Bank for International Settlements.

yen, combined with the restrictions on the purchase of domestic yen assets, caused a rush into Euro-yen deposits. Only part of this increase could be met by lending in yen and re-depositing with Japanese banks; as a result the Euro-banks' net yen asset position declined. Probably a large part of this change was covered by an increase in forward buying of yen by Euro-banks. The change in 1979 was effected by a somewhat different mechanism. The dollar/yen rate peaked in late 1978, and in 1979 the market's expectations concerning the yen rate were anything but buoyant. Although there was an increase in yen deposits from OPEC authorities, this was not enough for the Euro-banks to cover the risk arising from the excess forward sales of yen by their customers; they had to draw on yen deposits with Japanese banks to fill the gap (selling against dollars).

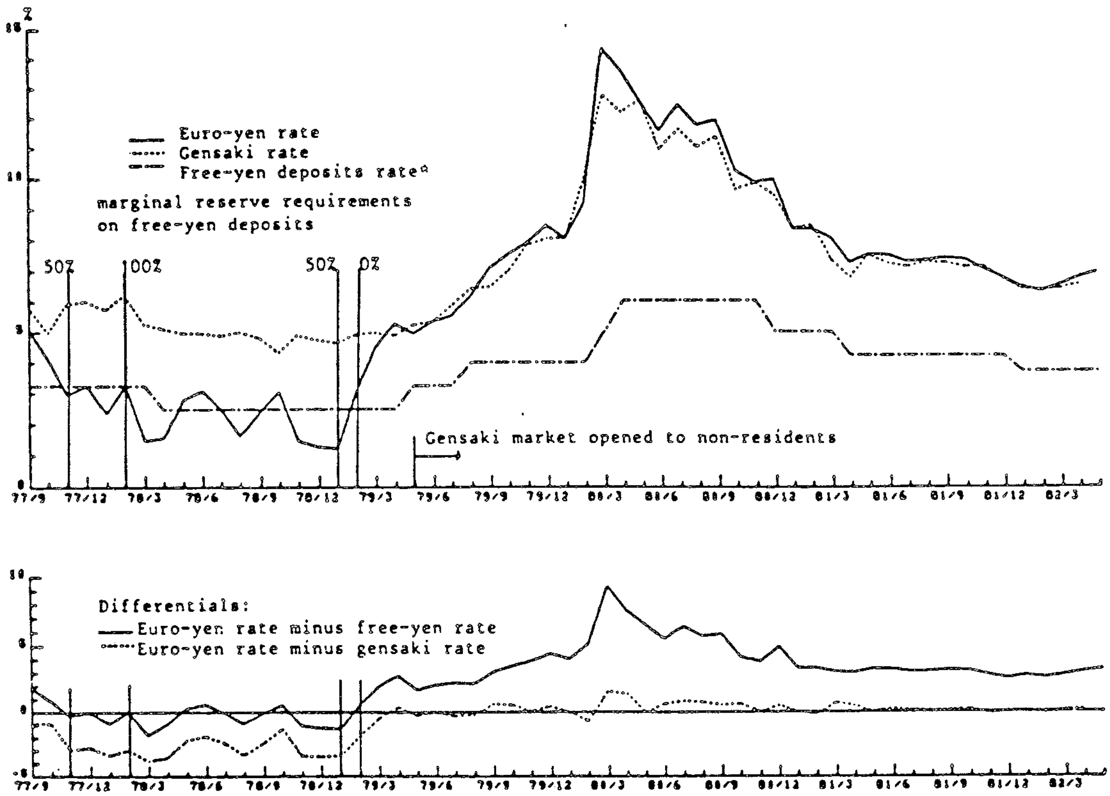
The second feature is the very rapid expansion of inter-Euro-bank business in yen. The share of inter-Euro-bank deposits in total Euro-bank deposits grew from only 18 per cent. at the end of 1977 to 35 per cent. at the end of 1978 and 38 per cent. at the end of 1979.[5] There are several possible explanations for this phenomenon. Firstly, Euro-yen business was perhaps just in a "take-off" phase. Secondly, the restrictions on holdings of domestic yen deposits caused pure interbank business to move from Tokyo to London. Thirdly, as regards the increase in yen exports to Europe - more of a trend factor - Euro-banks met the increase in forward purchases by European importers by buying yen spot and placing them with other Euro-banks. Lastly, the above-mentioned forward covering and borrowing activity probably took the form of a "chain reaction".

