"THE ECONOMIC CONSEQUENCES OF THE FRANC POINCARE"

by

Barry EICHENGREEN*
Charles WYPLOSZ**

N° 86 / 26

* Barry EICHENGREEN, Harvard University and CEPR

** Charles WYPLOSZ, INSEAD, Fontainebleau and CEPR

Director of Publication :

Charles WYPLOSZ, Associate Dean
for Research and Dévelopment

Printed at INSEAD,
Fontainebleau, France

The Economic Consequences of the Franc Poincaré

Barry Eichengreen

Harvard University
and CEPR

Charles Wyplosz

INSEAD, Fontainebleau
and CEPR

September 1986

Work on this paper was begun during Eichengreen's visit to the Institut National de la Statistique et des Etudes Economiques. A fellowship from the French Ministry of External Affairs and a Fulbright Grant made this visit possible. We are grateful to INSEAD for financial support, to Robert Levy for exceptionally capable assistance, and to the participants in the Harvard Economic History Workshop for helpful comments.

I. Introduction

The macroeconomic performance of the French economy in the 1920s contrasts sharply with cyclical experience in the rest of the industrialized world. French gross domestic product and industrial output grew with exceptional vigor over the first half of the 1920s (see Table 1).[1] After a recession in 1926-27 and despite a noticeable deceleration in the rate of economic growth, through the end of the decade the French economy continued to expand at a rate significantly in excess of the international average. Well into calendar year 1930, France remained immune to the effects of the Great Depression, and even in 1931 the downturn remained moderate compared to other parts of the world. But once the full effects of the Depression were felt, its impact in France was exceptionally severe; as late as 1938 gross domestic product had not recovered to 1931 levels.

Accounts of the interwar period attach more weight to the exchange rate than to any other variable affecting the French economy's macroeconomic performance. Histories of the period 1919-1926 are dominated by "the battle of the franc," when financial difficulties culminating in the loss of 80 per cent of the currency's external value greatly stimulated the export industries and macroeconomy. The period 1926-1931 is characterized as the golden era of the "franc Poincaré," when exchange-rate stabilization at an undervalued parity enhanced the competitiveness of French exports, stimulating growth through the end of the decade and insulating the economy from the onset of the Great Depression. Then successive devaluations of other major currencies starting in 1931 rendered the franc overvalued and greatly exacerbated the impact of the slump on French industry and trade, largely accounting for the singular depth and long duration of the French Depression.

Typically monetary policy is credited with driving the exchange rate and the French economy over the decade ending in 1930. Fiscal policy plays a role only insofar as it influences money supply. In conventional accounts, the period through the summer of 1926 is marked by real and nominal exchange rate depreciation due to excessive money creation. Real depreciation stimulated the French economy for reasons related to both aggregate demand and aggregate supply. On the supply side, the rise in producer prices exceeded the rate of wage inflation, reducing unit labor costs and thereby encouraging firms to

increase employment and production. On the demand side, the rate of exchange-rate depreciation exceeded the rate of domestic inflation, enhancing the competitiveness of exports and switching expenditure toward French goods. The period after 1926 is marked by stabilization of the franc at an undervalued rate. Stabilization, by eliminating inflation and reducing nominal interest rates, increased the demand for money, which, under France's gold standard rules, could only be obtained by running a balance-of-payments surplus and importing reserves.[2] Hence the franc's undervaluation continued to stimulate exports after 1926. In this conventional view, the French economy's expansion in the decade ending in 1930 is a classic instance of export-led growth.

In this paper we reassess the cyclical performance of the French economy in the 1920s, focusing particularly on the period 1926-1931 and on France's resistance to the Great Depression. Our analysis of French macroeconomic performance differs from the conventional view. We find strikingly little support for the export-based explanation of French economic growth after 1926. While French exports as a share of GDP turn down as early as 1928, the economy continues to expand for several subsequent years. Investment, not exports, emerges as the proximate source of the French economy's resistance to the Great Depression. And fiscal policy emerges as the major determinant of French investment spending. In effect, we argue for a more balanced view of the roles of monetary and fiscal policies in French macroeconomic fluctuations over the decade 1921-1930.

Throughout the paper, our discussion of the links between French fiscal policy and investment stresses the resource flow or classic crowding-in effects of observed reductions in the budget deficit. Eliminating the fiscal deficit and moving the budget into successively larger surpluses made available to private investors an increasing proportion of domestic savings. There exists an alternative explanation which emphasizes instead Poincaré's reputation for financial orthodoxy, according to which Poincaré's return to power removed the spectre of financial uncertainty, prospective future budget deficits, and large-scale capital levies, igniting a massive capital inflow that reduced the required rate of return on capital and stimulated investment. In fact, the two hypotheses are compatible, as we explain below. Our empirical analysis suggests, however, that classic crowding in due to current budgetary measures, rather than confidence-induced capital inflows due in part

to expected future budgetary measures, was the critical determinant of the French investment boom.

In the course of challenging the traditional interpretation of French macroeconomic trends in the 1920s, we touch on several issues of more general interest relevant to contemporary experiences with fiscal stabilization. We provide an explicit analysis of the effects of a fiscal contraction in a perfect-foresight model of an open economy in which the government budget is linked to stocks of productive capital and foreign debt, and in which fiscal policy has an impact on employment due to inertia in labor markets. Previous investigators have studied fiscal policy in the presence of wage and price rigidities but in static models without public sector and economy-wide budget constraints (Mundell, 1963; Fleming, 1962; Sachs, 1980). Dynamic models have been developed but without capital accumulation (Branson and Buiter, 1983; Sachs and Wyplosz, 1985; Cuddington and Viñals, 1986a, 1986b). Investigators working in the disequilibrium tradition combine wage and price rigidities with capital accumulation, but only under extremely restrictive assumptions about dynamics (Neary and Stiglitz, 1983). In this pages, we integrate the essential features of these models into a more general analytical framework.

II. French Economic Performance, 1921-1931

Historical accounts of the French economy in the years 1921-30 typically divide the decade into three segments: the period of inflation from 1921 through mid-1926, the period of stabilization from Poincaré's return to power in July 1926 through the 1927 recession, and the period of renewed growth through the end of 1930. The decline of the franc in the first half of the twenties is credited with subsidizing exports and promoting investment by lightening the burden of fixed charges (Kemp, 1972, p.97; Bernard, 1975, p. 180; Jackson, 1985, p. 11). Establishment of the franc Poincaré in the second half of the decade, "by slightly undervaluing the currency," is credited with stimulating "an export-led boom to round off the period of postwar prosperity" (Kemp, 1972, p.84). The Great Depression has relatively little impact on France as late as 1930 chiefly because of exchange-rate undervaluation (Kemp, 1971, p. 89; 1972, p. 100).[3]

To assess the role of the exchange rate in these developments, it is first necessary to have an adequate measure of its movement. We therefore

contruct quarterly time series for the real and nominal effective exchange rates for the period 1922-1937.[4] The nominal effective exchange rate is a weighted average of bilateral rates against France's trading partners, with trade shares serving as weights. The real effective exchange rate is the product of the nominal effective rate and the ratio of foreign to domestic prices. Both effective exchange rates are displayed in Chart 1.[5]

Chart 2, where exports in constant 1929 prices are plotted along with the real effective exchange rate, confirms that the real exchange rate had powerful demand-side effects.[6] But although persistent real depreciation was accompanied by steady export growth through 1926, post-1927 experience is inconsistent with the export-based interpretation of the French economy's subsequent expansion. Despite the real exchange rate's maintenance at its peak level through 1930, export volume fell in 1929, reflecting the decline in world incomes due to the onset of the Depression and the imposition of trade restrictions abroad.[7] The export share of GDP fell even earlier, in calendar year 1928. While exchange-rate depreciation may have prevented exports from declining even more rapidly than this, the extent and even the very fact of their decline suggests that the impact of real depreciation on export demand cannot by itself account for the persistence of French economic growth after 1928.[8]

To see whether these demand-side effects were accompanied by supply-side stimuli, we consider in Chart 3 two measures of real labor costs: the nominal wage deflated by wholesale and retail price indices, respectively labelled the real producer and real consumer wage. While each index includes both traded and nontraded goods, the wholesale price index places a heavier weight on traded-goods prices.[9] Since the profitability of traded goods production is particularly relevant to the export-led interpretation of the French economy's growth, we focus initially on money wages relative to wholesale prices as a measure of the real wage. Although Chart 3 confirms that nominal wages lagged wholesale prices during the 1922-26 inflation, it indicates also that much of this reduction in real producer wages was eroded within a year of stabilization.[10] Once inflation was halted in 1926, the franc appreciated over the second half of the year and prices declined, albeit more slowly than the exchange rate recovered. As prices fell, money wages lagged behind, and by 1927-III the relationship between wages and wholesale prices had been restored to 1923 levels. By 1928 the franc no longer provided the producers of traded

goods an incentive to expand export supplies. Thus, it does not appear that the franc's depreciation had long-lived supply-side effects.

This emphasis on supply-side considerations is predicated on the notion that the real producer wage influenced the level of employment, because employers adjusted hiring to equate the cost of labor and the value of its marginal product. As evidence on this relationship, Chart 4 presents Galenson and Zellner's (1957) estimate of French unemployment along with our proxy for the real producer wage. While this estimate of the unemployment rate is far from definitive, even with a generous margin for error it would appear that the real producer wage and unemployment tended to move in the same direction. Although the 1927 recession, when firms apparently were demand constrained, is a notable exception, the correspondence between the real producer wage and unemployment is generally consistent with our interpretation.

The finding that the franc's depreciation failed to have long-lived supply-side effects contrasts with experience elsewhere in Europe both in the first half of the 1920s and after 1931. In both instances, nominal depreciation tended to reduce real wages and have a sustained impact on unit labor costs.[11] Only in France in the mid-1920s was the impact of nominal depreciation on real wages not sustained. The reason for the contrast, Chart 3 suggests, is not necessarily any exceptional flexibility of the French labor market, but that the Poincaré stabilization initiated a large fall in the nominal exchange rate and in prices which largely neutralized the implications for aggregate supply of the preceding depreciation.

