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IS THE JAPAN PROBLEM OVER?

Paul Krugman

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ABSTRACT

This paper argues that Japan's export growth is likely to slow sharply over the next few years, perhaps to zero. For the past dozen years Japan's export volume has gown much more rapidly than her domestic production. This divergence was made necessary primarily by rising oil prices, and secondarily by a shift into current account surplus. Now both these factors are running in reverse. If Japan's export growth does slow sharply, the mechanism will be a very strong yen -- probably above 140. The paper argues that it is Japan's export growth rather than static trade structure that is the main cause of trade tension, so these developments should lead to a considerable reduction in trade friction.

Mr. Paul Krugman
Sloan School of Management
MIT
E52-383A
Cambridge, MA 02139

For most of the US public, trade relations with Japan are the dominant issue of international economic policy. International debt is the problem of the bankers, and may even serve them right; agricultural trade and the EEC is a farmers' problem; but the Japanese issue touches not only our sense of national pride but our jobs. The future growth of world trade depends more on how the US comes to perceive its trade with Japan than on any other issue.

What I will argue in this paper is that there is a very good chance that we are about to see a dramatic change in the fundamental background to US-Japanese trade relations. I will argue that the main source of friction does not lie in such deep issues as the differences between US and Japanese institutions and social structures. It lies instead in the huge manufacturing trade surplus and rapid export growth that Japan experienced from 1973 to the present. These proximate sources of trade friction in turn had their origin primarily in the more fundamental factors of oil price increases and a shift of Japan into current account surplus, with oil, not the current account shift, the more important of the two.

In little more than a year, both of these factors have experienced dramatic reversals. It has been widely recognized that the fall in the dollar will lead to an improved US trade picture. It is also the case that falling oil prices tend, by strengthening the yen, to reduce Japan's surplus in manufactures -- a point well understood by economists, if less appreciated among businessmen and politicians. What has been lacking so

far, however, is a quantitative assessment of how much difference the recent changes can make. What we will see is that a simple numerical analysis suggests that recent changes will in fact have massive effects on the situation. Quite suddenly it has become plausible to suppose that over the next five years we will see the growth of Japanese exports slow to less than one percent per year. This suggests that if the current protectionist pressures in the US do not lead to a trade war with Japan, an era of relative trade peace may lie just ahead.

THE SOURCES OF GROWING TRADE FRICTION, 1973-84

In the early 1970s a reasonable forecast for the future of US-Japan trade relations might have been quite optimistic. The realignment of the dollar-yen rate from 1970-3 was visibly reducing the large Japanese trade surpluses that had emerged at the end of the Bretton Woods system. As far as most observers could judge, Japan's economy was experiencing considerable liberalization, as the government's control over both foreign transactions and domestic credit markets was loosened. There was every reason to expect Japan's role in the international economic system to become normalized, similar to that of other densely populated industrial countries such as Germany.

Instead, trade relations between the US and Japan have grown increasingly strained. Many in the US argue that this is because the apparent liberalization of Japan's economy was never real; that Japanese

government and business practices continued to differ from those of the US in a way that worked to the US disadvantage. Defenders of Japan argue instead that these accusations are being used to rationalize anti-Japanese sentiment that has little to do with the alleged unfair practices. The true sources of trade friction, it may be argued, lie instead in two facts that have little to do with Japan's trade policy. The first fact is that during the 1970s and the first half of the 1980s the world economic environment changed in such a way that Japan developed a "structural" surplus in its trade in manufactures and its bilateral trade with the US. The second reason, closely related to the first, is that structural change led to a rapid pace of Japanese export growth, arousing opposition from foreign import-competing sectors. One might also suppose that the growth and success of Japan's economy was in itself a source of tension: as we will see, a case can be made that this was of surprisingly little importance as compared with the rise in oil prices and the shift of Japan into current account surplus.

The Structure of Japanese Trade

The key facts about Japanese trade structure, and the reasons why US firms inevitably feel that they lose far more often than they win in competition with Japanese rivals, can be seen clearly by looking at a simple graph. Figure 1 shows comparative trade structure by type of commodity for the US, Japan, and (as a useful control) West Germany.

Figure 1 illustrates three basic points. First, Japan runs a huge surplus in manufactured goods trade. The feeling of foreign firms that they are not on a level playing field is simply the obverse of this dominant fact. Second, most of this trade surplus in manufactures is necessary for Japan to pay for its huge deficit in primary product trade. Third, this trade pattern is not unique to Japan: Germany's trade structure is, at this level of aggregation, quite similar, although the absolute numbers are smaller.

The comparison with Germany is an important one. Economists schooled in general equilibrium theory find it natural to assert that there is an automatic mechanism whereby a shift toward trade deficit in one area will lead to offsetting shifts toward surplus elsewhere. This not only rationalizes most of Japan's manufactures trade surplus, it leads economists to deny any link between overall trade balances and protection. Politicians and businessmen have never been convinced by this argument, and tend to view the application of such arguments in this case as an apologetic for Japan. The fact that Germany, although rarely accused of unfair trade practices, shows a similar pattern of trade should help strengthen the economists' case. As the figure shows, in their tendency to run manufacturing surpluses to pay for primary deficits Germany and Japan are virtually identical twins.

In a purely accounting sense, almost three-quarters of Japan's manufactures surplus in 1984 went to pay for a deficit in primary products. The remaining surplus was virtually the same in Germany and Japan, suggesting that the cause of the trade surplus was something

common to both rather than special to Japan. The natural explanation, of course, is that it was the US, with its budget deficit and resulting overvalued dollar, that was responsible. That is, the German and Japanese surpluses should both be viewed as caused by the US deficit.