In addition to the removal of restrictions, several fundamental changes which were of great importance for the future international use of the yen took place in this period. Firstly, domestic interest rates, which had been quite rigid, saw a major liberalisation; banks were permitted to issue negotiable certificates of deposit outside the interest rate guidelines; the Bank of Japan started to use the public tender method for market operations; long-term government bond rates in the secondary market were gradually decontrolled. Secondly, in May 1979 foreign investors were allowed to place funds in the Gensaki market.[6] Thirdly, the Government decided to amend the foreign exchange law and make foreign exchange transactions free of control in principle. Although this amendment did not come into effect until December 1980, the existing law was applied more flexibly than before. Graph 1 illustrates how the relaxation of foreign exchange controls and the above liberalising measures allowed efficient interest rate arbitrage to take place between the Euro-market and the domestic market.

Graph 1

Interest rates in the domestic and Euro-yen markets.

(three-month rates)



* Free-yen rate applied to deposits other than those for which the official interest rate ceiling is exempted.

(v) Recent movements

The last phase, which is still going on, started in the spring of 1980 - a period of renewed increase in yen assets held in Japan. This resurgence was mainly the result of the following two interrelated factors. Firstly, in March 1980 the authorities introduced a policy package to support the yen, which included the relaxation of controls on inter-office accounts and the exemption of deposits held by foreign monetary authorities from interest rate regulations. Secondly, almost coinciding with the introduction of these measures, the yen began to recover; as the outlook for the current account improved, the yen appreciated against the dollar and to an even greater extent against other reserve currencies. These two factors gave momentum to investment in yen assets, the total of yen assets held by non-residents rising by about US$ 23 billion, or more than 60 per cent., between the end of 1979 and June 1981. The pronounced feature of this period was the shift from Euro-yen to yen held directly in Japan; whereas the former only increased by US$ 4 billion (the major part of which was recorded in the first quarter of 1980), the yen liabilities of Japanese commercial banks vis-à-vis non-residents and foreign holdings of yen securities rose by US$ 8.5 billion and US$ 10.7 billion respectively.

This period is also remarkable in that it was the first time that the shift into yen assets was welcomed, or at least tolerated, by the authorities. The reason was the positive impact on the yen, its clear undervaluation having been an obstacle both to anti-inflation and to trade policy, and the expected large current-account deficit. A further point worth making is the difference in the nature of the foreign exchange policy reaction to the recent (1978-early 1980, and 1981) weakness of the yen, and that of 1973-75. In the earlier period foreign exchange policy had sought both to curb the outflow and foster the inflow of capital; although some measures were taken on the capital export side as well, the weight of effort was this time much more centred on the latter objective. An important background feature of this difference in policy stance may be found in the fact that performance of the "fundamentals" in Japan, especially with regard to inflation, was among the best of the major countries (in contrast to 1973-74), and thus the risk of a "vicious circle" was small. This favourable situation gave the authorities some scope to avoid relying heavily on restrictive measures on capital outflows, which might have had an immediate effect on the balance of payments and exchange rates but have further distorted the international allocation of resources.

3.2 Composition of non-resident yen assets

Classified by location and type of assets, about two-thirds of non-resident yen assets at the end of 1980 were placed in Japan, of which one-third was placed with banks and two-thirds in securities. One-third of total non-resident yen assets was placed in the Euro-market, mostly as Euro-bank deposits, the issue of Euro-yen bonds being limited to special cases.

Table 8

Composition of world yen deposits by holder.

Holder	1977	1978	1979	1980	1981[1]	memo item: DM, 1981[1]
	year-end percentages of total					
Non-banks	19.6	12.5	9.9	9.3	9.5	13.8
Official monetary institutions	31.0	38.2	36.4	30.6	26.3	14.3
Banks	49.4	49.3	53.7	60.1	64.2	71.9
of which:						
Euro-banks' deposits with banks in Japan	13.3	12.9	4.7	10.6	10.9	15.0[2]
Inter-Euro-Bank deposits	7.1	14.3	26.1	25.7	28.1	27.7
Other[3]	29.0	22.1	22.9	23.8	25.2	29.2

1 September 1981. 2 Deposits with banks in Germany. 3 Including unallocated Euro-deposits with banks (about 8 per cent. at June 1981).

Source: International Banking Statistics and Data on External Monetary Positions, Bank for International Settlements.