Thus, if the franc Poincaré insulated France from the initial effects of the Great Depression, it must have worked through different channels than those emphasized in simple aggregate-supply-aggregate-demand analyses. One possibility is that it had major sectoral effects. It is true that all sectors of the economy did not share equally in France's initial immunity to the Great Depression. Textiles and autos did relatively poorly while engineering machinery did relatively well.[12] The general pattern seems to favor investment-goods over consumer-goods industries. Existing accounts provide no guidance, however, as to why exchange-rate changes should have had such differential effects.

To shed further light on the behavior of investment-goods industries, Chart 5 and Table 2 decompose GNP into consumption, investment, government spending and the current account of the balance of payments. The share of investment in GNP rises rapidly toward the end of the 1920s, from 14 per cent in 1927 to nearly 21 per cent in 1930 and 19 per cent in 1931. In comparison, the current account moves only slightly, from a surplus of three per cent of GNP in 1926 to balance in 1930. The direction of its movement is in fact inconsistent with the hypothesis that the growth of net exports provided the stimulus for expansion. Clearly, the "French boom" of the second half of the 1920s was investment-led expansion, not export-led growth. Insofar as France resisted the onset of the Depression, credit lies with the buoyancy of investment rather than with exports.

Chart 6 depicts the government budget balance as a percentage of GNP. The budget moves from substantial deficit in the immediate postwar years to balance by 1925-26 and then into surplus which peaks as a share of GNP in 1929. The correspondence between the budget surplus, the real effective exchange rate and the share of investment in GNP indicates the need to explore the links between these variables.

These shifts in the composition of demand between exports, investment and government spending should have been promoted by the changes in relative prices underlying the time series in Chart 3. As noted above, the rise in the ratio of retail to wholesale prices after 1927 (shown explicitly in Chart 7) implies an increase in the relative price of nontraded goods which should have shifted resources out of the production of exportables and into the home goods sector. This relative price appears to explain how the French economy accomodated the fall in export demand associated with the onset of the Depression abroad without significantly reducing the level of economic activity. At approximately the same time the onset of the Depression was reducing foreign demands for French exports, the rise in the relative price of nontraded goods at home was transfering resources out of the production of exportables and into the production of nontradables.

This reallocation of resources cannot be viewed as a passive response to the Depression, however. Were this the case, one would expect the traded-nontraded goods price to move concurrently with or to follow the decline in export demand. In fact, the fall in the relative price of traded goods led by

a year the decline in the export share of French GNP. This suggests the need to analyze supply conditions at a more disaggregated level.

This review of French economic performance in the 1920s identifies two central questions. First, why did the price and production of French exports fall after 1927 despite the maintenance of a depreciated exchange rate? Second, what accounts for the current surge in domestic investment? We take up these questions one at a time in the next two sections.

III. Export Growth and Stabilization: A Franco-Scandinavian Model

The relative price of traded and nontraded goods better tracks the path of French exports than does the real exchange rate (the relative price of imports and exports). Clearly, a one-sector model that fails to distinguish between the production of traded and nontraded goods is incapable of capturing key aspects of French economic performance in this period.[13]

The distinction between traded and nontraded goods has been popularized by Scandinavian economists (e.g. Aukrust, 1977; Edgren, Faxen and Odhner, 1969). In the Scandinavian model, wages are tied to the prices of traded goods.[14] Chart 3 suggests, however, that in the 1920s French wages were more closely linked to the cost of living inclusive of the prices of nontraded goods. Our model therefore departs from the Scandinavian approach in its specification of wage determination, and in addition by allowing the overall level of employment to be endogenously determined.[15]

We start with the small country assumption, which implies that rest-of-world prices of traded goods P* together with the exchange rate determine the domestic price of traded goods P_T. (We relax the assumption of parametric export prices in the next section.)

$$P_T = eP^* \qquad (1)$$

where the exchange rate e is the dommestic price of one unit of foreign currency. In what follows, P^* is normalized to unity. Throughout, T and N subscripts denote traded and nontraded goods, respectively.

We assume that the production of nontraded goods is less capital intensive than the production of tradeables. For simplicity, nontraded goods are characterized as Ricardian commodities, requiring inputs of labor alone. (All our conclusions carry over to the general case, so long as nontraded goods remain relatively labor intensive.) Perfect competition, constant returns to scale and marginal cost pricing together imply that the price of nontraded goods is proportional to the wage W. Normalizing labor productivity to unity:

$$W = P_N \tag{2}$$

Traded goods, in contrast, are Heckscher-Ohlin commodities, produced using both labor and an exogenously fixed stock of capital. (We relax the assumption of a fixed capital stock in the next section.) Given a production function f(L,K) and the assumption of perfect competition, employment in the traded goods sector is adjusted to equate the wage with the value marginal product of labor ($VMPL_T$):

$$W = P_T\, f_L(L) = e f_L(L) \qquad f_L<0 \tag{3}$$

where $F_L = \partial f/\partial L$. Inverting (3) yields the derived demand for labor in the traded goods sector:

$$L_T = f(W/e) \qquad f'<0 \tag{4}$$

Under the small country assumption, domestic producers of traded goods are never constrained in the quantities they sell: while domestic demand depends on relative prices and income, any excess of domestic supply over demand is exported to foreign markets. Domestic producers adjust production and hiring to be on their labor demand curves. In Figure 1, employment in the production of traded goods is the distance PL_T. This distance is determined by the intersection of the employment schedule $VMPL_T$ with the wage.

In contrast to the demand for traded goods, which is perfectly elastic at world prices, the demand for nontraded goods depends on domestic income (which is proportional to total employment L_T and L_N) and on their relative price P_N/P_T. The (uncompensated) price elasticity of demand for nontraded goods appears in Figure 1 as the D_N schedule, which (under the Ricardian assumption)

is also the derived demand for labor in the nontraded goods sector. Employment in the production of nontraded goods is the distance OL_N:

$$L_N = g(P_N/P_T) = g(W/e) \qquad g'<0 \qquad (5)$$

Aggregate labor supply is constant and represented in Figure 1 by the length OP. Unemployment is the distance to L_TL_N. Taking the exchange rate as exogenous, the model is closed by a wage determination rule. We assume that labor mobility equates wages across sectors and, as suggested by Chart 3, that economy-wide wages respond with a lag to the cost of living:[16]

$$W_t = \gamma e_{t-1} + (1-\gamma))\ P_{N,t-1} \qquad (6)$$

We can use this model to analyze the effects of a permanent, unanticipated depreciation of the exchange rate.[17] Depreciation raises the VMPTL schedule in Figure 1. Given the lagged response of nominal wages to the cost of living, the real producer wage in the traded goods sector falls ($d(W/e)<0$), and employment in that sector expands to OL'_T. Since $W/e = P_N/P_T$ (from eqs. 1 and 2), depreciation switches domestic demand toward nontraded goods. Both the relative price and the income effects shift the D_N schedule upwards, increasing the demand for labor in the nontraded goods sector. In the period of the depreciation, unemployment falls from L_TL_N to $L'_T\ L'_N$. In the subsequent period, wages respond to the initial rise in the cost of living, restoring the equality $W = P_N = P_T = e$ and returning employment to its initial level. In Figure 1 this is shown as an upward shift in the $W = P_N$ schedule.

These dynamics are depicted in Figure 2. A one-time depreciation moves the system from α to 1; with the economy to the right of the 45 degree line, the real wage has been reduced and the level of employment has been correspondingly increased. With no further change in the exchange rate, the wage rises in the next period to α', restoring employment to its initial level.

The model can be used to interpret several macroeconomic features of the 1920s. According to leading accounts of the period (e.g. Sauvy, 1984), the years 1921-26 were dominated by a series of unanticipated depreciations.[18] Each time the exchange rate depreciated, domestic prices initially lagged

behind. Prices and wages subsequently responded, however, to increases in the exchange rate. In Figure 2, the path α-1-2-3-4-5 is meant to capture these aspects of French experience. As in Chart 3, the real wage (nominal wage deflated by the cost of living) initially falls but remains stable in the face of successive depreciations. (In contrast, the path α-1'-2'-3'-4'-5' shows the effects of accelerating depreciation.) As in Chart 7, the CPI falls relative to the WPI, since nontraded goods, whose prices depend heavily on the now lower real wage, are more heavily represented in the CPI. As in Chart 4, depreciation is associated with a decline in unemployment. As in Chart 2, depreciation is accompanied by a rise in exports.

The effects of terminating inflation and pemitting the exchange rate to appreciate before returning the franc to the gold standard (the policy followed between Poincaré's return to power in the Summer of 1926 and the de facto stabilization at the end of the year) are depicted in Figure 2 by the path 5'-6'-α". Due to the response of wages to lagged prices, real wages rise above their initial level following stabilization, and employment temporarily falls. As in Chart 4, stabilization is associated with transitional unemployment, and, as in Chart 2, the volume of exports tends to decline.

Thus, a simple model provides a coherent explanation for many of the dominant macroeconomic characteristics of the French economy in the 1920s, including the declining role of exports in French economy following the Poincaré stabilization. What remains to be explained is the buoyancy of investment in the post-stabilization era. In the next section, we therefore imbed this Franco-Scandinavian framework in a dynamic, forward-looking model of investment in the open economy.

IV. Investment and Fiscal Stabilization: A Dynamic Model

In this section, we explore the links between the 1926 stabilization, the subsequent decline in the export share of GNP, and the surge in investment spending which was the proximate source of the French economy's resistance to the onset of the Great Depression. The previous section explains the decline in the export share as a delayed effect of exchange-rate stabilization. In this section, we integrate that explanation with an analysis of the investment response.

The model providing the basis for the analysis is summarized in Table 3. As in the Franco-Scandinavian model of the previous section, the domestic economy produces both traded and nontraded goods, traded goods using capital and labor, nontraded goods using labor alone. As in the previous section, the price of nontraded goods is proportional to the wage. But in contrast to the previous section, three distinct commodities are consumed: importables, exportables and nontraded goods (with the domestic economy specialized in the production of the last two). Demands depend on two relative prices, the price of nontradables relative to exports (P_N/P_E) and the price of imports relative to exports (eP^*/P_E). Exportables are the numeraire throughout. We adopt the semi-small-country assumption, that the world price of imports is given exogenously by the rest of the world, but that domestic supplies are capable of influencing the world price of exports. We define the real exchange rate as:

$$\lambda = eP^*/P_E \tag{7}$$

and the relative price of nontraded goods as:

$$\lambda_N = P_N/P_E \tag{8}$$

In contrast to the Franco-Scandinavian model, the real exchange rate, investment and the adjustment of government spending are now endogenously determined.