This view should in fact be qualified somewhat. Germany's current account surplus as a share of GNP in 1984 was only 1.0 percent, compared with Japan's 2.8 percent. The difference was Germany's large deficit on invisibles, reflecting in particular remittances by guest workers. If we take Germany as a reference point, then we may say that there is in effect a component to the Japanese manufacturing surplus that reflects Japan's unusually large export of capital. This "structural surplus" component presumably reflects Japan's high savings rate, which makes Japan a natural exporter of capital. The point remains, however, that this "structural surplus" component is a small fraction of the total Japanese manufacturing surplus.

We may thus imagine a hypothetical accounting for the sources of Japan's trade surplus in manufactured goods, dividing it into three parts: a "primary products deficit" component, reflecting Japan's need to pay for imported raw materials; a "structural surplus" component, reflecting Japan's position as a natural capital exporter; and an "overvalued dollar" component, reflecting the temporary strength of the US dollar in 1984. The first of these components is defined simply as Japan's deficit in primary products. The division between the other two is more difficult to ascertain. Later in this paper it will be assumed as a base case that the "overvalued dollar" component of Japan's current

account was $15 billion in 1984, or 1.25 percent of GNP. This was derived as follows. First, all of the $100 billion US current account deficit in 1984 is assumed to represent a temporary dollar overvaluation. (It could be argued that some of this US deficit is structural; however, it should be remembered that the rise in the US deficit is of very recent vintage, and was not tied to any substantial shift in either US investment or private saving rates). Second, it is assumed that if that deficit were eliminated, $15 billion of the shift would come from a reduction in Japan's current account surplus, reflecting Japan's roughly 15 percent share of the GNP of market economies outside the US. These assumptions are rough-and-ready, but the essential point seems clear: the Japanese structural surplus on current account is not the main source of the surplus in manufactures.

The relationship between resources and trade also leaves its mark on Japan's pattern of regional trade. In 1984 more than half of Japan's trade surplus with non-oil exporting countries was the counterpart of a deficit with oil-exporting countries. Thus Japan's heavy dependence on imported oil can be viewed as the prime cause of its large surplus in trade with industrial countries, including the US.

Given these figures, it is not surprising that Japanese trade gives rise to friction. But there are still some puzzles. In particular, if Japan and Germany look so similar, why does Japanese trade create so much more friction? Let us consider several possible explanations.

1. Current accounts: Germany's current account surplus is indeed much smaller than Japan's. However, the difference is essentially workers' remittances. It is hard to see why the fact that part of Germany's trade surplus goes to families in Turkey or Yugoslavia should make foreign competitors less upset about losing markets.

2. Scale: Germany is smaller than Japan, and its trade surplus, though slightly larger relative to GNP, is only about half as large in absolute terms. But Japan certainly experiences much more than twice as much grief in international trade negotiations. It is hard to believe that there is a critical mass of manufactures trade surplus somewhere between 50 and 115 billion dollars.

3. Imports: Japan achieves its surplus with smaller imports and exports of manufactures than Germany. Figure 2 illustrates the point. The question is whether Japan's small manufactures imports, aside from providing a debating point for anti-Japanese rhetoric, actually contribute to trade tension. Equivalently, if Japan's trade pattern looked like Germany's, would tension be reduced? It is hard to believe that it would. Indeed, it is hard to believe that it would even be possible politically to accommodate Japan's exports if her economy were as open as Germany's.

4. Cultural gap/racism: Germans look like us, talk a language not too different from ours, and share a common cultural history; Japanese do not. Thus when experts tell us that Germany is not cheating, we believe them, while we are always ready to believe that Japanese society works in mysterious and inscrutable ways. Unfortunately, there is almost certainly

a component of this kind of xenophobia in the US hostility to Japan. It is possible that this will turn out to be the dominant sentiment, and that reasoned argument will eventually fail. One can only hope that this is not the case.

So far our proposed explanations of the special friction with Japan seem either of doubtful force or too depressing to accept. There is, however, a further possible explanation that will turn out to yield substantial grounds for hope. This is the view that the cause of Japanese-US trade friction was not so much the current state of that trade as the dynamics -- that the rapid growth of Japanese exports, rather than their level, was the problem.

Japanese Export Growth

Figure 3 illustrates a key fact that may help explain the hostility to Japan even more than the features of trade structure we have considered so far. This is the high rate of growth of Japan's exports, which is unique among industrial countries. From 1973 to 1984 Japan's export volume increased by 154 percent -- two and one half times as much as Germany.

There are good reasons for expecting rapid growth of exports to be at least as serious a cause of trade friction as the current structure of trade. Both a consideration of the rational interest of potentially protectionist groups and what we know about politics suggest that a

rising share of imports will create more opposition than a stable share, however high.

Consider first the rational self-interest of workers and firms. It is surely a reasonable approximation to regard factors of production as sector-specific in the short run, but mobile between sectors in the long run. What this means is that any sudden shift in the trade pattern will impose capital losses on those factors stuck in the import-competing industries. If the changed trade pattern is retained long enough, however, the factors of production will exit the industry and the political pressure for protection will abate. There will still be potential beneficiaries from protection that would redistribute income between broad factors of production along Stolper-Samuelson lines, but the pressures arising from these more diffuse interest groups should be much less severe.