Disregarding securities, for which a breakdown is not available, about one-third of total deposits (Table 8) was held by foreign official monetary institutions, this ratio having been fairly stable since the end of 1977 when the BIS Euro-yen statistics started. Non-banks accounted for about 10 per cent. of the total in 1981.

The interbank deposits include a large amount of "double-counting". By end-1980 about 30 per cent. of domestic (commercial) banks' interbank liabilities were vis-à-vis Euro-banks, the major part consisting of inter-branch accounts, and about 50 per cent. of the Euro-yen deposits were inter-Euro-bank deposits.[7] These two items together accounted for almost 40 per cent. of total yen deposits, or about 20 per cent. of total identified yen assets held by non-residents. The securities item might also be somewhat exaggerated in that a significant, but not identified, part of "foreign" investment in the Gensaki market is made by overseas affiliates of Japanese firms, notably trading companies and securities firms.

Table 9 shows non-bank and official holdings of yen in relation to economic scale and in comparison with the Deutsche Mark. Non-banks' assets have grown, in very rough terms and ignoring fluctuations, only in relation to trade, and their ratio to trade and gross national product is significantly lower than in the case of the Deutsche Mark. This might, to some extent, reflect the fact that the yen is little used for trade invoicing and settlement. In particular, non-banks' deposits with banks in Japan have fallen, not only in relation to trade and gross national product but also in absolute terms, since the Euro-yen rate started to move parallel to free-market (Gensaki, bill discount) rates and became much more attractive than regulated (free) yen deposit rates. On the other hand, deposits of official holders have grown much faster than nominal trade or GNP and by the end of 1980 their size relative to trade was about 40 per cent. of the corresponding figure for Deutsche Mark.

Table 9

Non-resident holdings of yen and DM.

Items	Yen			DM		
	Total	Non-banks	Official monetary institutions	Total	Non-banks	Official monetary institutions
	in percentages of GNP or Trade					
Banks in Japan*:						
GNP 1971	0.4	0.1	.	2.6	0.7	0.3
1977	0.5	0.1	0.1	4.3	1.4	0.4
1980	1.1	0.1	0.4	6.7	1.7	0.6
Trade 1971	2.4	0.7	.	7.7	2.2	1.0
1977	2.9	0.8	0.6	10.1	3.2	0.9
1980	4.9	0.4	1.8	14.4	3.6	1.4
Banks in Japan* and Euro-banks:						
GNP 1977	0.9	0.2	0.2	14.6	2.4	2.5
1980	2.6	0.3	0.6	24.4	3.1	3.9
Trade 1977	5.0	1.1	1.3	34.5	5.7	5.9
1980	11.8	1.2	2.7	52.7	6.8	8.3

Source: International Banking Statistics and Data on External Monetary Positions, Bank for International Settlements.

* Banks in Germany in the case of DM.

3.3 Determinants of demand for yen assets

This section sets out to examine the factors that determine the demand for yen as a store of value, on the part of both private and official holders.

There is a wide range of potential holders of international assets. As mentioned in the introduction, it is hard to draw a distinction between holdings for reserve motives and holdings for transaction motives, but we can use this distinction in a highly conceptual sense in order to classify the various holders.

One extreme type of holder is the "transaction holder". Foreign exchange authorities of developed countries, especially when their currencies are also used as reserve currencies, can be put in this category. Besides the fact that a kind of tacit understanding between the authorities restricts the shift into and between non-dollar assets, the main reason why these authorities hold foreign currency reserves is to enable them to intervene in the market and smooth exchange rate fluctuations in phases of downward pressure on their currencies. Because they intervene mainly on the dollar market, it is natural that they should hold their reserves almost exclusively in US dollars (except, of course, in the case of the US authorities). As Table 10 shows, the yen has only a minimal weight in their baskets and there is little likelihood of a significant change in this pattern provided that there is no major restructuring of the international monetary system. In the private sector, companies active in trade and holding working balances for commercial

Table 10

Share of individual reserve currencies in total official foreign exchange reserves by category of country.

