allowing efficient forecasting, particularly of the turning points. Portes' proposal limits the forecasting horizon to one month, at least at a first glance. However, by generating a systematic delay in forecast timing, which is up to three months in the case of Yugoslavia, he is able only to forecast the past. Adjustments of constant terms could help, but not if handled the way Portes proposes and it would be rather queer to rely in real forecasting on adjustment of constant terms anyhow.

(7) Portes "suspects that in the three-equation structural model" I am "more concerned to back" my "interpretation of the Yugoslav short cycles." But its main result is precisely to oppose my "autonomous expenditures" interpretation since oscillations are partly explained endogenously. To grasp the meaning of this and similar results one should look at Hickman, 1972.

(8) As for explosiveness of the model, it entirely depends on the estimated parameters (Samuelson, 1939) and on exogenous data. The Durbin-Watson statistic has no bearing on simulation whatever. Since high positive serial correlation is necessarily present in models with seasonally adjusted monthly data, one is tempted to ask whether building annual models (with no autocorrelation) is the way to increase economic stability.

In our case simulation was performed, in order to avoid transmission of cycles from outside, on an extremely restrictive assumption of linearly increasing government expenditures as the only exogenous variable. The really surprising fact is that explosion occurs only after 30 months.

(9) Portes implies that models and their structures (values of parameters) do not tell anything about the respective economies. It is true that nobody has ever seen an economy explode. But have explosive models really nothing to tell about the stability of an economy? What, then, are they built for?

Let me finally agree with Portes that some of the "most important questions ... bearing on investment cycles" which I neglected to discuss are really highly attractive. Would he agree that they represent a very small sample of the whole population of interesting questions about investment cycles? (All references apply to the bibliography given at the end of my paper.)

Stabilization Policy In Japan And Its Relations to Economic Instability in the World

Masahiro Tatemoto

When small Alice in Wonderland began to grow larger again, the Dormouse who was sitting next to her said, "I wish you wouldn't squeeze so." Alice said, "I can't help it. *I am growing.*" "You've no right to grow here," said the Dormouse. "Don't talk nonsense," said Alice, "You know you're growing too." "Yes, but *I grow at a reasonable pace,*" said the Dormouse, "*not in that ridiculous fashion.*"

The topic I was given in this session reminded me of the above story because it seemed to me that the title itself implied (1) that Japan had a stabilization policy with instruments aimed at realizing the economy's potential rate of growth under the constraint of price stability and the balance-of-payment equilibrium; (2) that the Japanese high rate of growth in real GNP (See Figure 1) was the result of this stabilization policy; (3) and that this "ridiculous fashion" of Japanese economic growth in comparison with other countries "reasonable pace" was one of the causes of world economic instability ("squeeze").

The purpose of this paper is to examine whether these three propositions are true. In section 1, we will discuss whether there was a stabilization policy in the economy. Section 2 discusses some causes of rapid growth with special attention to the relationship between domestic investment in plant and equipment and export performance. Section 3 will examine how this export performance and import-saving technology, together with the timid "do-nothing" attitude of our government, led to a large surplus in the balance of payments in 1971, which was a destabilizing element in the international monetary system.

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1. A Stabilization Policy?

The Japanese economy since 1961, the first year of the "Income Doubling Plan," has witnessed a rapid growth in real GNP with full employment, although the rate of growth has fluctuated within a range of 5-15 percent, as shown in Figure 2. Figure 2 also shows the increase in the consumer price index (average annual rate of increase of 6 percent) and a sharp increase in international reserves after 1967.

For those who pay attention only to the average annual rate of growth, setting aside the inflation and external balance problems, the Japanese performance may be called a "success story." On the other hand, for those who are concerned with inflation and external balance, it is not. Moreover, as already mentioned, year-to-year change in the rate of growth could never be called stable. Table 1 represents the gap between potential and realized GNP.

Table 1
Potential and Realized GNP (Billion Yen)

Fiscal Year	Potential (V*)	Realized (V)	Gap (V*—V)	Gap ratio
1961	23,321	23,275	46	0.2
1962	26,002	24,610	1,392	5.4
1963	28,895	27,764	1,131	3.9
1964	31,946	30,771	1,175	3.7
1965	35,003	32,484	2,518	7.2
1966	38,495	36,239	2,256	5.9
1967	42,717	41,120	1,597	3.7
1968	47,825	46,750	1,075	2.2
1969	53,550	52,498	1,053	2.0
1970	60,365	57,493	2,872	4.8

Source: Economic Deliberation Council, 1973, *The 4th Report of the Committee on Econometric Methods.*

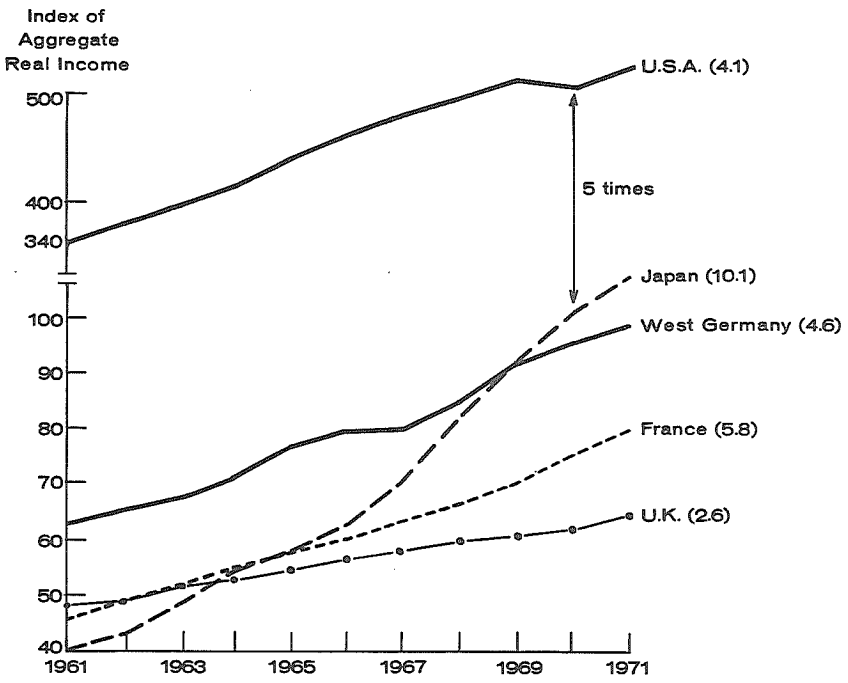
The potential GNP(V*) in the table was computed by using a production function,

$$\ln V^* = -3.9916 + 0.5495 \ln (K_p + K_{g1}) + 0.56721 \ln (h^* Q_L N_L) + 0.1737 \ln K_{g2} + 0.01t + 0.0017Z$$

Figure 1

GROWTH RATE IN REAL GNP

(1970 Japan = 100)



Note: Figures in parentheses indicate average per annum rates of growth.