The argument that new import competition creates more opposition than old is just the other side of the frequent observation that prolonged protection creates a vested interest in its own continuance. It is a familiar proposition that an import quota imposed for balance of payments reasons can give birth to a domestic industry that can prevent the quota's removal; correspondingly, a shift in comparative advantage that is allowed to happen long enough will lead to an exit of the firms and workers that oppose it.

To the rational self-interest argument we may add an empirical observation about the relationship between economics and politics. This is that in electoral politics, at least, the success of incumbents

depends more on whether things have been getting better recently than on how good they are in absolute terms. Econometric estimates of voting behavior suggest that it is the recent change in the unemployment rate, not its level, that determines electoral outcomes. By analogy we can suggest that trade tension depends more on whether foreign competition is perceived as getting more severe than on comparison with some unchanging norm of fair trade.

Suppose we accept that the rate of growth of Japanese exports was at least as important as the current situation at any point in time as a factor in creating trade tension. Then the next question is the source of that rapid export growth. What we want to know is whether the export growth was an inevitable accompaniment to the rapid growth of Japan's economy, or whether it had more special and reversible causes.

To understand the sources of rapid export growth in Japan, it is useful to develop an accounting framework that relates four variables: export growth, import growth, the terms of trade, and the trade balance.

First, let us begin with an identity:

$$(1)\quad B = P_x Q_x - P_M Q_M$$

where B = trade balance

P_x = export price

Q_x = export volume

P_M = import price

Q_M = import volume

If we totally differentiate (1), we get the expression

(2) $dB = Q_x dP_x - Q_M dP_M + P_x dQ_x - P_M dQ_M$

Equation (2) can be simplified if we make the assumption that initially trade is balanced: $P_x Q_x = P_M Q_M$ (since this was not strictly true for Japan over the period, this will be a source of some slippage in our accounting). The rewritten formula is

(3) $q_x - q_M = -(p_x - p_M) + b$

where lower-case letters signify rates of growth, and

$b = dB/P_x Q_x$,

i.e., the change in the trade balance as a fraction of the initial value of exports.

What equation (3) tells us is that the discrepancy between export and import growth rates can be divided in an accounting sense between the rise in import prices relative to export -- the terms of trade loss -- and the shift of the trade balance into surplus.

Now let us consider the case of Japan. Over the entire period 1973-84 the average annual changes in the terms in equation (3) are shown in Table 1. We note immediately that Japanese export growth was much more rapid than the growth of the Japanese economy as a whole -- 8.5 percent versus 3.7 percent for gross domestic product. At the same time, import growth, at 1.6 percent annually, was much less than economic growth. This immediately tells us that Japan's rapid export growth was not fundamentally connected to her general economic growth: if exports and imports had both grown at the same rate as GDP, Japan's export growth would have been less than half of what it was. We can also see that the huge discrepancy between export and import growth rates is primarily accounted for by the worsening of Japan's terms of trade, and only secondarily by the move toward trade surplus.

So far no mechanism has been introduced to make this accounting identity into a causal story. If we put the observations here together with the information on trade structure above, however, the story seems very clear. During the post-1973 period, Japan suffered a sharp terms of trade worsening due to increases in oil prices. At the same time, there was some movement of Japan into structural current account surplus, as investment demand fell off and savings remained high. All this was reinforced by the overvalued dollar, pushing Japan further into trade surplus. The cause of trade friction was not simply the fact of Japan's extreme trade structure, with its huge surpluses in manufactured goods. It was the fact that this trade structure was still emerging, through a surge in Japanese exports, that made for rising tension.

But if this emphasis on the rate of change is right, it has very upbeat implications. It implies that much of the trade friction of the past decade has been the result, not of enduring features of US-Japanese trade, but of the process of adjustment to a changed world economic environment. Even if that environment were to remain stable, we could expect some reduction of tension as the adjustment was completed. In fact, the news is better still: since early 1985 we have seen a substantial reversal of both the rise in oil prices and the overvaluation of the dollar. Is the stage now set for a real easing of tensions?

PROSPECTS FOR US-JAPANESE TRADE FRICTION

In the last few months both the value of the dollar and the price of oil have fallen sharply. The dollar-yen rate has fallen to record lows; the real price of oil, incredibly, is at least temporarily down to 1973 levels. It is still too soon to know where these prices will eventually settle. If any large part of the change proves durable, however, we are now getting exactly the reverse of the shocks that accounted for rising trade friction in the 70s and 80s.

There is no uncertainty about the qualitative direction of effect of a declining dollar and a declining oil price. The decline of the dollar may be viewed as a new unwillingness by international investors to provide the US with a large surplus on capital account. As the US capital account surplus declines, so must its current account deficit. At least

part of that decline will show up as reduced Japanese trade surpluses and export volume. At the same time, the decline in the price of oil will produce a decline in Japan's primary commodity deficit, which will eventually be offset by a corresponding decline in her manufacturing surplus.

What we need to know, however, is how important this relief will be in quantitative terms. Are the recent declines in oil and the dollar enough to make a crucial difference? To answer this we need at least a rough model. What I will do is build on the accounting framework developed above to make a first-pass answer to the question of magnitudes. The results suggest that the reduction in trade friction should be major indeed.

A Simple Model

To make as compact as possible a model of the future of Japanese trade, I will make two simplifying assumptions. First is that Japan's terms of trade will be taken as exogenous -- that is, any effects arising from exchange rate changes will be ruled out. Since the yen may be expected to be stronger in the future than it was in the past, this assumption actually weakens my case.