Currencies	Industrial countries		Oil-exporting countries	Non-oil developing countries	All countries
	EMS	Other			
	in percentages of the first quarter of 1980				
Yen	0.2	4.5	4.9	3.9	3.1
DM	5.6	8.9	16.7	17.7	11.6
Sw.fr.	2.9	2.6	5.1	1.9	3.1
£	0.4	1.1	2.9	5.4	2.3
Fr.fr.	0.0	0.0	2.2	2.3	1.1
Fl.	0.5	0.1	1.0	1.4	0.7
US $	90.3	82.8	67.1	67.4	78.1

Source: IMF Survey, IMF, 26th January 1981.

settlements are in a similar position. The behaviour of holders of this type is mainly determined by institutional (exchange rate arrangements, etc.) and structural (pattern of trade and invoicing currency) conditions.

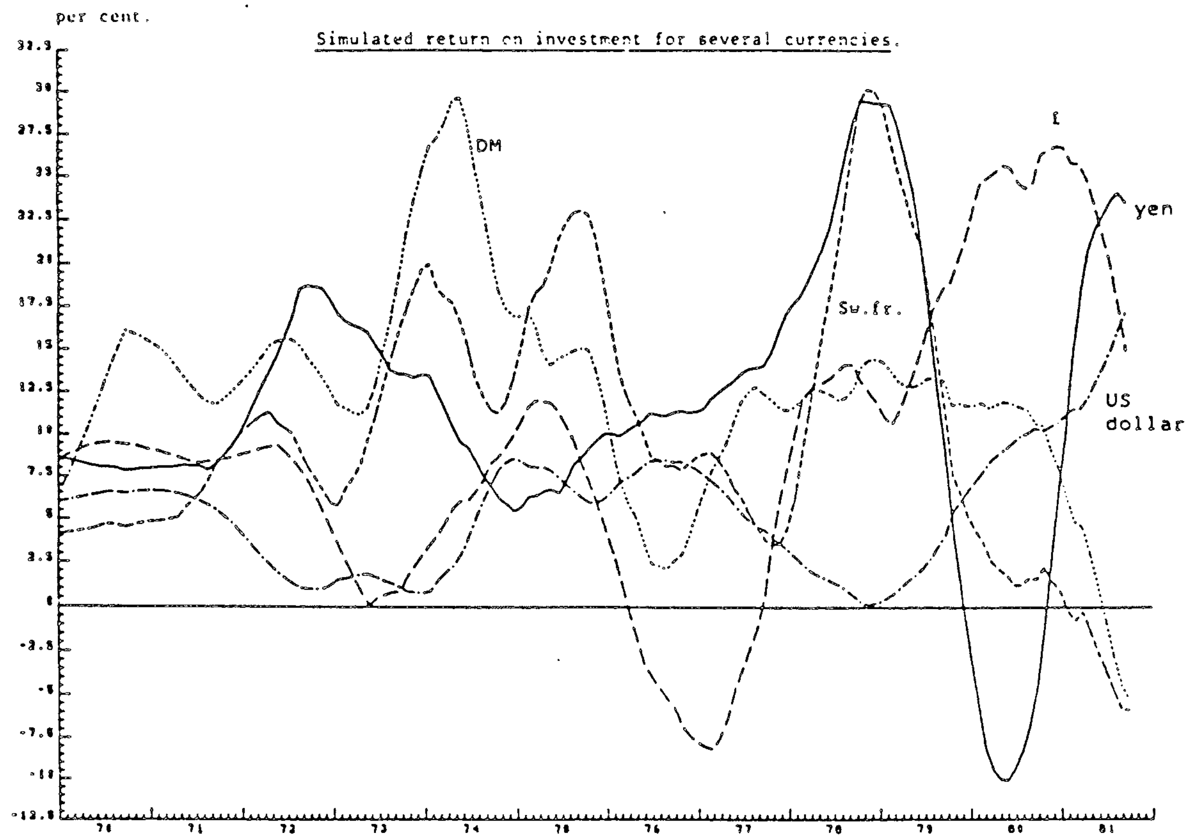
At the other end of the spectrum lies the pure portfolio investor who holds assets to secure future income. The authorities of the oil-exporting countries, and, in the private sector, a portfolio investor in a small economy heavily dependent on imported goods, approximate to this type. The central banks of non-oil developing countries and multinational companies' spare funds can be placed somewhere between these two extremes.

As far as the behaviour of the second type of reserve holder is concerned, a mean-variance portfolio approach can be applied, although this is quite difficult to do in strictly quantitative terms. In order to make a portfolio selection between assets denominated in different currencies, the first question concerns the "numéraire" - the currency or basket of currencies which serves as a standard for the assessment of risk. The most orthodox basket would be based on the pattern of consumption, i.e. import structure. If the investor also has foreign liabilities, the currency in which the liabilities are denominated will also have an important impact.