Source: The Bank of Japan, Japan and the World: A Comparison by Economic and Financial Statistics, 1972

Figure 2.1

GROWTH RATE

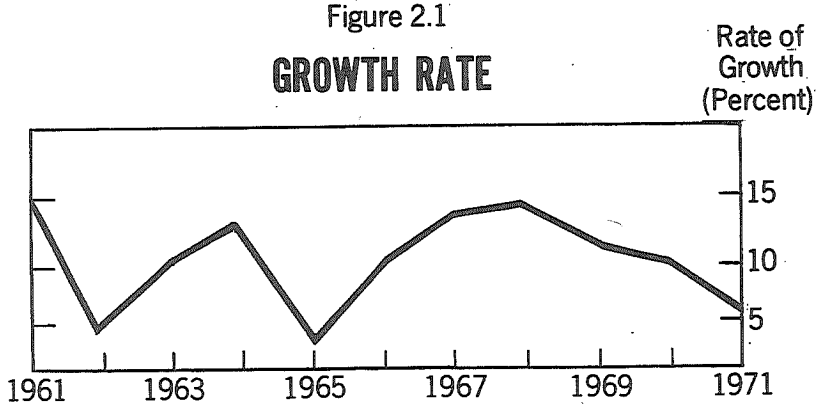


Figure 2.2

EXCHANGE RESERVE

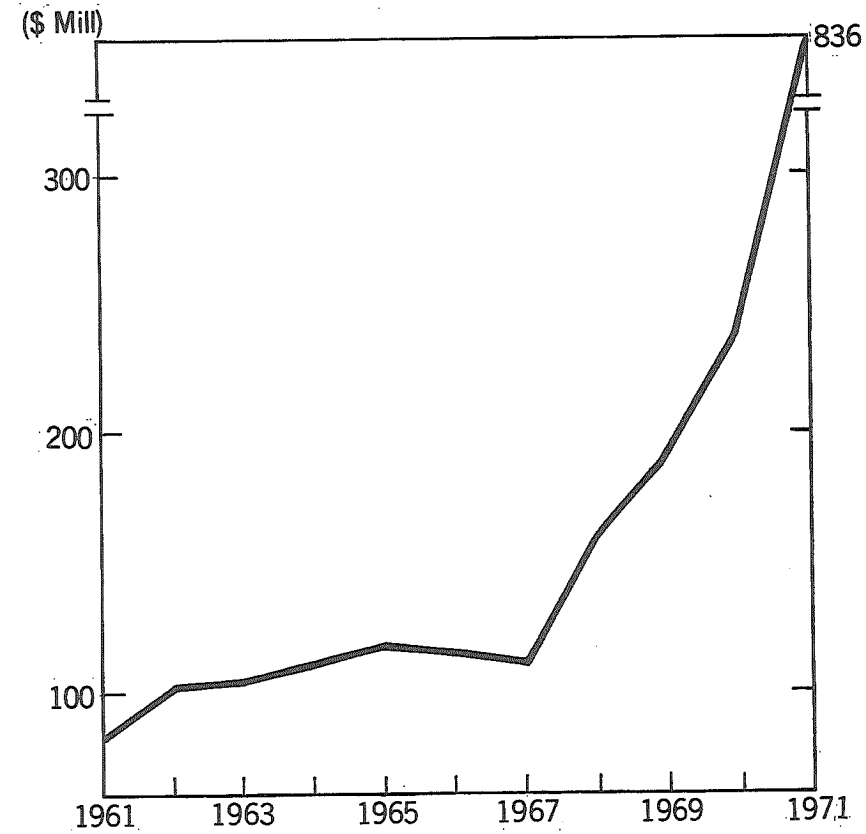


Figure 2.3

PRICES

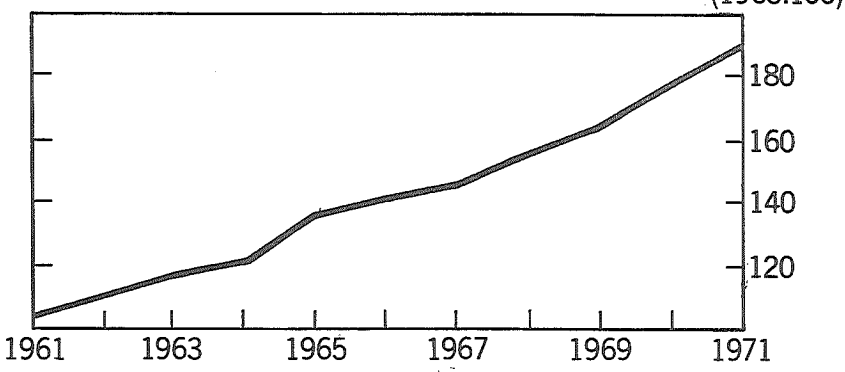
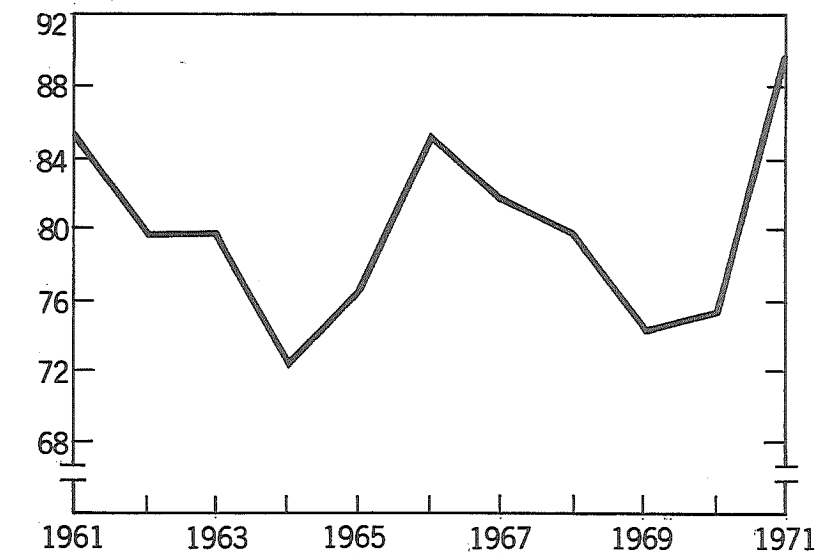


Figure 2.4

UNEMPLOYMENT



K_p = private capital stock, K_{g1} = capital stock in National Railway and Telegram and Telephone Corporation, K_{g2} = capital stock in other government enterprises, h* = standard working hour x 1.12, Q_L = quality of labor index, N_L = labor force, t = time, Z = biannual dummy.