Second, I will treat the Japanese balance of trade as exogenous, simply assuming plausible values rather than explicitly deriving it jointly with the exchange rate. In fact, I will substitute out the exchange rate and deal directly with reduced form expressions for trade

flows as functions of the terms of trade and the trade balance. The main justification for this procedure is that it makes life easy. It may also be argued, however, that we know more about the determinants of long-run current accounts than we do about the process of exchange rate adjustment that gets us there.

Let us begin, then, with an equation for the growth of exports. I will assume that the growth rate depends on the rate of change of some measure of the real exchange rate and on a trend term reflecting the growth of the economy as a whole:

$$(4)\quad q_x = e_x r + y$$

where e_x is the elasticity of exports with respect to the exchange rate, r is the rate of real depreciation, and y is the trend component.

We have a similar equation on the import side, where I assume that the trend component is the same: i.e., at a constant real exchange rate imports and exports would grow at the same rate.

$$(5)\quad q_m = -e_m r + y$$

We can now use (3), (4), and (5) to solve for the growth rates of both imports and exports as functions of terms of trade and the trade balance. We first note that

$$q_x - q_M = (e_x + e_M)r$$

But from (3) this implies that

$$r = [p_M - p_x + b]/(e_x + e_M)$$

This gives us our equations for volume growth:

$$(6)\quad q_x = y + s_x[p_M - p_x + b]$$

$$(7)\quad q_M = y + s_M[p_M - p_x + b]$$

where $s_x = e_x/(e_x + e_M)$ and $s_M = e_M/(e_x + e_M)$.

What equations (6) and (7) say, in words, is that there is assumed to be an underlying rate of trade growth common to exports and imports. Shifts in either the terms of trade or the trade balance relative to exports will cause a divergence between export and import growth rates; this divergence will always be divided between higher export growth and lower import growth in the same proportions.

Our next step is to quantify these volume equations. We begin by choosing a plausible value for y. Over the period from 1973-1984 the Japanese economy grew in real terms at an annual rate of 3.7 percent. It seems reasonable to suppose that other things equal Japan's trade would have grown a little faster than GNP. I will assume a growth rate y of 4.0 percent annually.

This now allows us to go directly to s_x and s_M. From 1973 to 1984, export volume grew at 8.5 percent per year, an excess of 4.5 percentage points over our assumed y. Import volume grew at 1.6 percent, 2.4 percentage points less than y. The divergence in export and import growth was 6.8 percent. So in the past, we have $s_x = 4.5/6.8 = 0.65$, and similarly $s_M = 2.4/6.8 = 0.35$. Given any shock to Japan's external situation, whether from the terms of trade or the capital account, we can expect 65 percent to be reflected in export volume and 35 percent in import volume.

What we have now done is to create a small envelope whose back is well-suited to quick calculations. We now ask what this model tells us about the implications of recent international events for Japan's trade.

Recent Shocks and Japan's Export Growth

In assessing the prospects for Japan's trade, we need estimates of how much correction is currently taking place. Two questions arise: how much will the decline in the overvalued dollar reduce Japan's current account surplus, and how much will oil prices fall?

Earlier I suggested as a plausible guess that an elimination of the US current deficit would be associated with a decline in Japan's surplus of $15 billion from its 1984 level, or 1.25 percent of GNP. Since Japan's current surplus in 1984 was 2.8 percent, this implies a remaining structural surplus of 1.55 percent of GNP -- not a small number. I will make a 1.25 percent decline in Japan's current surplus the central case.

For comparison, however, the case of a 0.5 percent decline and a 2 percent decline will also be considered.

Oil prices are still in considerable flux. At the time of writing they were dropping into single-digit numbers. There seems to be no alternative except to consider a wide range of possibilities. Using 1984 as a baseline, I will consider the cases of 20, 40, and 60 percent decline, with 40 percent the central case.

To examine the consequences of these alternative scenarios, we first convert these assumptions into trade balance changes as a fraction of exports. In 1984 the average of Japan's exports and imports was $146 billion, so a trade balance reduction of $15 billion would have corresponded to 10.3 percent. Also, in 1984 fuels accounted for 45 percent of Japan's imports, so a 40 percent decline in energy prices would correspond to a terms of trade improvement of 18 percent. Thus in the central case the shock term $[p_M - p_X + b]$ in the export growth equation is set equal to -28.3. The same calculation is made for each combination of oil price fall and current account adjustment.

Now the adjustment will not come all at once, and in any case we are not interested only in the very near term. Furthermore, the framework is lacking in realistic dynamics. We can, however, use the approach to ask what the <u>average</u> rate of export growth over some specified future period is. I arbitrarily take a five-year time horizon, treating the shock as if it were spread evenly over that period.

Tables 2 and 3 show the results of the assumed shocks for Japanese export and import growth over the next five years. Since most of the response is supposed to come on the export side, it is the export table that is more striking. If Japan's current account surplus falls to 1.55 percent of GNP -- well above its average during the 1970s -- and oil prices remain 40 percent below their 1984 level, we can expect to see virtually zero growth in Japanese export volume over the next five years.

Clearly such a cessation of Japanese export growth would bring about a dramatic reduction of trade frictions. In fact, it will probably seem to most readers to be too good to be true. It is important to recognize, therefore, that there is nothing outlandish about this calculation. We have simply applied to the future of Japan's trade the logic that many observers have applied to its past. Oil price increases and a move toward current account surplus led to a pace of Japanese export expansion during 1973-84 greatly in excess of GNP growth. Even a stabilization of oil prices and the current account would have implied a considerable subsequent slowdown. The fact that oil prices have once again fallen, and the likelihood of at least some reduction in Japan's surplus, mean that for the medium term future Japan's exports must grow considerably more slowly than her GNP.