Real GDP, in units of exportables, is given by eq. 9 in Table 3. Real expenditure, given by eq. 10, is a function of real disposable income and real wealth Ω. Disposable income as a determinant of expenditure can be jusitified on the basis of liquidity constraints; thus, our expenditure function incorporates both Keynesian and permanent income features.

As in the previous section, the supply of traded goods is perfectly elastic at the prevailing wage (eq. 12), with the wage adjusting gradually over time to eliminate excess supply or demand in the labor market (eq.15). Domestic expenditure is the sum of the demands of the private (eq. 13) and public (eq. 14) sectors, whose allocations across commodities are derived from instantaneous Cobb-Douglas utility functions.

The real exchange rate λ adjusts instantaneously to clear the market for exportables (eq. 17). The demand for exportables is the sum of private (eq. 18), public (eq. 19) and foreign (eq. 20) consumption plus domestic investment (eq. 17). Capital accumulation is a function of Tobin's q (eq. 21). Gross investment spending differs from capital accumulation by an allowance for capital depreciation at rate δ (eq. 22).

Domestic debt and equity are assumed to be perfect substitutes for one another but imperfect substitutes for foreign assets. Foreigners do not hold domestic assets. These assumptions highlight the role of the (exchange) risk premium in rendering domestic residents willing to hold increasing quantities of domestic assets. They are designed to capture the idea that increases in public debt raise the danger of a capital levy on all domestic assets, a policy option much discussed in France in the 1920s.

Portfolio balance determines the relationship between the domestic real interest rate, foreign real interest rate and real exchange rate:

$$\frac{B_t + q_t K_t}{\lambda_t B^*_t} = b\left(r_t + \frac{{}_t\lambda_{t+1} - \lambda_t}{\lambda_t} - r^*\right) \qquad (24')$$

where B_t is the real value of public debt (in units of exportables) and B^*_t the net real value of foreign assets held by domestic residents. (Eq. 24 in Table 3 is the inverted version of eq. 24'.) The right-hand side of eq. 24' is the yield differential between domestic and foreign assets (denoted z).[19] We assume perfect foresight regarding the evolution of the real exchange rate, so

${}_t\lambda_{t+1} = \lambda_{t+1}$.

The perfect substitutability of domestic debt and equity implies that the real yield on one period bonds r_t equals dividends plus capital gains on shares. This arbitrage condition is given by eq. 23. We assume perfect foresight regarding the equity prices q which determine capital gains. Dividends are assumed to equal the marginal productivity of capital.

Eq. 25 is the government budget constraint. The growth of public debt equals the excess of government spending G over the sum of net taxes T and

debt service rB (all in units of exportables). Changes in fiscal policy take the form of changes in government spending, holding taxes constant.

Our neglect of the monetary sector in general, and of money financing of the deficit in particular, in our analysis of the post-1926 situation can be justified on two grounds. First, under the gold standard the supply of money was in principle determined exclusively by money demand. Given a credibly pegged exchange rate, nominal interest rates were determined exclusively by interest rates in the rest of the world. Changes in the domestic credit component of the monetary base therefore should have had no implications for total money supply. Second, after 1926 the Bank of France functioned under new regulations which prohibited it from monetizing government budget deficits.

To analyze the post-1926 situation in France, we perform the following experiment. Starting from steady-state equilibrium in period zero, we cut government spending so as to reduce the steady state value of public debt from B_o to $\bar{B}$. The real debt is assumed to evolve according to:

$$B_t = B_{t-1} + \mu(\bar{B} - B_{t-1}) \qquad (26)$$

Since taxes are held constant, eqs. 25 and 26 together determine the path of public spending.[20]

Given its size, the model in Table 3 cannot be solved analytically. Instead, we calibrate it using data for the 1920s, linearize it around the steady state, and simulate it under the assumption of perfect foresight. Parameter values and initial conditions for endogenous variables are given in Tables 3 and 4. While we have attempted to use historical data to guide the selection of parameter values, any attempt at calibration can only approximate the properties of the economy being modeled. We therefore urge caution in interpreting the simulation results; they are meant only to illustrate the properties of the simulation model and indicate the general orders of magnitude of the result of our fiscal policy experiment.

Our discussion emphasizes three aspects of the simulation results in Table 4: the impact of the change in fiscal policy on investment, on the real exchange rate, and on the relative price of nontraded goods. We are

interested in whether the simulation captures the surge in investment after 1927, the maintenance of the real exchange rate at low levels, and the early rise in the relative price of nontraded goods.

The simulation generates a real depreciation on impact followed by a relatively flat real exchange rate path. As the fiscal contraction reduces domestic demand, an incipient excess supply of exportables develops and is eliminated through a fall in their relative price, which increases export sales. The brevity of the 1927 recession may be explicable in part on the basis of this expenditure-switching effect.

Thus, we find that not only monetary policy but fiscal policy as well are critical for understanding the post-1926 real exchange rate path. Had the real depreciation of the period 1922-26, so prominent in Chart 2, resulted simply from nominal exchange rate overshooting in response to monetary expansion and inflation prior to the Poincaré stabilization (the Dornbusch (1976) mechanism), one would expect the real exchange rate to recover following monetary stabilization; instead, the real exchange rate remains at its new higher level, suggesting that the domestic expenditure effects of fiscal contraction played a dominant role in its post-1926 path. (The correlation between the government budget deficit and the real exchange rate is also evident in Chart 6.) Thus, the real depreciation of the franc, rather than a clever ploy by French monetary policy makers, should be seen as a consequence of the fiscal reforms which eliminated the budget deficit.

The simulation also generates a surge in investment like that observed in France after stabilization. Investment rises as a result of a jump in Tobin's q.[21] Following its initial rise, q declines continuously toward its steady state level, and investment falls gradually. The behavior of q is a consequence of the impact of public debt reduction on interest rates and arbitrage among financial assets. The real exchange rate depreciates on impact, after which it rises slowly; so long as it is rising the domestic interest rate must fall relative to the yield on foreign assets. Over time, a fall in the outstanding stock of domestic debt reduces the interest rate domestic residents require in order to hold that debt, reinforcing this effect. Since arbitrage equalizes the rates of return on domestic debt and equity, the lower interest rate on debt implies capital losses on equity, causing q to fall over time. For q to fall over time, it must rise on impact,

providing the initial stimulus to investment. While the contractionary fiscal initiative results in crowding in of investment as in simple income-expenditure models, in our framework it results indirectly from the relationship between real interest rates, real exchange rates, and Tobin's q.

The one aspect of the simulation that does not conform to historical experience is the simulated decline in the price of nontraded goods relative to the price of exports. The reason for this result is our assumption that investment spending falls exclusively on exportables while government spending is distributed among exportables, importables and nontraded goods. In the simulation, as government spending falls and investment rises, expenditure tends to be switched away from nontraded goods, resulting in a modest decline in their relative price. It would be straightforward to alter the specification to better track this aspect of historical experience.

Finally, note the simulated path of GDP in the final column of Table 4. The reduction of government spending is contractionary on impact, but output immediately begins to recover. In the long run, the larger capital stock which results from cumulated investment sustains an increased volume of production. The fiscal multiplier is positive in the short run, negative in the long run. Over the span of time of concern to us here, 1926 to 1931, the reduction in government spending probably remained contractionary, reducing the rate of growth of the French economy. This is consistent with the deceleration in the rate of French economic growth between 1921-1926 and 1927-1930 (see the first two rows of Table 1). At the same time, the fiscal contraction switched demand toward domestic sources, namely investment, reducing the economy's dependence on foreign demand and insulating the economy from the initial effects of the Great Depression.

V. Further Evidence

The model of Section IV, while successfully replicating the critical features of French macroeconomic experience after 1926, incorporates various restrictive assumptions. In this section we provide further evidence in support of the specification.

Our specification of investment highlights the role of Tobin's q. Chart 8 illustrates the close correlation between q and French investment during the

interwar years, but suggests that investment depended not on current but on lagged real share prices.[22] This is inconsistent with the early formulations of the q theory of investment, as proposed by Tobin (1969) and developed by Abel (1979) and Hayashi (1982), in which investment depends solely on current q, which incapsulates all relevant information about the current and expected future profitability of additions to the capital stock. However, a variety of studies of the postwar period have found, as in Chart 8, that lagged q has more explanatory power than current q, leading Fischer (1983), Kydland and Prescott ( ) and Ueda and Yoshikawa (1986) to incorporate order and delivery lags into the q theory of investment and to derive estimating equations in which current investment depends on lagged q.

Empirical versions of our investment equation appear in Table 5. The results confirm that lagged q dominates current q as a determinant of investment.[23] The role of lagged q in determining investment plays a central role in our interpretation of French macroeconomic performance on the eve of the Great Depression. The buoyancy of the French economy in calendar year 1930 is primarily a buoyancy of investment spending, which remains high in 1930 because q was high in 1929. In other words, the investment boom continued into 1930 because of lags in the ability of firms to order, receive delivery and install capital goods and equipment that they would have wished to obtain in 1929 when stock prices peaked. The French economy was exceptionally resistant to the onset of the Depression because demand had been switched toward this domestic source - investment - and away from foreign sources precisely when foreign markets collapsed.

How general was this surge in investment spending? Table 6 displays investment trends in agriculture, three leading manufacturing industries, construction, transportation, services and commerce. Investment rose in all sectors but transportation in 1927 and across the board in 1928 and 1929. In 1930 investment fell significantly only in the textile industry (which produced luxury goods for export and therefore was overwhelmed by the onset of Depression abroad), declining marginally in agriculture and commerce as well. In 1931, in contrast, there was a dramatic fall in investment in every sector except transportation, where developments reflect the relative stability of government spending. Thus, the investment surge highlighted in our account of post-1926 French macroeconomic trends is impossible to explain in terms of

shocks to particular sectors, and surely resulted from economy-wide developments such as changes in the stance of fiscal policy.