According to Table 1, there was always underutilization of supply potentials in the Japanese economy in the period of 1961-70. In Figure 3, realized annual rates of growth in real GNP are shown in contrast with planned rates of growth and the annual GNP gap ratio,

$$\frac{(V^* - V)}{V^*} \times 100.$$

Planned rates of growth were taken from three economic plans revised successively in the period, and they are to be interpreted as the *ex ante* targets which government economic policy authorities pursued for stabilization purposes. It is of some interest to note that the target rates of growth were much lower than actual ones except for two "recession" years, 1962 and 1965. This means that the economy performed much better than the authorities expected. The same kind of underestimation of the economy's potential can be observed in our government's short-term outlook that is published at the beginning of each fiscal year to be used as a basis of "economic management." Should this be called a "success story" for stabilization policy?

The persistent underestimation in the plans and annual outlook has an important implication in considering the role of budgetary surplus for promoting economic growth. "Balanced budgets" were prepared on the basis of underestimated revenues corresponding to biased projections, which whether intentional or not, produced persistent current surpluses *ex post*, even after the Ministry of Finance had used a sizable portion to reduce income taxes in the next fiscal years. [Watanabe (1970)].

Table 2 represents the percentage distribution of gross saving and capital formation since 1961 fiscal year. Note that the shares of both government saving (government current surplus roughly corresponds to tax revenues *minus* current purchase of goods and services in our case) and its investment is notably large. By using the notations in Table 2 and neglecting the statistical discrepancy, we can write:

$$\underset{\text{(saving)}}{D + Sp + Sc + Sg} = \underset{\text{(investment)}}{Ip + Ig + J + If},$$

and Table 2 shows that on both side of the equation, the contribution of government is substantial.

In addition to the above fiscal system to produce a sizable "surplus budget," an "easy money" policy has been continuously adopted to encourage private fixed investment, predominantly investment in plant and equipment embodying new technology. This is referred by Tachi (1966) as the Japanese version of "easy money with a surplus budget" policy for

Figure 3

PLANNED AND REALIZED GROWTH

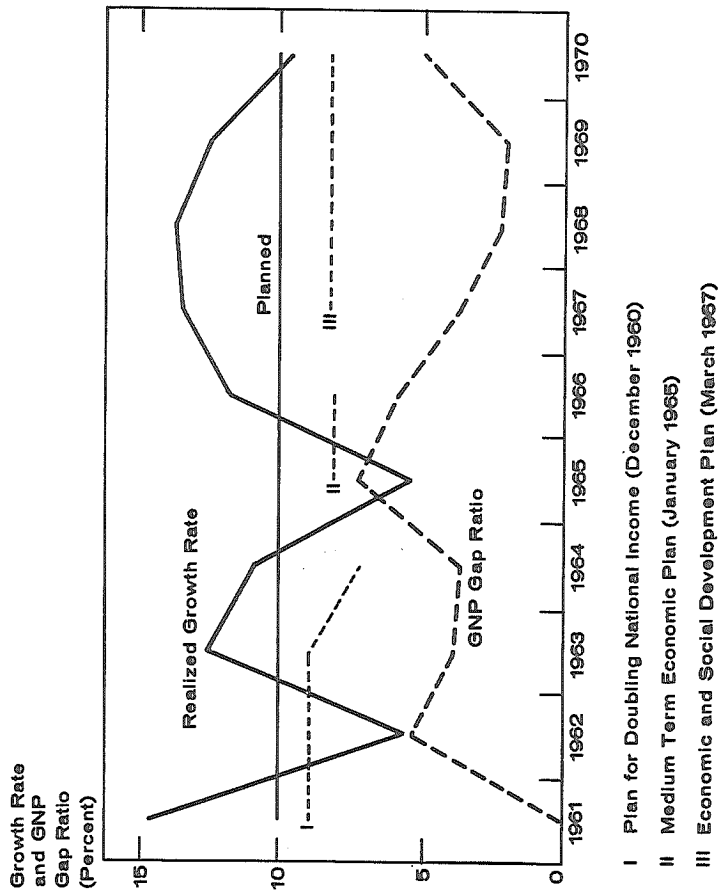


Table 2
Gross Saving and Investment
(percentage distribution)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Provisions for the consumption of fixed capital (D)	28	33	33	35	37	35	34	33	33	34	36
Personal saving (Sp)	31	35	33	32	34	33	34	33	31	33	34
Corporate saving (Sc)	15	12	12	10	9	13	14	17	16	16	15
Saving of general government (Sg)	22	23	22	19	18	16	17	18	19	20	18
Statistical discrepancy (E)	4	- 3	0	4	3	4	2	0	2	- 2	- 2
Private gross fixed capital formation (Ip)	66	68	66	67	62	62	65	64	67	66	64
Government gross fixed capital formation (Ig)	21	28	26	25	27	24	23	22	20	21	25
Inventory investment (J)	18	4	12	8	7	10	13	11	10	10	4
Surplus of the nation on current account (If)	- 5	0	- 4	0	3	3	0	3	3	3	7

Source: Economic Planning Agency, *Revised Report on National Income Statistics,* 1951-1967; and *Annual Report on National Income Statistics* 1973.

economic growth with some qualifications. But before entering into a discussion on the monetary policy to increase Ip on the right-hand side of the above equation, we will add one fact. The government attempted to increase all other elements except Sg on the left-hand side of the equation through a tax policy measure, such as allowing fast depreciation practices (for higher D), tax reduction on retained profits (for higher Sc), and discouraging personal consumption by maintaining an almost constant real tax rate in spite of the fact that the nominal income tax was reduced every year by raising the minimum taxable income in accordance with the growth in personal incomes (for higher Sp). The "easy money" policy has been called a "low-interest rate" policy and it has been coupled with credit rationing, i.e., direct quantitative credit control which is called "regulation at the window" by the Bank of Japan. Without any theoretical justifications, policy makers, such as the Ministry of Finance and the (notorious) Ministry of International Trade and Industry believed the "low-interest rate" policy would enhance the "international competitive strength of Japanese industries" by reducing the costs of "capital" which was considered to be a "scarce resource," in comparison with "abundant labor." If this presumption were true, a low interest rate might be considered as a privilege or as a subsidy to a category of "important industries" (as a matter of fact, mostly heavy and chemical industries) which were qualified to borrow funds from commercial banks under the "loan rules" of the government at artificially fixed lower interest rates than that would have been determined under the free market mechanism. This Japanese version of the "easy money" policy has *not* been carried out by increasing the supply of money in order to lower the interest rate in a free financial market. On the contrary, it meant the rationing of credit at an artificially fixed low interest rate i_1, as represented in Figure 4, not at i_0 which would equate the demand and supply of loanable funds for investment. Thus, in this scheme, the unsatisfied excess demand AB has to be suppressed to OA by credit rationing. It should be noted that the predominant portion of the investment funds of private corporations has been financed (directly) by commercial bank loans rather than by issuing (directly) new stocks or bonds in the capital market. As a result, commercial banks, especially big city banks, which financed the investment of large scale corporations in the field of heavy and chemical industries, experienced persistent "overloans" in excess of the deposit to these banks. The banks, in turn, depended heavily on borrowings from the Bank of Japan. This means that the Bank of Japan has supplied additional money ("growth money") making the low interest rate policy effective. Is it then the "easy money with a surplus budget" policy that has succeeded in making the economy grow rapidly?