Graph 2 and Table 11 show the simulated return[8] on investment for yen, Deutsche Mark, US dollars, Swiss francs and pounds sterling, assessed using a currency basket based on relative shares in world exports in 1980. Of course, the result must be interpreted guardedly. Besides the question of the adequacy of the assumption made regarding the "basket", the chosen assets may not be strictly comparable. Moreover, non-residents' access to some of the assets may have been restricted from time to time by foreign exchange controls and there are significant differences in taxation and reserve requirements. Nevertheless, it gives a rough illustration of the potential strength of preference.

Taking the eleven years since 1970 as a whole, the average return on yen assets was the highest among the five currencies. The Deutsche Mark was next, but the difference was minimal and the risk measured by the standard deviation of the exchange rate profit/loss was somewhat smaller. The return on Swiss francs and pounds sterling was considerably lower, with a similar risk to that of the yen. The US dollar yielded the smallest return. If we divide the period into two sub-periods, 1970-75 and 1976-81, Graph 2

Simulated return on investment for several currencies.



Note: To smooth the movement, the graph shows the average of the last twelve months.

Table 11

Return on investment of several currencies in terms of a currency basket.

Currency/Year		Return: Mean	Return: Standard deviation	Exchange rate profit: Mean	Exchange rate profit: Standard deviation
		in percentages			
Japanese yen	1970-75	11.4	4.9	2.2	7.0
	76-81	13.5	14.1	5.6	12.8
	70-81	12.6	10.9	4.1	10.6
Deutsche Mark	1970-75	15.9	8.7	6.5	7.4
	76-81	7.8	7.9	1.7	9.2
	70-81	11.5	9.2	3.9	8.8
Swiss franc	1970-75	13.5	8.0	9.1	7.3
	76-81	7.8	12.3	5.2	12.8
	70-81	10.4	10.9	7.0	10.8
Pound sterling	1970-75	6.1	5.0	- 3.3	4.4
	76-81	11.2	13.2	- 1.1	11.1
	70-81	8.9	10.6	- 2.1	8.7
US dollar	1970-75	4.2	3.4	- 1.7	2.4
	76-81	8.2	6.7	- 0.2	4.0
	70-81	6.4	5.8	- 0.9	3.4

Note: Based on three-month rates. The currency basket consists of seven reserve currencies. The weights (in percentages) are based, except for the US dollar, on 1981 shares in world exports: Yen (7.1), DM (10.4), Sw.fr. (1.6), £ (6.3), Fl. (6.2), Fr.fr. (6.3); the rest is attributed to the US dollar.

in the first sub-period the return on the yen was lower than the return on the Deutsche Mark or Swiss franc, with the risk similar in all cases. In the second sub-period, yen assets achieved the best yield with a good lead over the other currencies, but the risk was also very high. In short, the yen has been, especially in the second half of the 1970s, a highly profitable, but for the "standard investor" a rather "risky", asset.[9]

Now let us turn to the factors and mechanisms that have enhanced the rôle of the yen as an international asset. Firstly, the increase in the relative and absolute importance of the OPEC countries' reserves. As mentioned earlier, they belong more or less to the second type of - "portfolio investment" - assets, and their growth results in a larger portion of international assets being subject to the portfolio selection principle. Obviously this factor applies not only to the greater use of yen but also to the use of other secondary reserve currencies. The second factor, which is perhaps of greater importance, is the high yields[10] on yen investments, particularly since the mid-1970s. The third factor is the change in the trade pattern. While the share of Japanese exports in world trade has been quite stable - around 7 per cent. over the last decade - the Japanese share of the oil-exporting countries' imports rose from 11 per cent. in 1971 to 15.4 per cent. in 1980. This means that although the simulated ex post variance in the return on investment and exchange rate profit has been high and has even risen in recent years, this factor probably had the effect of reducing the ex ante assessment of risk. The fourth factor is the growth in yen lending. For example, yen loans as a proportion of total lending by BIS reporting banks to non-banks and official monetary institutions increased from 1.2 per cent. at the end of 1977 to 3.3 per cent. at the end of 1980. This development probably spurred the use of yen both by increasing the transaction balance and reducing the ex ante risk for the portfolio investor. As seen in the earlier part of this paper, the growth of the use of the yen in trade is not vigorous but it may work in a similar way to the increase in yen loans.