In our model, fiscal policy is linked to investment via Tobin's q. Table 7 documents the influence of fiscal policy on q. In the first two equations, q (and, according to Table 5, investment) responds positively to the budget surplus. Evidence of serial correlation led us to add additional regressors to the equation. Neither the money supply nor its rate of growth (whether measured in real or nominal terms) significantly influenced real share prices or reduced the extent of autocorrelation. In contrast, the real exchange rate was statistically significant, reduced the extent of autocorrelation, and dominated the fiscal policy measure, as shown in the third line of Table 7. This is evidence against the fiscal policy-q relationship only if the real exchange rate is not itself a function of fiscal variables. Our model predicts that Tobin's q and the real exchange rate should be jointly determined by fiscal policy. Table 8 confirms that this was the case empirically. According to the coefficient on the budget surplus, fiscal contraction led to real exchange rate depreciation. We enter as additional regressors the rate of real money growth and the rate of real money growth interacted with a dummy variable for the fixed exchange rate period to allow the real exchange rate to respond to both monetary and fiscal policy. Adding monetary policy confirms that both monetary and fiscal policies influenced the path of the real exchange rate, as argued above, but does nothing to undermine the real exchange rate's dependence on the budget surplus.

Finally, we attempt to test our explanation for the post-1926 investment surge against a competing interpretation. While our explanation for the investment boom stresses observed reductions in the budget deficit and the classic crowding-in effects of contractionary fiscal policy, the alternative emphasizes the impact on confidence of Poincaré's reputation for financial orthodoxy. According to the reputational argument, Poincaré's return to power removed the spectre of continued financial uncertainty, prospective future budget deficits, and large-scale capital levies. This interpretation holds that once confidence was restored, capital flight came to end, reducing the required rate of return on capital and stimulating investment. Thus, confidence (and in particular confidence-induced capital inflows) rather than the resource flow or classic crowding in effects of contractionary fiscal policy supposedly explains the investment boom. Since Tobin's q captures

market expectations, the confidence interpretation is not incompatible with our's; it simply differs in asserting that the rise in stock prices cannot be explained solely by contemporary observable policy measures.

Attempts to test the confidence argument fail to turn up evidence in its support. Capital inflows, under the alternative view, should be comprised of both a component reflecting observed policy measures and a residual component reflecting confidence. Since the equation includes both observed policy measures and actual capital inflows, the confidence argument can be tested by examining the coefficient on the capital inflows variable.[24] In the last regressions in both Tables 7 and 8, the capital inflows proxy uniformly enters in significantly. Thus, we find no support for the alternative view.

VI. Conclusion

In this paper we have assembled evidence which contradicts the standard view that the undervalued Franc Poincaré, by boosting exports, succeeded initially in insulating France from the Great Depression. Our own explanation emphasizes instead the role of investment growth as the proximate source of France's resistance to the onset of the slump. The traditional interpretation of this period has also tended to stress monetary factors, attributing undervaluation of the franc even after 1929 to a sustained period of inflation terminated by an abrupt monetary stabilization. We consider such a long-lasting monetary non-neutrality unplausible and focus instead on fiscal stabilization, which transformed the government budget from large deficit in the early 1920s to surplus after 1926. Real depreciation, the surge in stock prices and the attendant crowding in of investment spending are all shown to be consequences of such a fiscal stabilization. We do not wish to belittle the role either of monetary factors in the nominal depreciation,or of monetary finance of the budget deficits. But we wish to emphasize that the independent effects of fiscal policy have not been adequately acknowledged.

These effects are analyzed here using a model whith some relevance to current policy discussions in countries attempting to curb their government deficits and reduce their public debts. While we have not estimated the model, its key assumptions are supported by the data. In particular, the links between fiscal policy, the real exchange rate and Tobin's q are sufficiently well established that we see no need to involve the purely psychological

effects of Poincaré return to power when attempting to understand the macroeconomic sequel to that event. What mattered were Poincaré's policies, not merely his reputation.

FOOTNOTES

1. Data sources and variable definitions are provided in appendix A. The country data and weights used to construct "world GDP" in Table 1 are the same as in the effective exchange rate calculations described below.

2. Domestic credit creation was effectively precluded by prohibiting the Bank of France from engaging in expansionary open market operations or monetizing government budget deficits. See Eichengreen (1986).

3. These conclusions are representative of an extensive and growing literature. Surveys of the period, such as Fohlen (1966) and Ambrosi et. al. (1984), convey the same impression of the exchange rate's central role. Kindleberger (1973, p.63) argues that what he refers to as the "French boom" of the second half of the 1920s - an upswing which raised production to impressive levels compared to previous business cycle peaks and did not turn down until the second half of 1931 - was fed by undervaluation of the franc. Even Sargent (1983), not one normally inclined toward nominal variables as explanations for real economic trends, suggests that France remained prosperous in the wake of the Poincaré stabilization partially because of the undervaluation of the franc.

4. This is not the first nominal effective rate calculated for the interwar years. Redmond (1980) has constructed a nominal effective exchange rate for sterling in the 1930s, while Redmond (1981) presents nominal effective rates for several currencies, including the franc, for the period from 1929. However, his series for the franc is annual rather than quarterly and does not cover the portion of the twenties of particular interest here. We know of no previous attempt to calculate a real effective exchange rate for this period.

5. Detailed descriptions of the data are in appendix A. In appendix B we present the effective exchange rate series. Note that the nominal effective rate continues to vary even after France's return to gold because of further exchange-rate changes abroad. While small at first,

these variations increase in size with sterling's devaluation in 1931 and the dollar's devaluation in 1933.

6. Both series are measured on an annual average basis. An ordinary least squares regression corrected for first-order serial correlation yields:

$$\text{EXPORTS} = -2.17 + 0.74\ \text{REER} + 0.62\ Y^{*} \qquad \rho=0.48 \qquad \bar{R}^2 = 0.83 \qquad \text{DW} = 1.60$$
$$(3.89)\ (3.12) \qquad (3.68) \qquad (1.63)$$

where EXPORTS is Commerce Spécial (in millions of tons) from Sauvy (1884), p.338, col. 8, REER is the real effective exchange rate (calculated as in Chart 1, so that a rise denotes real depreciation), and Y* is the index of world industrial production (from London and Cambridge Economic Service, 1970), shown in Table 1. The data are annual and the estimation period is 1922-38. In the regression, all variables are entered in logs, with t-statistics in parentheses. ρ is the first order autocorrelation coefficient.

7. The pattern we describe in the text holds for exports of foodstuffs, raw materials and manufactured goods alike, except that raw materials exports fall in 1928, foodstuffs in 1929 and manufactures in 1930. The early downturn in exports of materials reflects the worldwide slump in primary commodity markets (Lewis, 1949), which even an "undervalued franc" was apparently unable to overcome.

8. Another channel through which the exchange rate conceivably might have influenced demand was import substitution. Even if the volume of exports fell after 1928 and the export/GNP ratio fell after 1927, depreciation could have stimulated domestic demand had expenditure on imports been switched toward home goods at an even faster rate. In fact, the trade balance deteriorates rather than improving over the period, indicating that imports declined less quickly than exports, which casts doubt on the import-substitution hypothesis.

9. For example, such nontraded goods as housing, the prices of which moved in a very different fashion due to rent control (Hawtrey, 1931), are included only in the retail price index. On the construction of these indices, see INSEE (1966).

10. The one exception to the general erosion of real wages during the inflationary era - the rise in real wages between the first and second quarters of 1924 - is itself explicable in terms of wage lag: the exceptional real wage increase of early 1924 took place in a period when the authorities succeeded in temporarily stabilizing the franc and actually engineering a price decline.

11. On the early 1920s in Europe, North America, Japan and the Antipodes, see Eichengreen (1986b). On European experience in the 1930s, see Eichengreen and Sachs (1985).

12. We have drawn disaggregated industrial production indices from League of Nations (various issues).

13. The importance of this distinction did not escape contemporary French economists such as Dessirier (1935), who calculated indices of profitability separately for industries producing traded and nontraded goods. In addition, Dessirier distinguished a third sector comprised of firms engaged in the provision of public services.

14. It is this focus on wage formation that leads us to emphasize our model's resemblance to the Scandinavian Model rather than the Dependent Economy Model of Salter (1959) and Swan (1960), which also distinguishes traded and nontraded goods.

15. To our knowledge, no previous model incorporates both these features, although the framework developed below bears some resemblance to those of Dornbusch (1974), Dornbusch (1980, pp.97-115) and Frenkel and Rodriguez (1982). Dornbusch's Dependent Economy Model implicitly the maintains the assumption of full employment however, while in Frenkel and Rodriguez (1982) output depends only on relative commodity prices.

16. Eq. (6) is a linear approximation around an initial position in which W, e and P_N all equal unity and γ is the share of traded goods in consumption.

17. A limitation of this framework is the absence of explicit treatment of the monetary sector. Depreciation of the exchange rate therefore must be taken as exogenous.

18. The lack of foresight regarding the evolution of the exchange rate, inflation and the money supply is justified on the grounds that changes in the rate of money growth were related to unanticipated changes in governments and Ministers of Finance. There were 11 cabinets in the period 1921-26 (Sauvy, 1984, Vol. I, pp.388-392).

19. In the limiting case of perfect substitutability, $db/dz = \infty$. The analysis which follows is based on the general case of imperfect substitutability. In the interest of simplicity, we suppress the Laursen-Metzler effect. However, permitting saving to be positively related to λ would have no effect on our simulation results.

20. Alternative deficit closing rules are discussed in Sachs and Wyplosz (1984). Nothing of importance hinges on particular specification adopted here since it is assumed that government spending falls on exportables, nontradables and imported goods in the same proportions as private spending.

21. By specifying investment solely as a function of q and eliminating any accelerator mechanism, we reduce the danger that an investment response to an autonomous recovery could be misconstrued as a cause of that recovery.

22. Note that the dependence of investment on real equity prices needs not suggest that the stock market was a significant source of liquidity for firms wishing to fund investment. (In fact, this was generally not the case in interwar France.) Rather, it reflects the impact on investment of assessments of the current and future profitability of additions to the capital stock relative to the cost of those additions, assuming only that the expectations of stock market participants are positively correlated if not necessarily representative of the expectations of investors as a whole.

23. Our preferred specification, eq. 2, provides support for a hybrid investment equation which combines the q theory with the accelerator. Such equations are sometimes justified on the grounds that some firms are liquidity constrained and are able to increase investment only when profits rise as a result of increased output.

24. Alternatively, we included a dummy variable for the years of Poincaré's government as another proxy for confidence effects. This variable failed to undermine the significance of the fiscal policy measure, was itself statistically insignificant, and generally entered with a negative sign.