Figure 5 shows when tight money policies were adopted since 1961. It also shows the changes in exchange reserves, the implicit GNP deflator and the growth rate of real GNP (seasonally adjusted), which were considered major objectives of a stabilization policy. Note that the changes in

Figure 4

CREDIT RATIONING

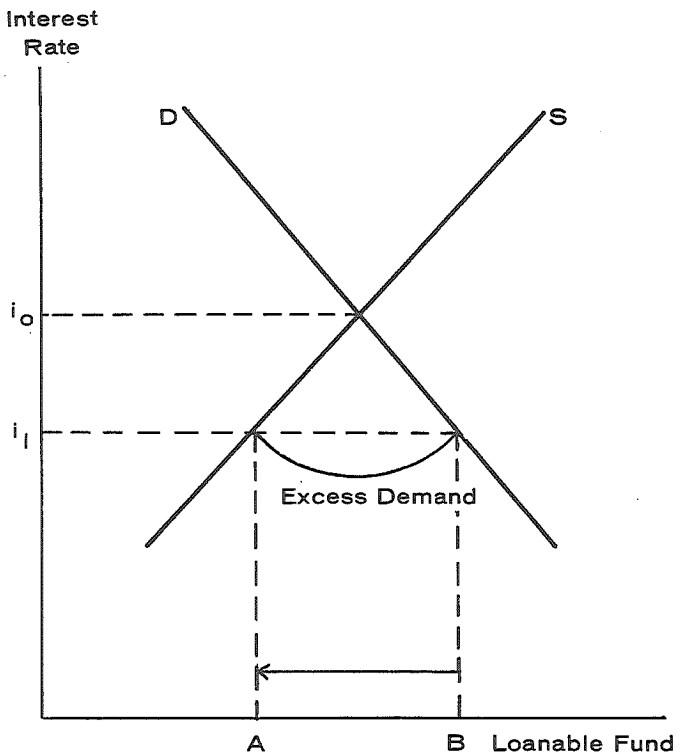
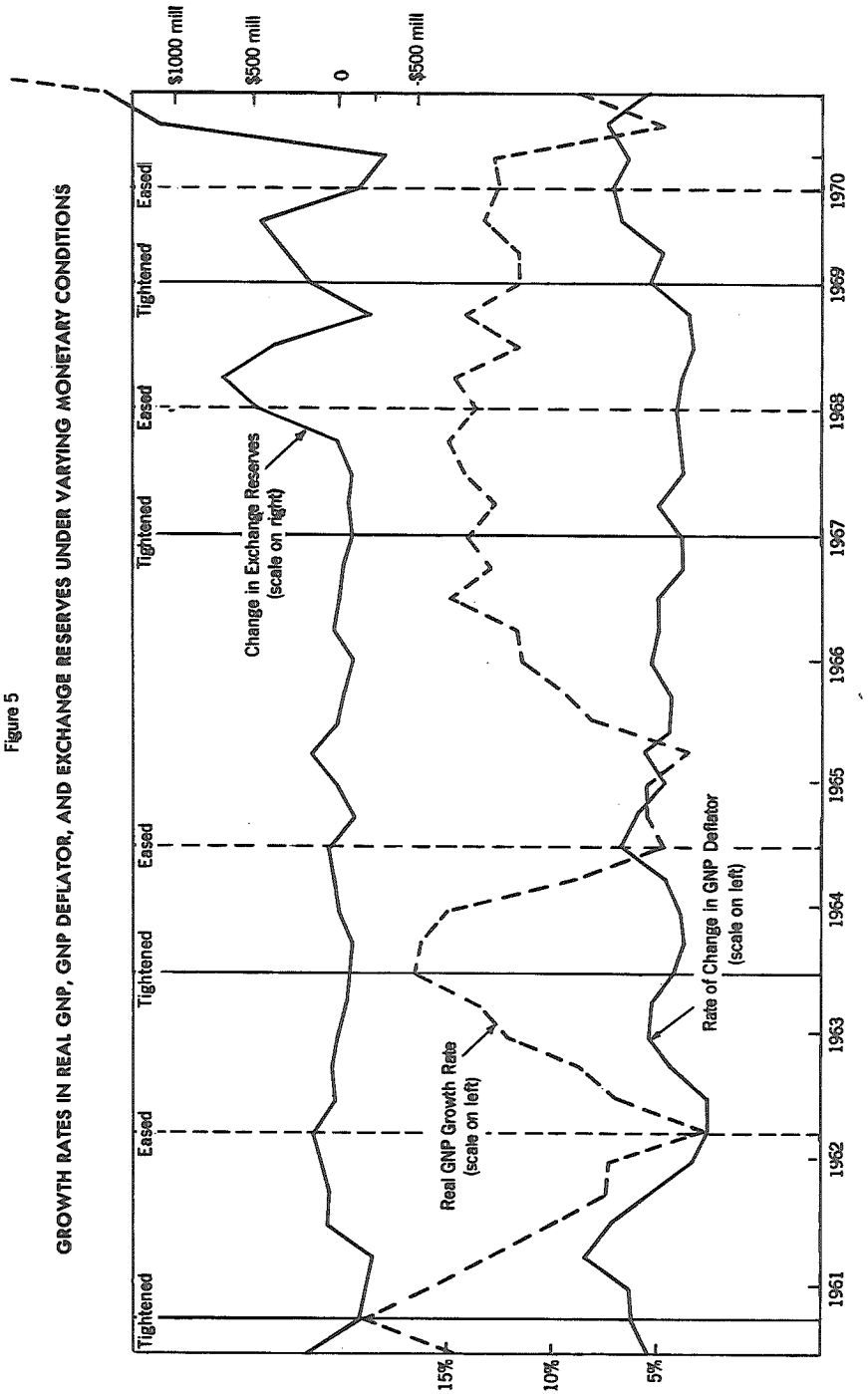


Figure 5

GROWTH RATES IN REAL GNP, GNP DEFLATOR, AND EXCHANGE RESERVES UNDER VARYING MONETARY CONDITIONS



monetary policy (which are reflected in the changes in rediscount rates) were sensitive to the balance-of-payments positions at least until 1967. Kaizuka (1967) carried out careful studies on the objectives of Japanese monetary policy along the line of Dewald and Johnson (1963) and Rueber (1964), and he found that the Bank of Japan always attempted to achieve a single policy target, i.e., balance-of-payments equilibrium. The achievement of other objectives, such as price stability and economic growth with full employment, was incidental to that of the balance-of-payments target. This implies that the economy's trends of rapid growth originating from the above mentioned "easy money with surplus budget" mechanism were checked from time to time by the balance-of-payments constraint, and the monetary policy in Japan for stabilization purpose was of a "stop-and-go" type. Since fiscal expenditures were not suitable measures for short-term stabilization because the Ministry of Finance maintained an inflexible "single year balancing principle," the Bank of Japan had to maneuver its strong weapon of direct controls in order to cope with the balance-of-payments difficulties. The Bank had to wait until the summer of 1969 to use it for the purpose of internal price stabilization when the external balance was favorable. We will come back to this controversial matter in Section 3.