HOW HIGH THE YEN?

The mechanism of adjustment implicit in our reduced-form equations (6) and (7) involves exchange rate appreciation. I have tried, however, to avoid making the predictions about trade volumes contingent on an exchange rate forecast. Instead the problem has been stated in terms of the link between fundamentals, the price of oil and the structural current surplus, and the trade outcome. The reason for stating the problem this way is to place the emphasis on the trade adjustment that must eventually happen, rather than on the unpredictable details of the exchange rate path that gets us there.

Nonetheless, it is clear that the trade adjustment described here implies a very strong yen compared with that of 1984. It is an irresistible temptation to speculate about the level of the yen necessary to effect the shift in trade structure implied by Tables 2 and 3.

The nominal value of the yen has of course been touching record levels in recent weeks. This apparent strength needs, however, to be discounted for at least three, and possibly four reasons. First, there is the obvious point of differential inflation rates, with Japan having substantially lower inflation since 1980 than the US. Second, there is the Kravis/Balassa effect: rapid Japanese productivity growth is disproportionately concentrated in tradeables, imparting a substantial bias to real exchange rate measures based on aggregate prices. Third, there is the shift in the real exchange rate implied by the fall in oil prices, perhaps offset by a shift of Japan into structural current account surplus. Finally, and most speculatively, there is the question of "hysteresis" in the trade pattern, in which reversing the dollar's rise need not reverse all of its effects.

Inflation and Productivity

The inflation and productivity issues can best be treated together. Suppose that, in standard fashion, we try to guess at the equilibrium value of a currency by calculating a purchasing power par on some historical baseline. Our usual problem is finding a baseline; in the Japanese case, this problem is however dwarfed by the problem of divergence in price indices. Richard Marston (1986) has recently emphasized the point that rapid Japanese productivity growth is concentrated primarily in its manufacturing sector. This unbalanced productivity growth means that a Japanese/US purchasing power parity calculated for prices of manufactured goods falls steadily relative to one calculated using more aggregate indexes, such as CPIs. Figure 4 shows the extent of this divergence. Using an arbitrary 1973 base, it compares the ratio of the Japanese CPI to its US counterpart, on one side, to the ratio of the Japanese manufacturing value-added deflator to its US counterpart, on the other. Incredibly, the divergence between the manufacturing price relative and the CPI price relative grew at an average annual rate of 4.4 percent over the 1973-1983 period.

To make a guess at the equilibrium yen, we need first to decide which of these price indexes to use. It seems clear that manufactures is the right choice, since what we want is the "battlefield" sector in which the US and Japan compete. Also, we need to choose a baseline. Somewhat arbitrarily, I will take the geometric average manufacturing real

exchange rate over the period 1973-79 as the base. Finally, to bring the estimate up to date I assume that the manufacturing PPP has continued to fall relative to the ratio of CPIs at the same rate as during the 1973-83 period, i.e., 4.4 percent per year, and extrapolate using actual consumer price inflation. The result is shown in Figure 5: a seemingly innocuous procedure leads us to a purchasing power parity yen of less than 140.

Oil prices and the current account

Ideally, we would like to correct the PPP estimate by an adjustment for the two offsetting factors of a rise in Japan's structural current account surplus and the decline in oil prices. During the 1970s Japan ran only small surpluses in her current account; with the liberalization of capital markets it now seems likely that Japan will run persistent current account surpluses. This factor will tend to weaken the yen. On the other hand, the decline in oil prices reduces the manufacturing surplus associated with any given current account, and thus implies a stronger yen. It is useful to think of these effects as percentages of trade: each ten percent fall in the price of oil reduces the needed non-oil surplus by 4.5 percent of the average of imports and exports, while each percentage point of GNP added to the current account surplus adds 8.4 percent. If our baseline case of a 40 percent fall in oil prices and a 1.55 percent structural surplus were right, the net effect would be to strengthen the equilibrium yen.

Hysteresis

There is a widespread belief among businessmen, shared by some economists, that the markets lost by the US from a sustained strong dollar cannot be recaptured simply by restoring the dollar to its former level. A model in which temporary overvaluation can cause permanent loss of market share may be referred to as one characterized by "hysteresis". A totally hysterical view of the trade balance would say that the exchange rate determines not the level of that balance but instead its rate of change. Hysteresis in the trade pattern can be justified theoretically by invoking the role of economies of scale, especially dynamic economies such as the learning curve.

There is no hard evidence at this point on the importance of hysteresis in practice. My own view is that there is substantial circumstantial evidence for hysteresis in the observed fact that countries, such as Japan, that have had to expand their exports rapidly over time, have not had to have persistently declining relative export prices. Estimated trade flow equations reflect this either by finding that fast growing countries, by coincidence, have low income elasticities of import demand and face high elasticities of export demand, or by including domestic capacity in the export equation. A possible alternative explanation is that fast-growing countries are able to buy steadily rising market shares simply by having a low, rather than a declining, relative price.

If there is in fact substantial hysteresis in international trade, the implication is not that the US can never win its markets back. Instead, it is that for the US to win back its markets the dollar must go through a period of undervaluation comparable to its previous overvaluation. While I am not in a position to quantify this effect, it seems to point to an even higher yen than the previous numbers would suggest.

Financial markets and short-run exchange rate determination

This paper has made a point of staying clear of the attempt to model the short run determination of the exchange rate in financial markets. It could, for instance, be the case that even though the yen must eventually rise above 140 it is temporarily being kept low by the differential in real interest rates between the US and Japan. Long-term government bonds are continuing to pay about 3.3 percentage points more in the US than in Japan, a difference that exceeds conventional measures of the expected inflation differential.