Appendix A
Data Sources

1) Effective Exchange Rates

The effective exchange rates ware calculated as weighted averages of the exchange rates against France's major trading partners. The weights were based on the aggregate percentage of trade, including exports and imports but excluding reimports (Commerce Spécial) in the years 1923, 1927, 1932, 1935, 1938 of the major trading partners.[1] Major partners were defined as countries accounting for at least 1% of total French trade during the above five years, with the following exceptions:

1. Trade with French colonies was excluded (21.98% of total trade) because of the dominance of non-price factors and owing to the lack of reliable wholesale price indices for the colonies.

2. Trade with Brazil (1.26 % of total trade) was excluded because of lack of a reliable wholesale price index.

3. Trade with Sweden (0.87 % of total trade) was included because of its rapid growth over the period.

Trade weights for the intervening years were interpolated on a moving average basis.[2]

2) Exchange Rates

Where data are from the Statistique Générale de la France (1951), exchange rate quotations are the average monthly exchange rate in Paris. Where data are from the League of Nations Statistical Yearbooks,[3] the exchange rate was calculated as follows:

a) Pre 1931: Exchange rates against the dollar were converted to French francs by the dollar/franc rate in Paris.

b) 1932-Sept. 1936: Exchange rates quoted as a percentage of 1929 gold parities were converted into current nominal rates, multiplying by the 1929 gold parity of foreign currencies.

c) Post Oct. 1936: Exchange rates, as a percentage of 1929 gold parities, were converted by multiplying both the franc and foreign currency prices by their 1929 gold parities.

d) Exceptions: Egypt: exchange rate is quoted in terms of the pound sterling (E1 = .975 units of local currency).

3) Prices

To calculate the real effective exchange rate, the nominal effective exchange rate described above was multiplied by the ratio of foreign wholesale prices to French wholesale prices. Sources of the wholesale price data are described in (6) below. Foreign prices were weighted by the trade shares described above.

Owing to large relative price movements at the time of German monetary stabilization in 1924 and the dominant influence of political factors in France-Germany trade, the weight of the German exchange rate was set to zero for the period 1922-24. We recalculated the weights for the years before 1925 excluding Germany (which accounted for 4.2 percent of total French trade in 1924), and then included Germany in the weights for the period from 1925.

4) World Demand

Sources and methods of calculation are shown in Table 1. Of the original set of countries, Australia, Egypt, India and Argentina were omitted for lack of reliable data and weights were adjusted accordingly.

5) Trade

Annual volume of Imports and Exports: Commerce Spécial in millions of tons (Sauvy (1984), pp. 338).

6) Prices

Wholesale prices: Statistique Générale Index of 45 goods. Retail Prices: Sauvy,pp. 35-6, Tables 12 and 13. Share Prices: Statistique Générale Index of 300 share prices.

7) Output and Unemployment

Industrial Production: Statistique Générale Index. Unemployment: Galenson-Zellner unemployment rates for wage and salary earners in French manufacturing, mining and construction.

8) Wages

Nominal Wages: for the 1920s, daily wages from Sauvy (1984), pp. 378, Table 16; for the 1930s, index of hourly salaries from Sauvy (1984), pp. 377, Table 15. Note that this series excludes social security benefits and taxes. Real Consumer Wage: nominal wage deflated by retail price index. Real Producer Wage: nominal wage deflated by wholesale price index.

9) Money Supply

M1: Saint-Etienne (1983), monthly data.

10) Investment and Tobin's q

Cost of capital goods from Carré, Dubois and Malinvaud (1967), p. 258. This is a weighted average of the relative prices of output of mechanized industries (Col. 4) and building (Col. 5); with weights based on indices of the volume of investment in capital equipment (Col. 1) and building and public works (Col. 3). Investment share of GNP: Carre et al.(1967), p. 528.

$$\text{Tobin's } q = \frac{\text{Share Prices}}{\text{Wholesale Price Index}} \times \frac{\text{Wholesale Price Index}}{\text{Cost of Capital Goods}}$$

11) Government

Government Expenditure: Carré et al. (1975), p. 246, Col. 3; this includes reported expenditure in the budget of central government, departments and communes, including purchases of goods and services, expenditures on staff and transfer payments. Budget Surplus as a share of GNP: ratio of Budget

Deficit/Surplus (from INSEE, 1966) plus deposits made by the Government to the accounts of the Caisse Autonome d'Amortissement, all as a percentage of GNP. Consumption is derived from the National Income Identity.

$$C + I + G + (X - M) = Y$$

with the other items as defined above.

Footnotes of Appendix A

I. These are drawn from Republique Française, for the years 1923, 1927, 1932, 1935, 1938.

2. The methodology utilized is further discussed by Artus and Rhomberg (1973).

3. These are drawn from the yearbooks for 1926, 1929, 1931, 1935, 1936 and 1938.

NOMINAL&REAL EFFECTIVE EXCHANGE RATE (1929:1=100)

	NOMINAL	REAL
1921:4	41.4	75.3
1922:1	38.3	71.2
1922:2	37.3	68.4
1922:3	41.1	71.4
1922:4	45.1	75.2
1923:1	49.8	73.7
1923:2	48.0	71.8
1923:3	51.4	75.6
1923:4	53.0	75.1
1924:1	62.2	78.3
1924:2	52.6	72.1
1924:3	57.6	75.2
1924:4	59.0	75.8
1925:1	60.6	76.9
1925:2	63.6	77.0
1925:3	67.3	77.6
1925:4	79.1	83.6
1926:1	86.5	84.2
1926:2	96.0	87.0
1926:3	108.2	88.7
1926:4	107.3	102.1
1927:1	98.8	100.1

	NOMINAL	REAL
1927:2	100.3	101.0
1927:3	100.4	104.2
1927:4	100.3	107.1
1928:1	100.1	103.8
1928:2	100.2	102.5
1928:3	100.3	102.5
1928:4	100.2	102.1
1929:1	100.0	100.0
1929:2	99.6	100.4
1929:3	99.5	103.6
1929:4	99.2	104.8
1930:1	98.6	103.4
1930:2	98.3	107.5
1930:3	97.5	100.3
1930:4	97.1	102.1
1931:1	96.5	100.5
1931:2	96.5	99.9
1931:3	94.8	101.6
1931:4	88.6	96.4
1932:1	88.3	91.2
1932:2	89.4	90.4
1932:3	88.6	92.1

	NOMINAL	REAL
1932:4	87.6	91.4
1933:1	87.8	89.7
1933:2	85.9	86.5
1933:3	82.9	81.7
1933:4	81.2	80.7
1934:1	79.0	78.3
1934:2	77.7	78.6
1934:3	77.1	80.7
1934:4	77.1	83.3
1935:1	76.1	82.3
1935:2	72.1	75.9
1935:3	72.1	78.3
1935:4	72.1	77.3
1936:1	72.1	72.9
1936:2	72.4	72.9
1936:3	72.6	70.4
1936:4	94.4	74.5
1937:1	94.3	71.5
1937:2	97.8	74.8
1937:3	118.3	81.6
1937:4	131.2	88.2

REFERENCES

Abel, A. B. (1980), "Empirical Investement Equations: An Integrative Framework", Carnegie Rochester Conference Series 12 (Spring), pp. 39-91.

Ambrosi, C., M. Baleste and M. Tagel (1984), Economie Contemporaine, Paris: Delgrave.

Aukrust, D. (1977), "Inflation in the Open Economy: A Norwegian Model," in L. B. Krause and W. S. Salant (eds.), Worldwide Inflation, Washington, D. C.: Brookings Institution.

Artus, J.R. (1973), "A Multilateral Exchange Rate Model", IMF Staff Papers 20, pp. 591-611.

Bernard, P. (1975), La Fin d'un Monde, 1914-1929, Paris: Sevil.

Branson, W. and W. Buiter (1983), "Monetary and Fiscal Policy with Flexible Exchange Rates", in J. Bhandari and B. Putnam (eds), The International Transmission of Economic Disturbances, Cambridge: MIT Press.

Carré, J.J., P. Dubois and E. Malinvaud (1975), French Economic Growth, Stanford: Stanford University Press.

Cuddington, J.T. and J.M. Viñals (1986), "Budget Deficits and the Current Account: An Intertemporal Disequilibrium Approach", Journal of International Economics 21 (August), pp. 1-24.

Dessirier, J. (1935), "Secteurs "abrités" et "non abrités" dans le Déséquilibre Actuel de l'Economie Française", Revue d'Economie Politique (July-August), pp. 1330-1361.

Dornbusch, R. (1974), "Real and Monetary Aspects of the Effects of Exchange Rate Changes", in R. Z. Aliber (ed.), National Monetary Policies and the International Financial System, Chicago: University of Chicago Press.

Dornbusch, R. (1976), "Expectations and Exchange Rate Dynamics", Journal of Political Economy 84 (December), pp. 1161-1176.

Dornbusch, R. (1980), Open Economy Macroeconomics, New York: Basic Books.

Edgen, G., K.O. Faxen and C.E. Odhner (1969), "Wages, Growth and the Distribution of Income", Swedish Journal of Economics 71, pp. 133-160.

Eichengreen, B. (1986), "The Bank of France and the Sterilization of Gold, 1926-31", Explorations in Economic History, January.

Eichengreen, B. (1986), "Understanding 1921-1927 (Inflation and Economic Growth in the 1920s)", Rivista di Storia Economica 3.

Eichengreen, B. (1986b), "The Australian Economic Recovery in International Comparative Perspective", in N.G. Bullin and R.G. Gregory (eds), Economic

Recovery in Australia in the 1930s, Cambridge University Press, forthcoming.

Eichengreen, B. and J. Sachs (1985), "Exchange Rates and Economic Recovery in the 1930s", Journal of Economic History, December.

Fischer, Stanley (1983), "A Note on Investment and Lagged Q", unpublished manuscript, MIT.

Fleming, J.M. (1962), "Domestic Financial Policies under Fixed and under Flexible Exchange Rates", IMF Staff Papers 9, pp. 369-380.

Fohlen, C., (1966), La France de l'Entre-Deux-Guerres, 1917-1939, Paris: Casterman.

Frenkel, J., and C.A. Rodriguez (1982),"Exchange Rate Dynamics and the Overshooting Hypothesis," IMF Staff Papers 29 (March), pp. 1-30.

Galenson, W., and A. Zellner (1957), "International Comparisons of Unemployment Rates", in National Bureau of Economic Research, The Measurement and Behavior of Unemployment, Princeton: Princeton University Press, pp. 439-580.