2. Invesment-Led Growth

In the last section our major finding was: (1) that there was a growth-oriented policy of "easy money with a surplus budget," which was designed to stimulate business fixed investment; and (2) that the resulting high rate of economic growth, when excessive, had to be checked with reins of a tight money policy for balance-of-payments reasons. Table 3 represents the increase in real GNE and its components in the decade of 1961-70.

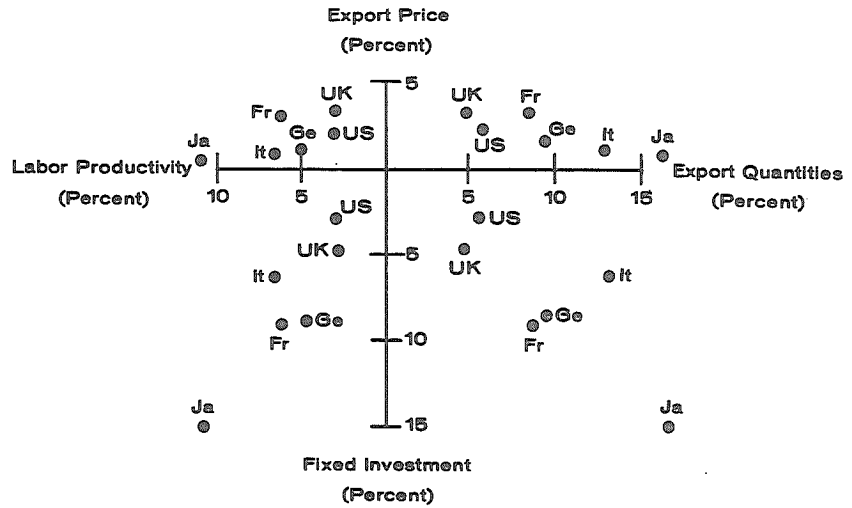
A glance at Table 3 reveals that the increase in business investment in plant and equipment (which accounts for about one-fourth of the total increase in real GNP in a decade) and exports of goods and services (which account for 17 percent of the total increase) played a predominant role in economic growth, while consumption, both private and governmental, grew slower than GNP. There is a question whether the growth of the economy has been "investment-led" or "export-led." Since the contribution of gross domestic capital formation accounts for 47 percent of the total increase, most economists believe growth was "investment-led." Others argue that exports have grown faster than investment as is seen in Table 3. However, exports and investment are interrelated and it is naturally impossible to evaluate the relative contribution of each to growth.

Figure 6 shows such interrelationships between fixed investment, labor productivity, export price and export quantum in the 1960s for six industrial countries. All variables are expressed in terms of the average annual percentage change.

Figure 6

AVERAGE ANNUAL RATE OF INCREASE FOR 1960-1969

Export Prices, Labor Productivity, Export Quantities and Fixed Investment



Source: Bank of Japan, Monthly Report of Research Department, August 1973.

Table 3
GNE in 1965 Prices (Billion Yen)

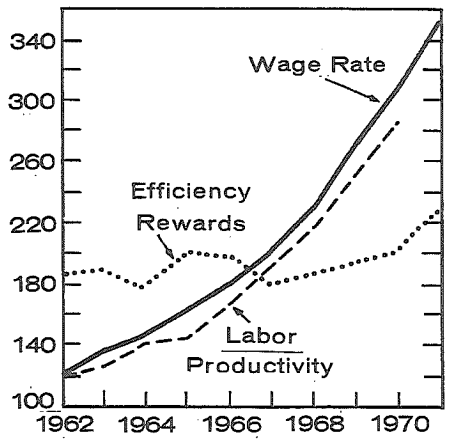
	1961	1970	Increment 1961-1970	Percentage Contribution	Growth Rate per Annum
Consumption					
Private	13,027	28,504	15,477	45.3	8.1
Government	2,260	4,025	1,765	5.2	5.9
Fixed Investment					
Business	4,262	12,977	8,715	25.5	11.8
Government	1,766	5,062	3,286	9.6	11.0
Housing	913	3,417	2,504	7.3	14.1
Stockpile	1,315	2,712	1,397	4.1	7.5
Export	1,981	7,768	5,787	16.9	14.7
(Minus) Import	-2,260	-7,024	4,764	-13.9	12.0
GNE	23,275	57,441	34,160	100.0	9.5

Source: Economic Planning Agency, *Annual Report on National Income Statistics*, 1973.

We observe in the figure: (1) the larger the fixed investment, the larger was the increase in labor productivity, (2) the larger the improvement in labor productivity, the larger was the reduction in export price, and (3) the larger the increase in price competitiveness of exports, the larger was the export quantum, (4) the larger the export performance, the larger was investment. Japan's case is in the extreme in the above interrelationship. A substantial portion of gross domestic capital formation was directed to plant and equipment, both private and governmental, which directly increased productive capacity. These new plants and equipment were not for the mere expansion of traditional types which used old technology. Instead, they embodied technological progress of both foreign and domestic origin. For example, the construction of a new steel mill was not necessarily a mere addition to the existing productive capacity of a mill of the same type as before, but often embodied a completely new technology, such as an oxygen converter, an electronic control system, a larger capacity blast furnace, etc. The investment engine which was ignited by technological progress increased labor productivity, and in spite of the sharp increase in wage rates, the former exceeded the latter enabling export prices to fall. This is shown in Figure 7. In other words, the productivity increase which resulted from technical progress embodied in new plant and equipment influenced Japan's comparative advantage favorably, permitting infant industries to grow. In the first stage of development, an infant industry's disadvantage disappeared so that home production of

Figure 7

WAGE RATE, LABOR PRODUCTIVITY AND EFFICIENCY REWARDS*



*Wage Rate and Labor Productivity are Indexes (1962 = 100).