4. Some preliminary conclusions

The relatively small importance of the yen in trade invoicing suggests that the "transaction balance" portion of yen holdings has been small. The fact that the growth of non-resident holdings of yen assets has been closely related to the development of the exchange rate, coupled with the low level of yen sight accounts with Japanese banks, provides additional support for this argument.

This has two implications. The first is that the advantage that the Japanese economy would enjoy from internationalisation is small, even compared with other secondary reserve currency countries, since the major advantage to the home country of an international currency is that it can fund a part of its imports with non-interest-bearing or low-interest-bearing liabilities. The second point is the impact on the exchange market. Since the preference of the portfolio investor is mainly influenced by the expected return, the greater use of the currency as a portfolio asset tends to make the exchange rate more vulnerable to external shocks, "band-wagon effects" and interest rate changes. On the other hand, direct disturbance of the domestic financial market, which would have conflicted with monetary policy, has not so far been serious. Firstly, total external yen holdings are not very large compared with the scale of the economy, for example measured by gross national product (Table 9). Secondly, a large part of yen assets was placed in the Euro-market and did not necessarily cause capital flows between Japan and the rest of the world. Thirdly, foreign exchange control was quite effective when it was necessary to shield the domestic market from the effects of a shift from other currencies. The introduction of the new foreign exchange law in December 1980 may make this more difficult in future but so far the yen has been relatively weak and domestic monetary policy has been in a relaxed phase, so the problem has not come to the fore.

Although the direct impact has been small, this is not to deny that the emergence of the yen as a worldwide portfolio asset complicates economic policy indirectly in the sense that the authorities are forced to pay much greater attention to the effects of policy measures on the exchange rate.

Forecasting is not the aim of this paper, but this study seems to suggest that the use of the yen in trade will grow only gradually. If, on the other hand, the yen continues to attract portfolio investors, the gap between benefit and detriment to the Japanese economy might widen further. However, there seems to be no really feasible way of avoiding this tendency. Even if the new foreign exchange law does not rule out direct controls in "critical situations", these measures cannot be used to stem the long-run trend. As for ways of minimising the negative impact on the exchange rate and monetary policy, little can be done to counter the movement of funds of private holders. All that remains seems to be to use the possibility of mitigating the impact through off-market sales of assets to official bodies and, more generally, close co-operation with actual and potential investors.

Footnotes

1. For example, a "cover-bill" system for yen-denominated export and import bills introduced in 1976 but hardly used.

2. Naturally, this argument applies only to exchange rate fluctuations occurring over several weeks or months, and not to daily fluctuations.

3. A list of the main measures since 1970 relating to non-resident investments in yen assets is given in Annex 3.

4. If not otherwise stated, figures quoted hereafter in this section will be based on constant end-1980 rates.

5. The quoted figures are perhaps underestimated since they encompass only identified inter-Euro-bank deposits.

6. Secondary securities market with repurchase arrangements; participants are both banks (although the amount of their funding through this market is subject to informal guidance) and non-banks, and it is probably the market in which interest rates move most freely.