Hawtrey, Falph (1931), "French Monetary Policy", in Ralph Hawtrey, The Art of Central Banking, London: Macmillan.

Hayashi, F. (1982), "Tobin's Marginal q and Average q: a Neoclassical Interpretation", Econometrica, 50, p. 213-224.

INSEE (1966), Annuaire Statistique de la France: résumé retrospectif, Paris: INSEE.

Jackson, Julian (1985), The Politics of Depression in France, 1932-1936, Cambridge: Cambridge University Press.

Kemp, T. (1971), "The French Economy under the Franc Poincaré", Economic History Review (February).

Kemp, T. (1972), The French Economy, 1913-39, London: Longmans.

Kindleberger, C. (1973), The World in Depression, 1929-39, Berkeley: University of California Press.

Kydland, F.E. and E.C. Pescott (1982), "Time to Build and Aggregate Fluctuations", Econometrica 50, pp. 1345-70.

League of Nations (various issues), International Statistical Yearbook, Geneva: League of Nations.

Lewis, W.A. (1949), Economic Survey 1919-1939, London: Allen and Unwin.

London and Cambridge Economic Service (1970), The British Economy: Key Statistics, 1900-1970, London: Times Newspapers Ltd.

Mitchell, B.R. (1975) European Historical Statistics 1750-1970, London: Macmillan.

Mundell, R.A. (1963), "Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates", Canadian Journal of Economics 29, pp. 475-85.

Neary, P. and J. Stiglitz (1983), "Toward a Reconstruction of Keynesian Economics: Expectations and Constrained Equilibria", Quaterly Journal of Economics 98, pp. 199-228.

Redmond, J. (1980), "An Indicator of the Effective Exchange Rate of the Pound in the 1930s" Economic History Review, pp. 83-91.

Redmond, J. (1981), "More Effective Exchange Rates in the 1930s: North America and the Gold bloc", University of Birmingham, Faculty of Commerce and Social Science Discussion Paper D8.

République Française, Direction générale des duanaires (various issues), Tableau général de commerce et de navigation, Paris.

Sachs, J. (1980), "Wages, Flexible Exchange Rates and Macroeconomic Policy", Quaterly Journal of Economics 94, pp. 737-747.

Sachs, J. and C. Wyplosz (1984), "Real Exchange Rate Effects of Fiscal Policy", Harvard Institute of Economic Research Discussion Paper 1050 (April).

Saint-Etienne, C. (1983), "L'offre et la demande de monnaie dans la France de l'Entre-Deux-Guerres (1920-1939)," Revue Economique 34 (March), pp. 344-367.

Salter, W. (1959), "Internal and External Balance: The Role of Price and Expenditure Effects", Economic Record.

Sauvy, A. (1984), Histoire Economique de la France entre les deux guerres, Paris: PUF.

Sargent, T. (1983), "Stopping Moderate Inflations: The Methods of Poincaré and Thatcher", in R. Dornbusch and M. H. Simonsen (eds), Inflation, Debt, and Indexation, Cambridge: MIT Press, pp. 54-98.

Statistique Générale de la France (1951), Indice Général du Mouvement Economique en France de 1901 a 1931 et de 1929 a 1939, Paris.

Swan, T. (1960), "Economic Control in a Dependent Economy", Economic Record.

Tobin, J. (1969), "A General Equilibrium Approach to Monetary Theory", Journal of Money, Credit and Banking 1 (February), pp. 15-29.

Veda, K. and H. Yoshikawa (1986), "Financial Volatility and the q Theory of Investment", Economica 53, p. 11-28.