such industry substituted for imports. In the final stage, the industry succeeded in having a comparative advantage (under the fixed exchange rate of 360 yen a dollar) and exporting its products. This kind of product cycle (innovation → investment → import substitution → export) can be observed in the postwar development of (present) export industries, such as iron and steel, automobile, synthetic fibers, petrochemicals, electronics and so on. However, as already mentioned, it is not appropriate to conclude that the spectacular success in export performance is the result of the "animal spirit" of investor-entrepreneurship in Japan, because investments were partly induced by the increase in effective demand including export. To illustrate the mutual interdependence between investment and export, let me present some numerical relationships in the *Denken* model on which we are working. In the model, the elasticities of private fixed investment are as follows:

With respect to	Elasticity Value
(1) Rate of profit/rate of interest	0.87
(2) Increase in commercial bank loans	0.30
(3) Real wage rate (substitution for labor)	
before 1963 F. Y.	0.71
after 1964 F. Y.	0.86

Since profit depends on national income and other variables, as our model showed, and national income is defined as GNE which includes export minus adjustment items, it is clear that part of investment was induced by exports. Thus, it is impossible to isolate the investment-led growth in GNP from the export-led growth. In connection with the above mentioned "easy money" policy, it is important to note that monetary variables and bank loans are included in the above investment function. Then, it might be reasonable to conclude that the rapid growth of the economy was, at least until 1970, a success story of the "low interest with credit rationing" policy. That policy served to maintain the interest rate low enough relative to the profit rate, and the excess demand for investment funds resulting from this policy was successfully adjusted by direct control of commercial bank loans.

3. External Surplus

As represented in Table 4, the nation's external balance prior to 1968 was almost in equilibrium under the fixed exchange rate ¥360 per dollar, and foreign exchange reserves were maintained at the almost constant level of 2 billion dollars. After 1968, exchange reserves began to increase sharply due to widening gaps between exports and imports. A rough but useful account of this widening gap is the difference between the *total* elasticity of Japanese exports (in dollar terms) with respect to world imports (in dollar terms), an elasticity which has been 2 and the elasticity of imports (in dollar or yen terms as both coincide under the fixed exchange

Table 4
External Balance
(billion dollars)

Year	Export	Import	Trade Balance	Balance on Current Account	Overall Balance	Exchange Reserve
1961	4.1	4.7	-0.6	-1.0	-1.0	1.5
1962	4.9	4.5	0.4	—	0.2	1.8
1963	5.4	5.5	—	-0.8	-0.2	1.9
1964	6.7	6.3	0.4	-0.5	-0.1	2.0
1965	8.3	6.4	1.9	0.9	0.4	2.1
1966	9.6	7.4	0.3	1.3	0.3	2.1
1967	10.2	9.1	1.2	-0.2	0.6	2.0
1968	12.8	10.2	2.6	1.1	1.1	2.9
1969	15.7	12.0	3.7	2.1	2.3	3.5
1970	19.0	15.2	4.0	2.0	1.4	4.4
1971	23.6	15.8	7.8	7.9	7.7	15.2
1972	28.0	19.1	9.0	6.7	4.7	18.3
1973	36.2	32.5	3.7	-0.3	-10.1	12.2

Source: The Bank of Japan.

rate) with respect to GNP (in yen terms) an elasticity which has been unity. In order to balance exports and imports, Japanese GNP must grow twice as fast as world imports (starting from equilibrium), and this was the case before 1964. After 1965, however, the growth rate in the world imports increased by 10 percent, while that of Japanese GNP remained at 15 percent as before. This is a simple and intuitive explanation of the widening gap between exports and imports after 1965.

In this phase of the accelerated increase in exchange reserves, the Bank of Japan dared to adopt a strong tight money policy for fear of the development of inflation. It was in the summer of 1969 as we have mentioned at the end of Section I. In fact, the wholesale price index which had been stable for a decade (1 percent per annum increase) increased for 15 consecutive months of the 1969-70 period by 5 percent. Academic economists like Yasuba (1970) criticized the policy for being inappropriate in the case of "inflation and external surplus" because the tight money policy could be a remedy for inflation but would increase the external surplus at the same time. In addition, he identified the inflation as "imported" under the fixed exchange rate. This is one reason why many academic economists, including the present author [Tatemoto and Uchida (1971)], proposed a revaluation of the yen as an appropriate measure. In view of the tendency of a widening gap in the trade balance, it was necessary in this phase to maintain a sufficiently *higher growth rate* in comparison with that in world imports in order to compensate for the one-half lower total elasticity of imports relative to that of exports. Thus, the consequence of tight money policy at that time was the further widening of a payment gap without a price decline and the accelerated accumulation of reserves. Where a higher domestic rate of growth was not feasible, for one reason or another, an appropriate policy for restoring equilibrium was exchange rate adjustment. However, this policy could not be adopted due to the strong political pressures opposing revaluation. Thus, instead of adjusting the fixed exchange rate, a "monetary and fiscal policy mix to *defend* the yen" was adopted in the 1970-71 period. This policy of domestic expansion (and import liberalization) was continued until the summer of 1971 and the NEP (New Economic Policy), introduced not by Lenin but by Nixon. Then the politicians said that Japan "was forced by foreign pressures to float the yen" after two weeks of mysterious effort by the Bank of Japan to maintain the old fixed exchange rate of ¥360 per dollar at the cost of an additional purchase of 4.5 billion paper dollars.

Political pressures backed by special interests disguised as the nation's interests often took the place of reason in the history of economic policy in modern Japan. For example, towards the end of the 1920s when the country was preparing to come back to the gold standard, political pressures attempted to maintain the *low* price of yen in terms of shillings for reasons of national prestige, while towards the end of 1970s, there were political pressures to maintain the *low* price of yen in terms of cents. Both of these unreasonable political efforts made a muddle of the economy.

At the end of this brief note on Japanese economic policy, we have reached a somewhat ironical, although not paradoxical, conclusion that it was the failure, not the success, of Japanese stabilization policy that caused instability in the international monetary system. That is to say, the failure to maintain a sufficiently *higher* domestic rate of growth (by a stabilization policy) than those abroad, was the main cause of a large external payments surplus during 1971-72, which was one of the destabilizing elements in the world monetary system.