We have just seen, however, that the biased nature of productivity growth in Japan implies that there should be a secular appreciation of the real exchange rate of the yen against the dollar, at least when that rate is measured using aggregate price indexes. For relative purchasing power parity in manufactures to have been maintained in the 1973-83 period the real yen as calculated using CPIs would have had to appreciate at 4.4 percent annually. This suggests that the apparently higher real

interest rate in the US results from the choice of an inappropriate measure of inflation. If we use manufacturing value added deflators, we would almost surely find that the real interest rate is higher in Japan. So there is no good reason for the real yen not to rise to the levels that Japanese trade adjustment must eventually require. Apparently financial markets either do not agree or do not understand this.

Our discussion of the value of the yen rests on shakier ground than the earlier discussion of Japanese trade adjustment. Certainly after the last five years nobody can have much confidence in any exchange rate forecast. What the numbers appear to say, however, is that the adjustment of Japan's trade to a reduced current account surplus and lower oil prices should be accompanied by an extremely strong yen. Somewhat startlingly, I have no difficulty in convincing myself that a yen above 140 is entirely reasonable.

SUMMARY AND CONCLUSIONS

This paper has offered something that is unusual in discussions of US-Japanese trade relations: an optimistic outlook. The calculations on which this optimism is based will probably seem startling. Let us then finish the discussion by reviewing the argument, to see why the numbers suggested are not at all outlandish.

The key political assumption here is that US-Japanese trade tension in fact owes little to Japanese trade and business practices. The source of trade friction lies instead in the structure of Japanese trade, in the huge Japanese surplus in manufactures and especially in the rapid pace of growth of Japan's exports. The surplus in manufactures is primarily the counterpart of a huge deficit in raw materials, and part of the rest can be attributed to the overvalued dollar. The rapid growth in Japan's exports was not an inevitable counterpart of her much slower economic growth. Instead, it was driven mostly by the deterioration of Japan's terms of trade as oil prices rose, and partly by a shift of Japan into current account surplus -- of which, again, part can be attributed to the overvalued dollar.

Some relief from the frictions caused by rapidly growing Japanese exports would have come even if oil prices and the US current account deficit had merely stabilized: Japan's export growth would have dropped down to something like her GNP growth once the adjustment was over. However, we have suddenly been given a much stronger dose of medicine, with oil prices plunging and the dollar dropping to levels that should reduce the current account deficit sharply. If we accept the story about what happened in the 1973-84 period, we must also accept that the story will now run in reverse: for some time to come, Japan's exports will grow much more slowly than her GNP. The precise numbers given in this paper are only speculative and illustrative, but they convey a message that is not too sensitive to the details.

The inevitable counterpart of this message is that we are entering an era of an extremely strong yen. The guess at the equilibrium yen is even more speculative than the analysis of export growth, but again the point seems clear: the sharp appreciation of the yen since last year has not overshot, and there is probably still a considerable way to go.

We should conclude by noting that this discussion has in a political sense concentrated almost entirely on the political pressures on Japan's trading partners, rather than on politics in Japan itself. While the developments predicted here will reduce trade pressures in the US and elsewhere, they will of course create major tension in Japan. There will clearly be strong internal pressures on Japan's government to block the trade adjustment predicted here. The essential point that Japan should realize is that a sharp reduction in export growth is in the end inevitable, whatever the country's trade and exchange rate policy.