EFFECTIVE EXCHANGE RATES
1929=100

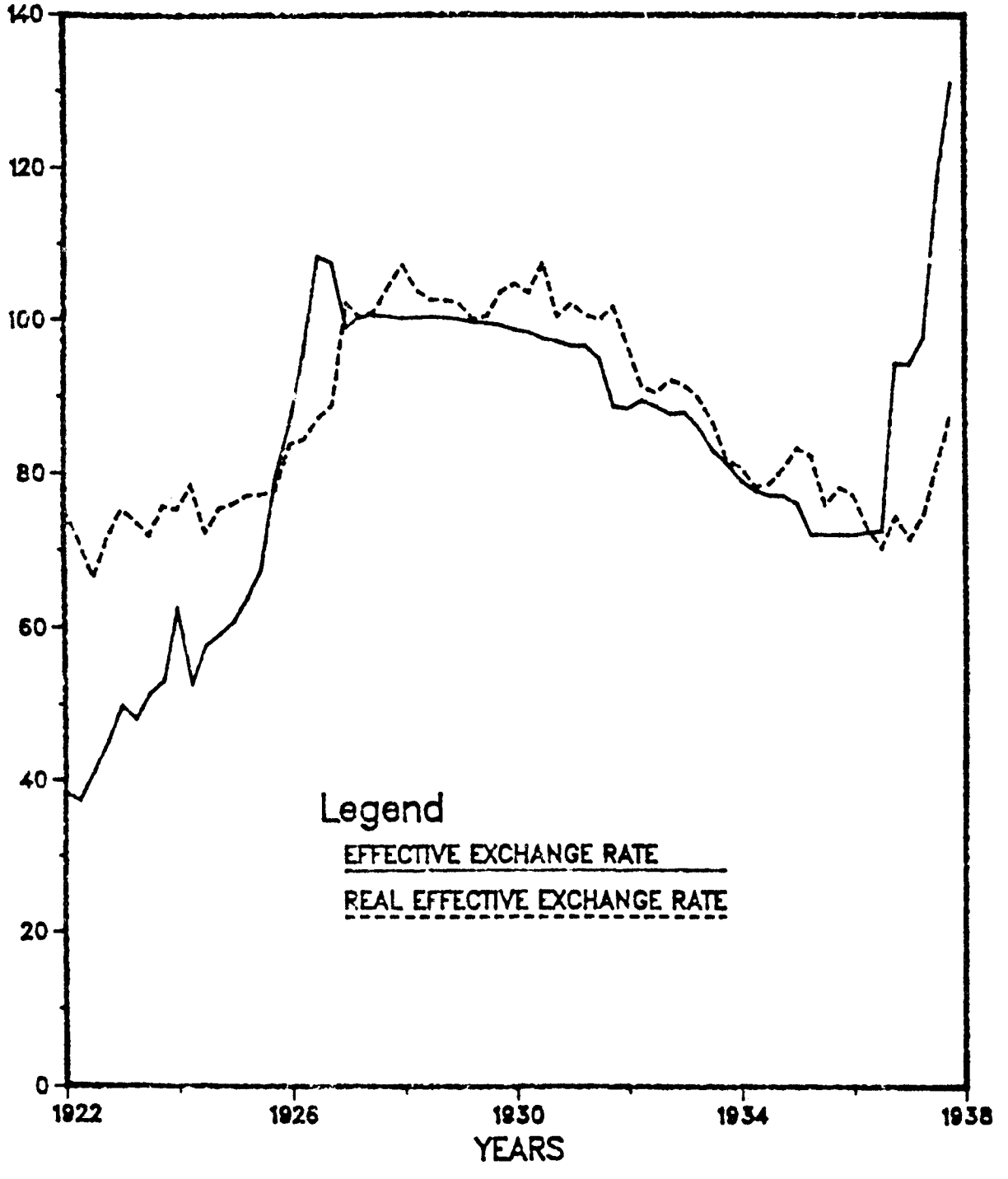

Chart 1

EXPORTS AND THE REAL EFFECTIVE EXCHANGE RATE
1929=100

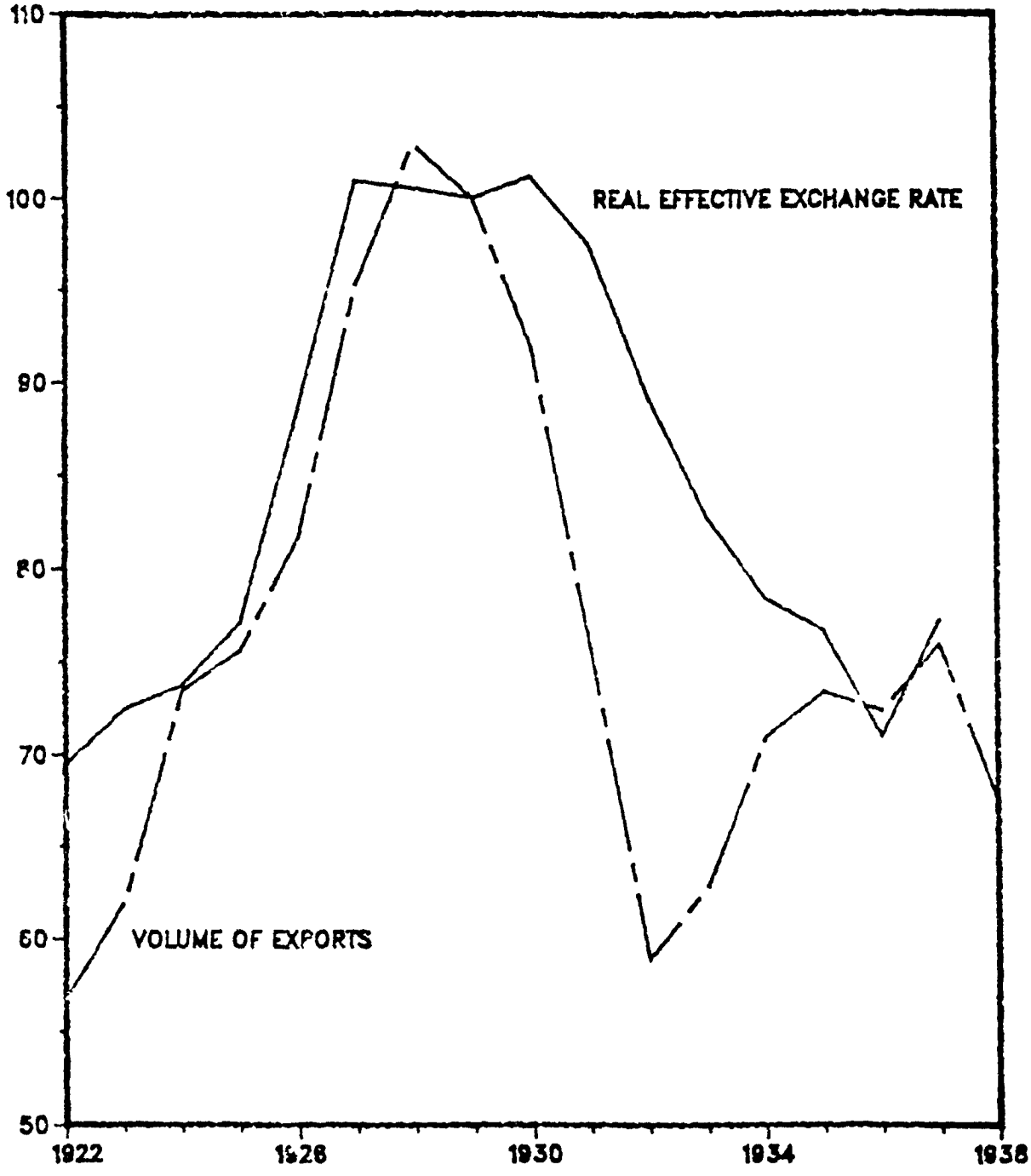

Chart 2

REAL CONSUMER AND PRODUCER WAGES
1929=100

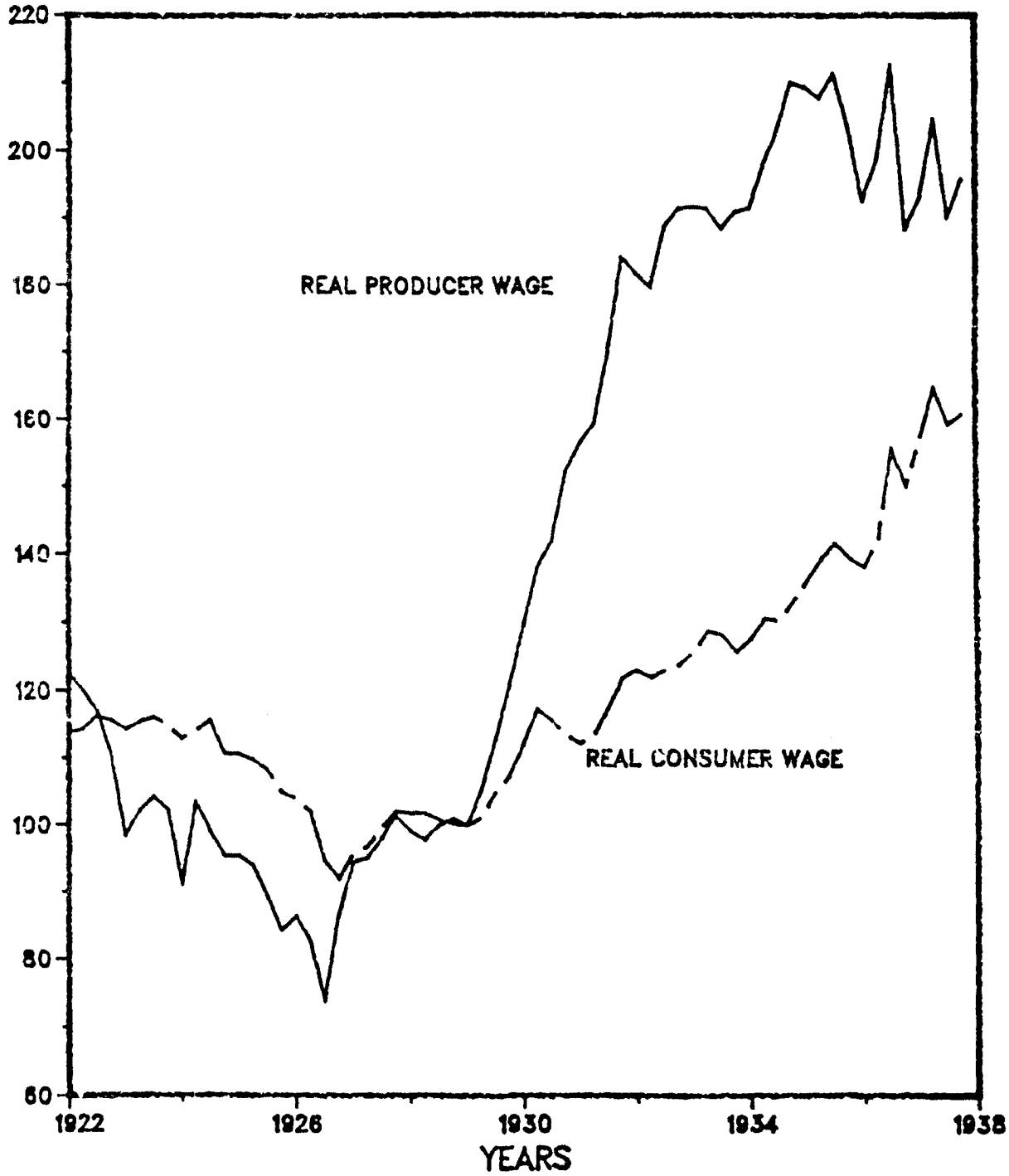

Chart 3

UNEMPLOYMENT AND THE REAL PRODUCER WAGE