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Discussion

Lawrence B. Krause

Professor Tatemoto has done an excellent job of capturing the essence of Japanese stabilization policy in a very few pages and has also managed to be quite provocative. He has examined the following three questions: (1) Did Japan have a stabilization policy in the sense of using policy instruments to promote the realization of its growth potential subject to the constraints of the balance of payments and price stability? (2) Was the rapid growth of Japan during the 1960s a result of stabilization policy? and (3) Was rapid Japanese growth a cause of world economic instability? Professor Tatemoto established that Japan *did* have a stabilization policy; that Japanese growth was substantially, possibly critically, affected by that policy; and that rapid Japanese growth was *not* a cause of world economic instability, but to the contrary world instability might have been avoided if Japan had only grown even faster (or world imports had grown more slowly). I would like to elaborate and interpret his three answers. The Existence and Nature of Japanese Stabilization Policy

There is little doubt but that Japan had a macroeconomic goal and policies addressed to it, but it differed considerably from the stabilization objectives of other advanced countries, and certainly from those of the United States. Japan sought to achieve maximum economic growth for the purpose of catching up with advanced Western countries — essentially the same goal that existed since the Meiji Restoration in 1868. In order to maximize growth, the government was prepared to suffer a large amount of *instability* in economic activity which in some years meant a change in growth rates of close to 10 percent. It was only during a few years in the late 1960s that Japan achieved both a high and stable rate of growth. Thus the government might be criticized — as some Japanese economists have done — for sacrificing too much stability to achieve growth. The

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social cost of instability is sometimes not appreciated by foreign observers because they only look at the unemployment rate which did not change very much from boom to recession years. Rather the cost of a recession was borne by workers who happened to complete their education during a weak employment year and were forced into sub-optimal career paths or by workers who were unable to upgrade their employment into the modern sectors of the economy, and also by small businessmen who lost both capital and employment through bankruptcy of their businesses. As is implied by the above, Japanese policy by concentrating on growth was prevented from focusing on other social goals like the distribution of income (or wealth) and the quality of life which may also be subject to criticism.

Some special interest also attaches to the instruments of stabilization policy — in Professor Tatemoto's apt phrase, "the easy money with surplus budget" policy. Tatemoto indicated how this policy was used to encourage savings at all levels in the economy and to channel those savings into private industrial investment and in particular the heavy and chemical industries targeted by the Ministry of International Trade and Industry for special consideration. Tatemoto somewhat questioned the success of this policy pointing out that realized growth fell short of its potential throughout the 1960s, even though it systematically exceeded the rate indicated in the various economic plans and in the official annual forecasts that were used as a basis for economic management.

But would it have been possible for Japan to have grown at a faster rate during the 1960s? It would hardly seem possible. Aside from 1962 and 1965 when the economy was restrained by tight money, the rate of expansion might well have been limited by labor market constraints of a kind not reflected in the production function used by Tatemoto. One can easily envision a speed limit at which labor can be withdrawn from low productivity pursuits such as agriculture and small business which if exceeded will lead to social and economic disorganization and loss of output. There were signs that such a constraint was operative during the later 1960s despite the calculated GNP gap of 2.0 percent to 4.8 percent per year.

It is rather interesting that the government consistently underestimated Japanese growth. One cannot attribute the poor forecasting record to a string of unexpected developments since the Japan Economic Research Center was in fact able to forecast much better and without a biased error. A more logical explanation suggests that the government intentionally underestimated the growth rate as an instrument for achieving rapid growth. Within the government, the official forecast was used to estimate tax revenues and in combination with the balanced budget ideology, was an effective means of limiting the growth of government expenditures below the growth of tax receipts. Since the elasticity of Japanese tax receipts to money growth is quite high — close to 2.0 — the government had a large melon at the end of each fiscal year to distribute in tax reductions and it gave generous amounts to business which encouraged industrial investment. Thus the underestimation of economic

growth by the government became an instrument to channel more resources into private industrial investment which in turn helped to promote economic growth.

Investment-led Growth vs. Export-led Growth

Tatemoto answered his second question in the affirmative; that is, rapid Japanese growth could be attributed to the success of the "easy money with surplus budget" policy. He showed in Table 3 that business plant and equipment expenditure was the major force driving the economy and resulted from (or was encouraged by) government policy. The only conceivable competing hypothesis is that Japanese growth was export-led since exports also grew faster than gross national expenditures. Tatemoto argues that it is impossible to separate the growth stimulus coming from exports as distinct from investment since they are interrelated; e.g., profits are a major factor determining investments (as measured in the Denken model) and export sales are a major determinant of business profits.

While I do not necessarily disagree with Tatemoto, I have investigated the export-led growth hypothesis from a different point of view. The concept of export-led growth has been used in the literature in three different ways: first as a descriptive concept, second as a positive or analytical concept, and third as a normative concept and policy prescription. In purely descriptive terms, Japanese growth has been export-led in that exports grew faster than GNP as shown in Table 3. When measured in 1965 prices, Japanese exports of goods and services were 8.4 percent of GNP in 1961, rose to 13.2 percent in 1970 and 14.4 percent in 1972. Similarly Japanese exports of manufactures relative to manufacturing production measured on a 1970 base was only 67.2 in 1961, 100 in 1970 and 117.4 in 1972. But in the same descriptive sense that Japanese growth was export-led, it has also been led by business fixed investment, government investment, housing investment and even imports. Clearly the concept has little interest in just its descriptive form.

Export-led growth as a positive or analytical concept is of much greater interest, for instance, as used by Caves.[1] The concept in this sense relates to the economic growth consequence that comes from an exogenous disturbance in the export sector such as that which occurred as a result of the wheat boom of Canada in 1901-1911 or the oil boom of Ecuador today. Such a disturbance would lead to a rise in economic rent and in real income and is quite distinct from the rise in income that comes from higher productivity in domestic production as a result of larger investments in human or physical capital. In order for this concept to have any explanatory power, there must be a source of external disturbance and a response mechanism to turn the disturbance into domestic growth. There is little question that Japan had the response mechanism, but the external disturbance is another matter. Caves suggests a simple

test to distinguish an external from a domestic disturbance. If the disturbance arises predominantly from external demand, then export price and quantity changes should be positively correlated; and if the disturbance arises from shifts in domestic supply, the correlation would be negative. By this test Japanese growth was clearly *not* export-led for most of the 1960s since the price index for Japanese exports was 92.0 in 1961 (1970=100) and remained virtually unchanged through 1968 when it was 92.9 despite the massive increase in export volume of 232 percent. From 1968 through 1971, there was a distinct change. Not only did Japanese export volume and prices rise, but a balance-of-payments surplus developed. This was the period of Vietnam-induced price inflation in the United States and Japanese growth might well be described as export-led in this short period — exports primarily to the United States.

The normative sense of export-led growth has recently been endorsed again by Nicholas Kaldor as a prescription for British policy.[2] According to the prescription a country like Britain can best raise its growth rate by stimulating exports through subsidizing them or simply undervaluing the exchange rate. Japanese experience might be instructive in this regard. While Japan had many policies which in one way or another promoted exports or inhibited imports, these policies were operative throughout the entire postwar period and were if anything being moderated when the period of export-led growth started in 1969. The closest that Japan came to a policy stance in favor of export-led growth resulted from a negative policy, i.e., a refusal to revalue the yen when it became undervalued. As a result of this refusal, Japanese economic and political relations with its economic partners suffered and in general this was a very unhappy time for Japanese foreign relations. This refusal was criticized by Tatemoto, Amano and many other Japanese economists. What this suggests is that a large industrial country like Japan or Britain cannot promote export-led growth without destabilizing the international system of which they are a part, although the same judgment might not apply to a less developed country.