7. See footnote 5.

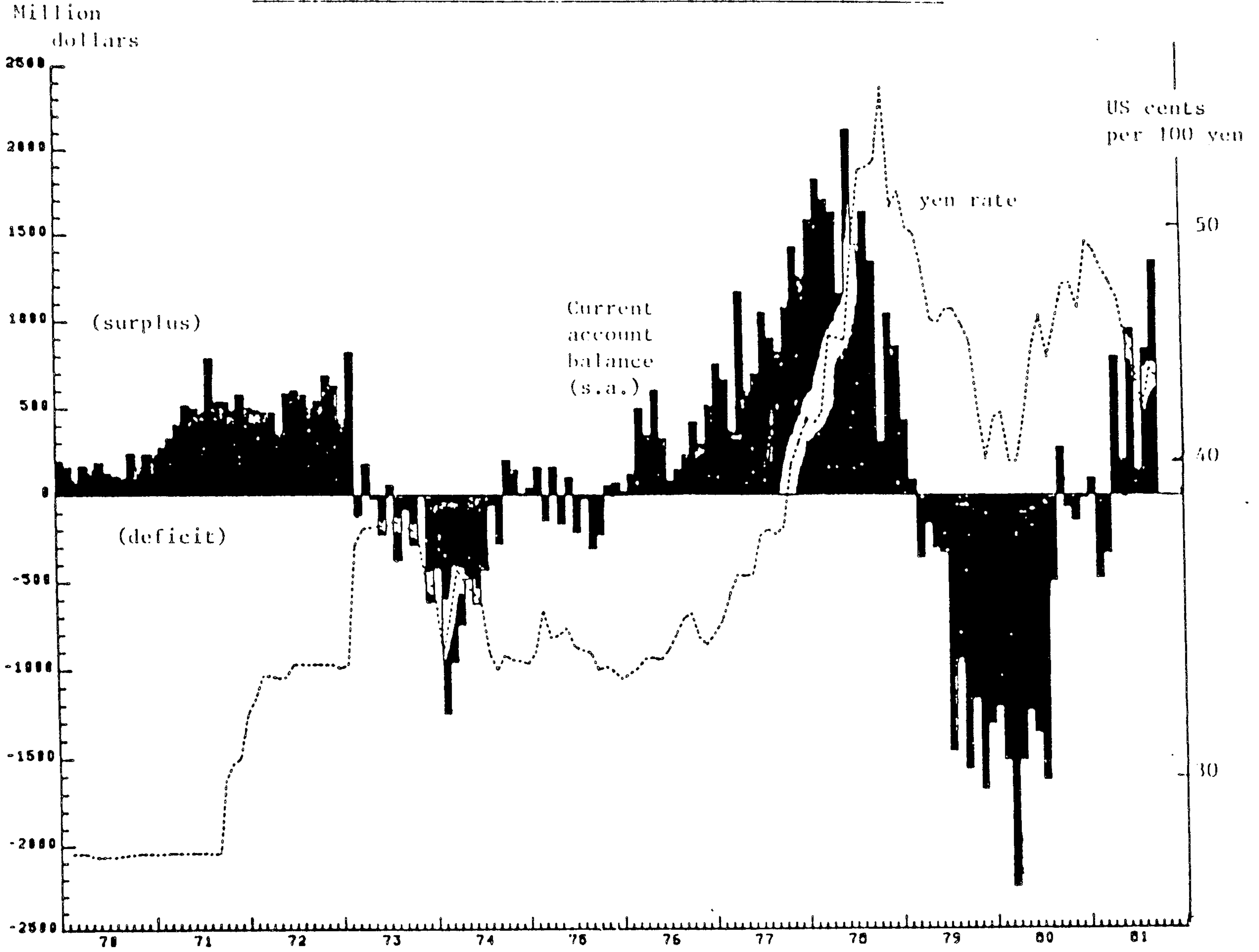
7. The simulation is based on the assumption that a unit of the numéraire currency is invested in a three-month instrument (in the Japanese case in the Gensaki market), re-invested after maturity and reconverted to the numéraire currency after one year.

9. Annex 3 shows the mean and standard deviation of the return evaluated in terms of an alternative "numéraire", the US dollar. The results are fairly similar to those in Table 10, except that the relative "riskiness" of yen investments was slightly less pronounced.

10. Of course, the return shown in Table 11 is the <u>ex post</u> return and may not reflect the <u>ex ante</u> assessment of the investors. In a very theoretical world of "rational expectations" where expectations of the future spot rate are stable and unbiased, there is little room for <u>ex ante</u> differences in return. But the results of several recent studies raise some doubt as to the adequacy of this hypothesis as far as the last few years are concerned.

Annex 1

Development of the yen rate and current account balance



Annex 2

Return on investment for several currencies in terms of US dollars.

Currency/Year		Return		Exchange rate profit	
		Mean	Standard deviation	Mean	Standard deviation
		in percentages			
Japanese yen	1970-75	13.4	7.0	4.2	8.9
	76-81	14.0	16.2	6.1	15.2
	70-81	13.8	12.8	5.2	12.7
Deutsche Mark	1970-75	18.1	11.2	8.5	10.0
	76-81	8.4	11.5	2.3	12.6
	70-81	12.8	12.3	5.1	11.9
Swiss franc	1970-75	15.6	9.8	11.1	9.2
	76-81	8.5	16.0	5.9	16.6
	70-81	11.7	14.0	8.3	13.9
Pound sterling	1970-75	8.0	5.7	- 1.5	5.6
	76-81	11.8	15.2	- .6	13.5
	70-81	10.1	12.0	- 1.0	10.6
US dollar	1970-75	6.0	1.5	.0	.0
	76-81	8.3	3.2	.0	.0
	70-81	7.2	2.8	.0	.0

Note: Based on three-month interest rates, uncovered. For the assumptions on which the simulation is based, see footnote 8.