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FIGURE 1

TRADE BALANCE BY TYPE OF GOOD, % OF GNP

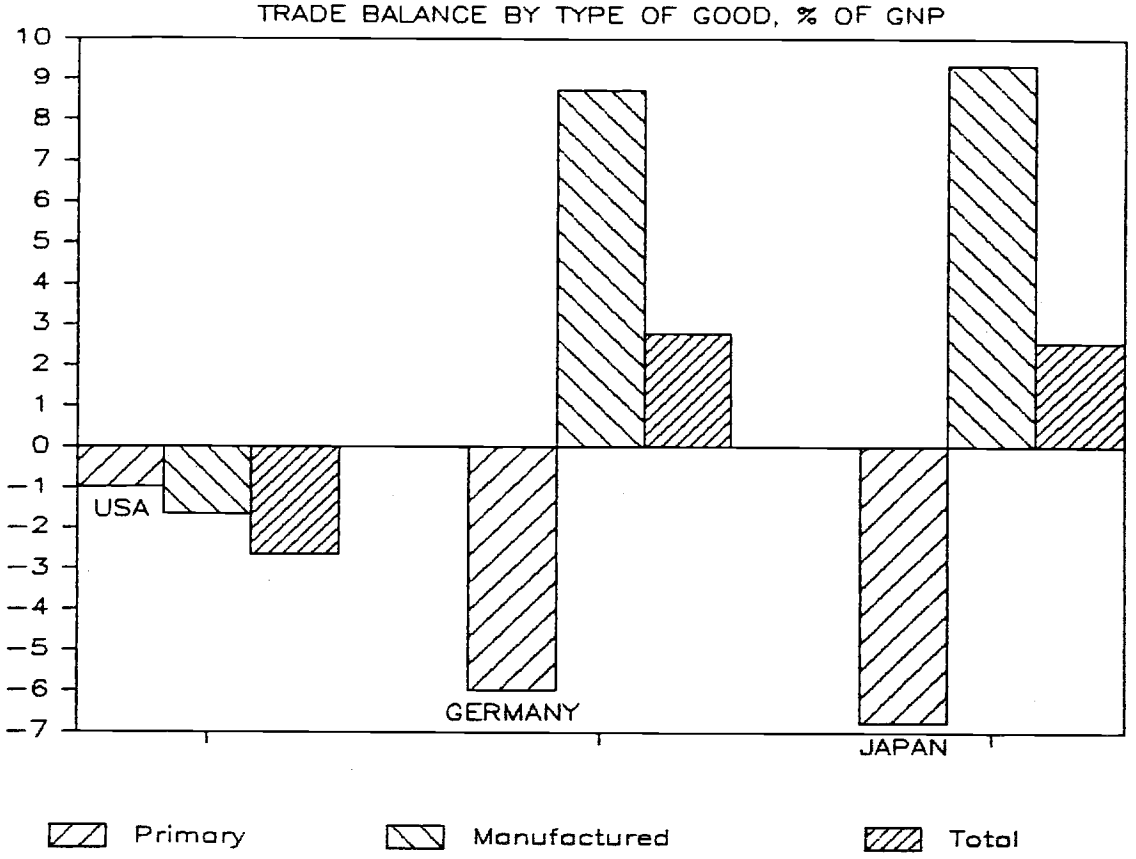

FIGURE 2

MANUFACTURES TRADE AS % OF GNP

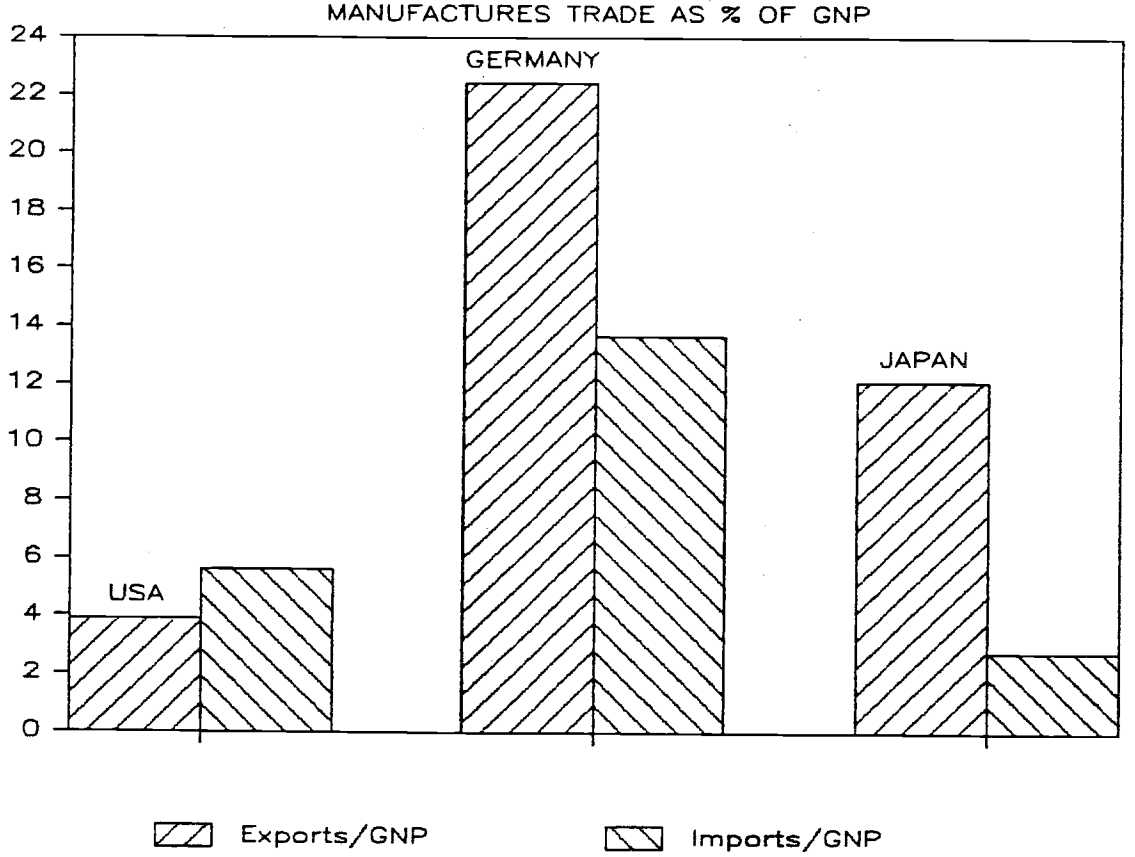

FIGURE 3

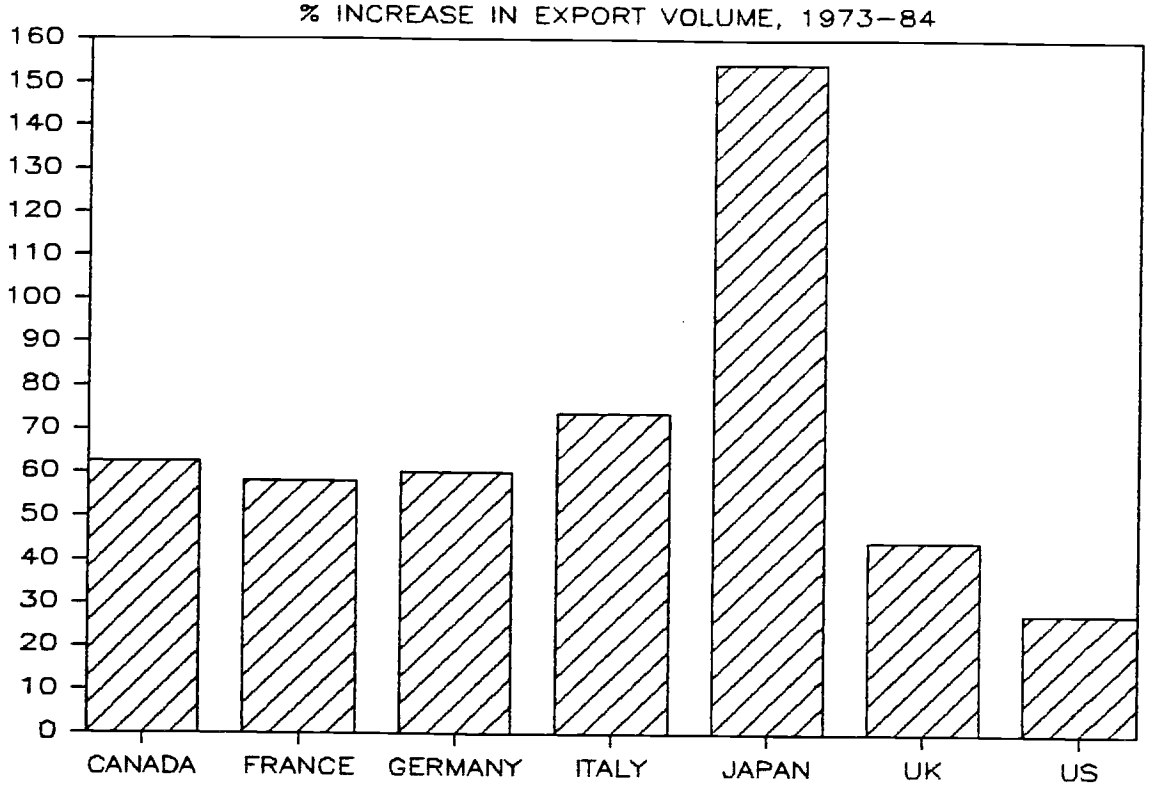