Rapid Japanese Growth and World Economic Instability

In the last section of his paper, Tatemoto rejected the notion that rapid Japanese growth was a cause of world economic instability. He points out that the total elasticity of Japanese exports (in dollar terms) with respect to world imports (in dollar terms) was 2.0 or exactly twice the elasticity of Japanese imports with respect to Japanese GNP. Thus in order to maintain a balanced expansion, Japanese GNP must growth twice as fast as world imports, which generally means more than twice the growth rate of other industrial countries. The instability that occurred in the world after 1968 when Japan developed a large balance-of-payments surplus was not due to too rapid Japanese growth, but because world trade volume increased without a corresponding rise of Japanese GNP growth (which was

already at 15 percent) and thus a gap developed. According to Tatemoto, Japan can be criticized for not revaluing the yen, but not for growing too quickly.

Again, I do not think I disagree with Tatemoto, but I would like to put two reservations on his interpretation. First, as shown by Komiya,[3] it appears that Japan could grow faster than other countries without having either a surplus or deficit in the balance of payments. But in my view, a large country like Japan can cause severe adjustment problems for other countries through unusually rapid growth even if it had a balanced expansion of exports and imports. The adjustment problem can arise either through an escalation of raw material prices if world supply does not keep pace with Japanese import demands or if world industrial markets do not grow fast enough to absorb needed Japanese exports without an increase in Japanese shares of trade. While these are problems of adjustment rather than instability, they are serious nonetheless.

Second, I cannot accept the elasticity of Japanese exports with respect to world imports as a fixed parameter, but rather view it as endogenously determined and principally by the structure of Japanese growth. As noted previously, Japanese policy promoted private investment-led growth and it was the expansion of industrial capacity resulting therefrom that yielded such high elasticities. It was not the rate of Japanese growth that caused world instability, but rather the fact that it was weighted so heavily by industrial expansion. I have concluded this from a particularly insightful earlier work by Professor Tatemoto.[4] In a long-run simulation of the Denken model, Tatemoto showed that if government goods and services plus government investment were the driving force in the economy, Japanese growth could continue at a high rate without a tendency toward balance-of-payments surpluses, but surpluses would occur with private plant and equipment-led growth. Since many observers suggest that Japan really requires a larger share of public goods in the society, the policy option is open to them. Thus rapid Japanese growth may not have been the cause of world instability, but an imbalanced structure of Japanese growth might have been.

Let me conclude by expressing my sincere appreciation of Professor Tatemoto's work — not only this paper, but his other work as well. This conference is in his debt.

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Discussion

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Dr. Krause has given superb comments on Professor Tatemoto's paper as an expert on the Japanese economy. Unfortunately Professor Tatemoto was unable to attend this seminar, and I hope it will not be inappropriate for me to give some remarks on Dr. Krause's comments.

First of all, it seems important to make clear the meaning of "stabilization policies." A natural interpretation of the term would be that it means a set of policies which are directed toward stabilizing the fluctuations of certain target variables around their long-run growth paths. It would not cover policies which are intended to affect the long-run growth paths themselves. I think the first point of Tatemoto's paper is to negate the existence of stabilization policies in this sense. The policy combination of the selective low-interest-rate policy with the de facto surplus budget policy had better be called a growth policy rather than a stabilization policy. And in most of the 1960s other policy tools, especially the monetary policies and to a lesser extent some part of the fiscal policies, were by and large mobilized to adjust the balance-of-payments deficits under the fixed exchange rate system. Monetary policies were indeed quite effective in curing the balance-of-payments deficits, but at the same time they played the role of accentuating cyclical movements of the economic activities. This outcome was not inevitable, however, because the cyclical movements of economic activities would have been mitigated if the exchange rates had been managed with more flexibility. Professor Tatemoto attempts, I think, to emphasize that the balance-of-payments policies actually destabilized the economic activities around the long-run growth path in order to supplement the growth policy. I quite agree with Dr. Krause in his observation that the Japanese government intentionally underestimated the growth rate and hence tax revenues at the stage of forming the budget plan. This is particularly true for the official short-term forecast made at the beginning of the fiscal year. But this again is a part of the growth policy.

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There seems to be no difference of views between Professor Tatemoto and Dr. Krause concerning the assessment of the growth policy. There exists a slight difference of emphasis, however, as to whether the growth was led by exports or by investments. I would support Professor Tatemoto's view that it is theoretically not very meaningful to distinguish the two types, as exports and investments are both jointly dependent variables. Unless there exists a certain exogenous change of a considerable scale whose effect falls upon either one of the variables, it will not be possible to identify the causal relationships. Indeed, in selecting the strategic industries to which low-interest-rate policy was applied, those industries having highest growth rates in world demand and those having highest potentialities in raising productivity were given a high priority. Thus, both ex ante and ex post investments were closely geared to the development and the structure of world markets. I would call such a growth pattern the "export-capturing growth" instead of using the somewhat passive word "export-led."

Another aspect which I should like to emphasize is the role of the balance-of-payments adjustment under the fixed exchange rate system in the income-multiplier process. Assume, for example, that either exports or investments experience an autonomous increase of the same magnitude. If we neglect the balance-of-payments constraint, the two changes would produce similar time paths of dynamic multipliers. If there is the balance-of-payments adjustment working through the multiplier process, which keeps the balance of payments intact, then the export multipliers must be larger than the investment multipliers. A classical example of showing this in a macro-economic framework may be found in Rhomberg [3]. Macro-econometric models of the Japanese economy possessing the balance-of-payments adjustment mechanism are presented in [1] and [2], both of which have shown that the long-run export multiplier is several times larger than the investment multiplier. This seems to suggest the importance of exports in the process of development for an economy with relatively unutilized resources and a vulnerable balance-of-payments structure.

Finally, I do not have much to argue about the question of unreasonably rapid growth as a source of world instability. Theoretically speaking, a rapidly growing economy will benefit others by transmitting the benefits of growth, provided that the pattern of growth is not "anti-trade biased," i.e., biased towards import-competing industries. This statement presupposes, of course, that there is no problem of adjustments. There are two kinds of adjustments in the present context, however, that must be taken into account. One is the balance-of-payments adjustment, and the other is the adjustment of resource allocation. Even when the multilateral balance-of-payments adjustment mechanism is working smoothly, a sudden and big increase in exports of one country may put the rest of the world in hardship. Similarly, the necessity of rapidly changing the resource allocation will cause a temporary loss of welfare in individual