Annex 3

Major changes in policy relating to holdings of yen by non-residents since 1971

1. Banking channel

1971

Aug. - A ban is placed on any increase in non-residents' free yen accounts over the level of 27.8.71.

Sept. - Restrictions on the conversion of foreign currencies into yen by Japanese foreign exchange banks are reinforced (free-yen accounts are treated as "foreign currencies").

1972

Jan. - The ban on any increase in free-yen accounts above the 27.8.71 level is removed.

May - Resident foreign banks are no longer permitted to convert into yen above a certain ceiling, which is set individually for each bank.

June - A 25 per cent. reserve requirement is introduced on the increase in free yen deposits.

July - The reserve requirement on free-yen deposits is raised to 50 per cent.

1973

Nov. - The acquisition by non-residents of free-yen account balances is facilitated by allowing interest on inter-governmental yen loans and deposits by non-resident importers to be credited to such accounts.

Dec. - The marginal reserve requirement on free yen accounts is reduced from 50 to 10 per cent.

- Non-residents' free-yen accounts are exempted from yen conversion restrictions, with the exception of inter-office accounts.

1974

Sept. - The marginal reserve requirement on free-yen accounts is removed. The restrictions on interest payments on these accounts are also abolished (they had previously been subject to the same restrictions as domestic accounts).

1975 ...

1976 ...

1977

May - The Bank of Japan announces a 0.25 per cent. reserve requirement on free-yen accounts and certain other foreign liabilities of foreign exchange banks.

June - Non-residents' deposit accounts are abolished and the balances transferred to free-yen accounts.

- The restriction on the conversion of foreign currencies into yen is replaced by a restriction on the spot foreign exchange positions of foreign exchange banks.

Nov. - The reserve requirement on free-yen deposits is raised to 50 per cent. on increases in these accounts above the October 1977 average.

1978

Mar. - The reserve requirement on increases in free-yen deposits is raised to 100 per cent. for any rise above the average level of February 1978.

1979

Jan. - The reserve requirement on increases in free-yen deposits is reduced from 100 to 50 per cent.

Feb. - The Bank of Japan abolishes the reserve requirement on increases in free-yen deposits. The basic reserve requirement on such deposits (0.25 per cent.) remains in effect.

Mar. - The restriction on the spot position of banks is relaxed.

May - Japanese banks and foreign banks operating in Japan are authorised to issue yen-denominated CDs. The ceiling is set initially at 10 per cent. of shareholders' equity or net assets, but is gradually raised.

1980

Mar. - Relaxation of restrictions on inter-office yen accounts.
- Yen accounts held by foreign public institutions are exempted from interest rate controls and guidelines.

Dec. - The new Foreign Exchange and Foreign Trade Control Law comes into force.

2. Securities

1971

Mar. - Purchases by non-residents of short-term government securities are prohibited.

May - The acquisition by non-residents of Japanese unlisted bonds and debentures is made subject to the approval of the Ministry of Finance, which is usually not granted.

1972

Oct. - The restriction introduced in May 1971 on purchases by non-residents of unlisted bonds is abolished except in the case of bonds with residual maturities of less than one year.

- The acquisition of Japanese bonds and shares by non-residents is restricted by regulations limiting the amount of purchases securities dealers may transact on non-residents' accounts. All purchases have to be made through authorised securities dealers or foreign exchange banks.

1973

Dec. - The restrictions introduced in October 1972 on non-residents' purchases of bonds are abolished except in the case of recently listed bonds, short-term government bonds and unlisted bonds with a residual maturity of less than one year.

1974

Aug. - The restrictions on portfolio investment by non-residents are relaxed; henceforth non-residents are allowed to purchase unrestricted amounts of short-term government securities, unlisted bonds and debentures and newly listed bonds and debentures.

1975 ...

1976 ...

1977

Nov. - The public issue of short-term government securities is suspended to prevent speculative capital inflows.

1978

Mar. - The purchase by non-residents of Japanese securities with a maturity of less than five years and one month is prohibited.

1979

Jan. - The MOF permits non-residents to purchase yen bonds with residual maturities of at least one year and one month.

Feb. - The ban on non-residents' purchases of yen bonds with residual maturities of less than one year and one month is lifted.

May - Non-residents are allowed access to the Gensaki market.