% INCREASE IN EXPORT VOLUME, 1973–84
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
CANADA
FRANCE
GERMANY
ITALY
JAPAN
UK
US

FIGURE 4

ALTERNATIVE PPP MEASURES, 1973=1

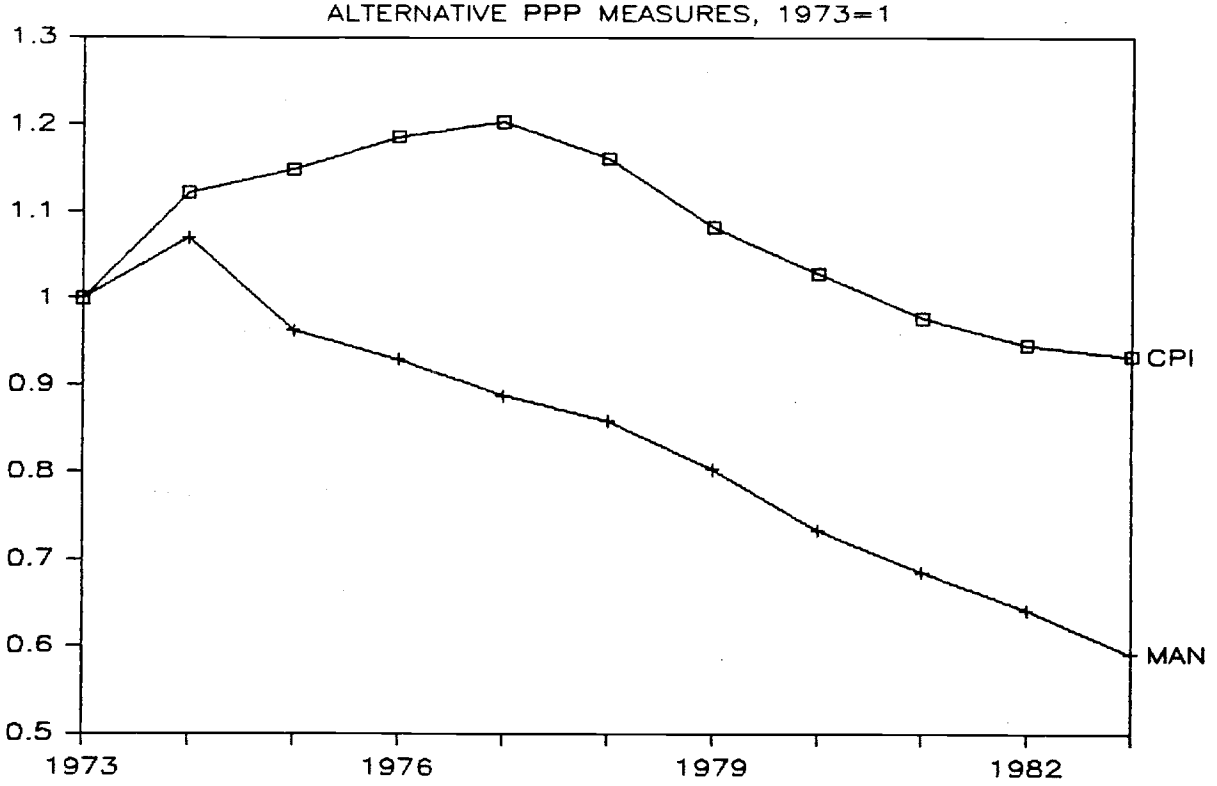

FIGURE 5

PPP VALUE OF YEN, 1973–79 BASE