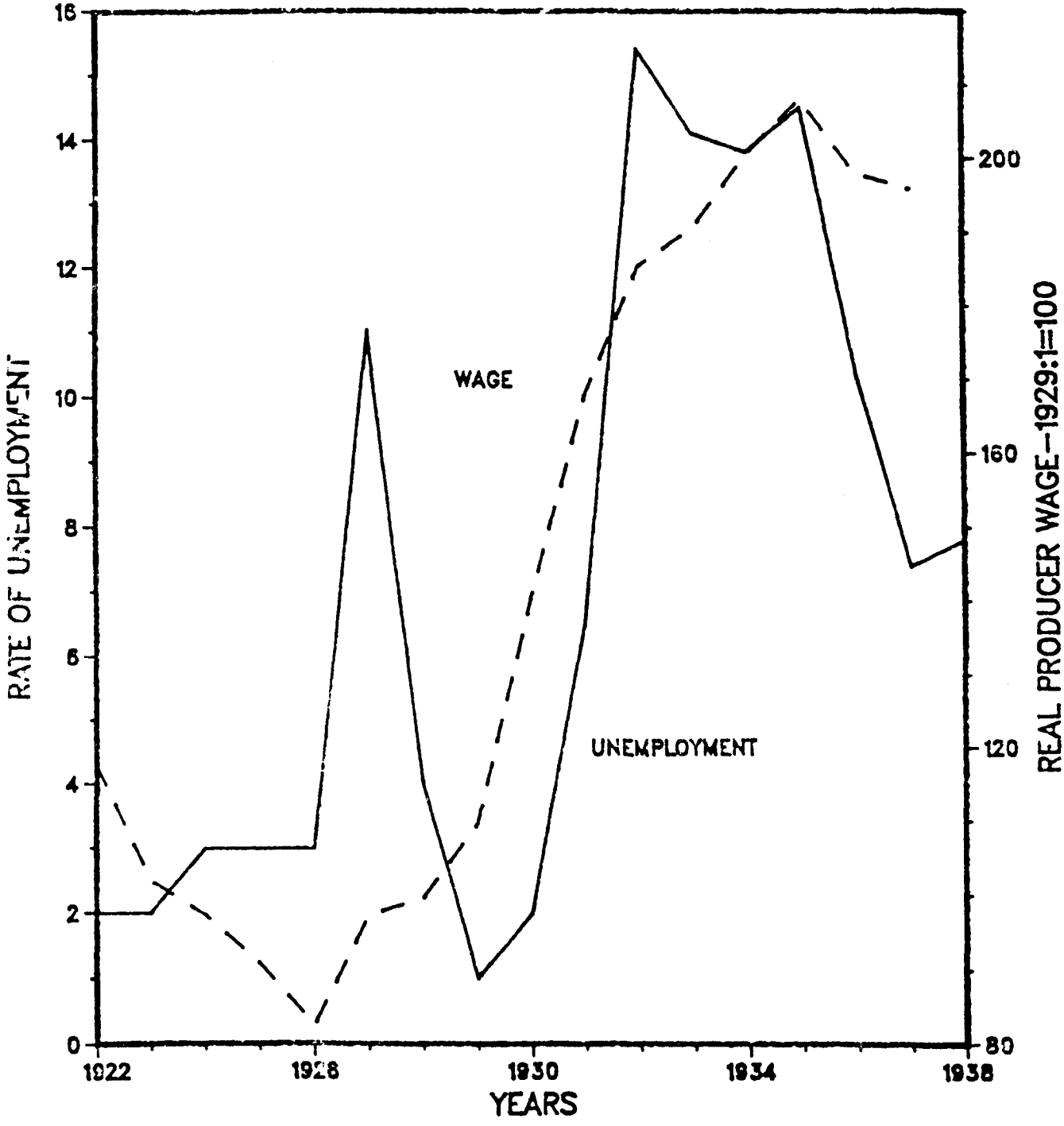

Chart 4

DECOMPOSITION OF NATIONAL INCOME

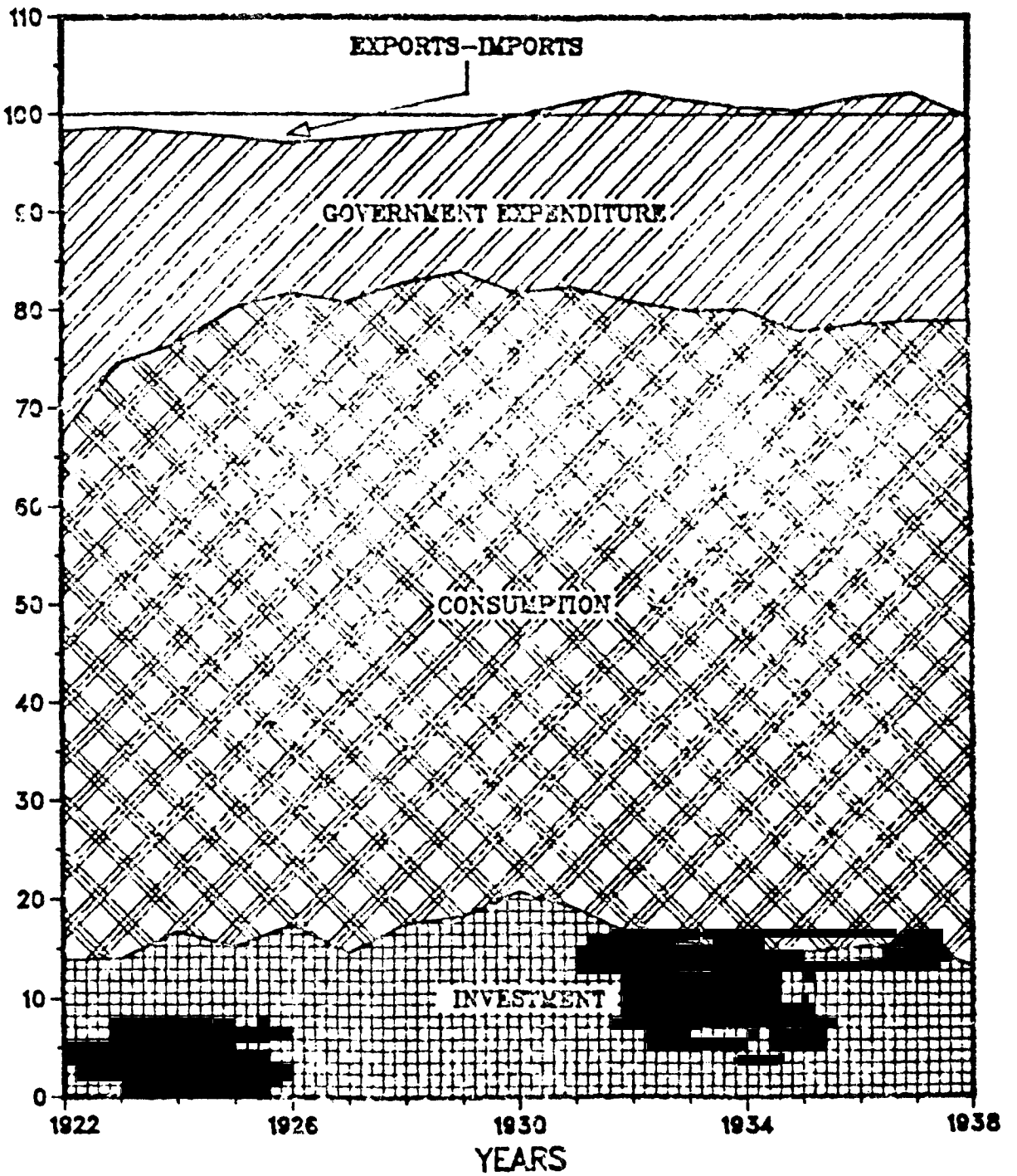

Chart 5

THE BUDGET SURPLUS AND THE REAL EFFECTIVE EXCHANGE RATE

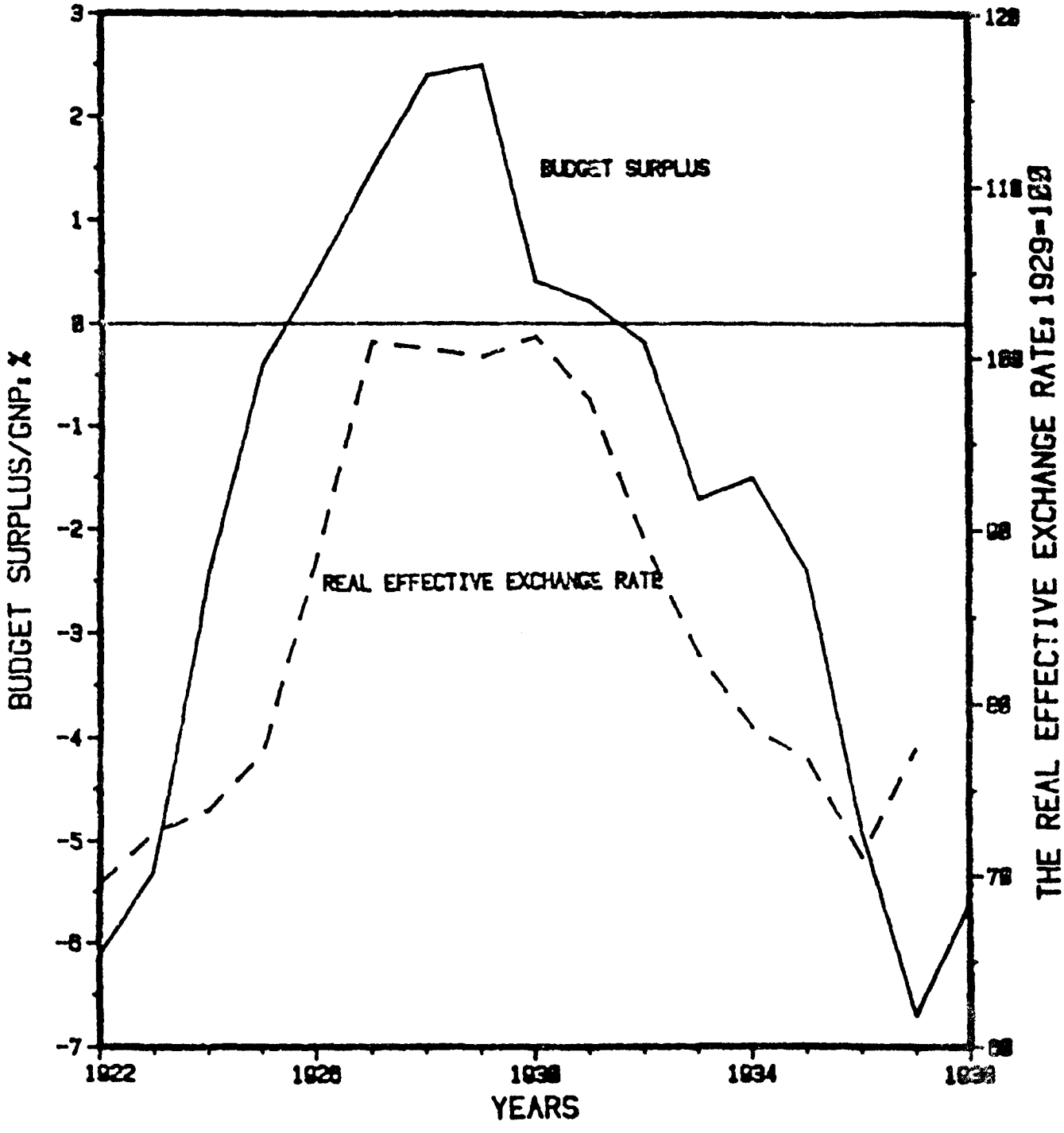

Chart 6

EXPORT PERFORMANCE AND RELATIVE PRICES
1929=100

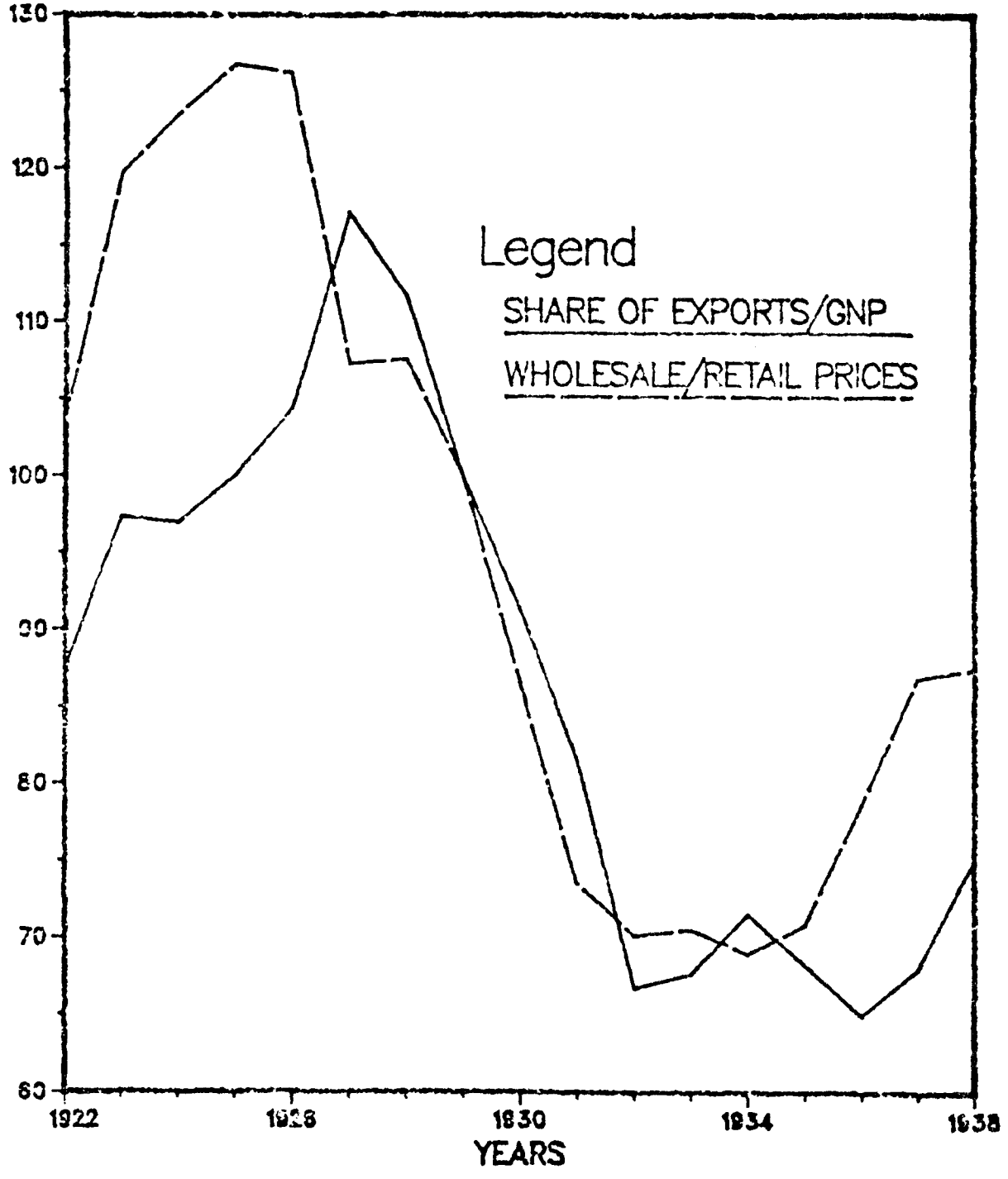

Chart 7

INVESTMENT AND Q-1

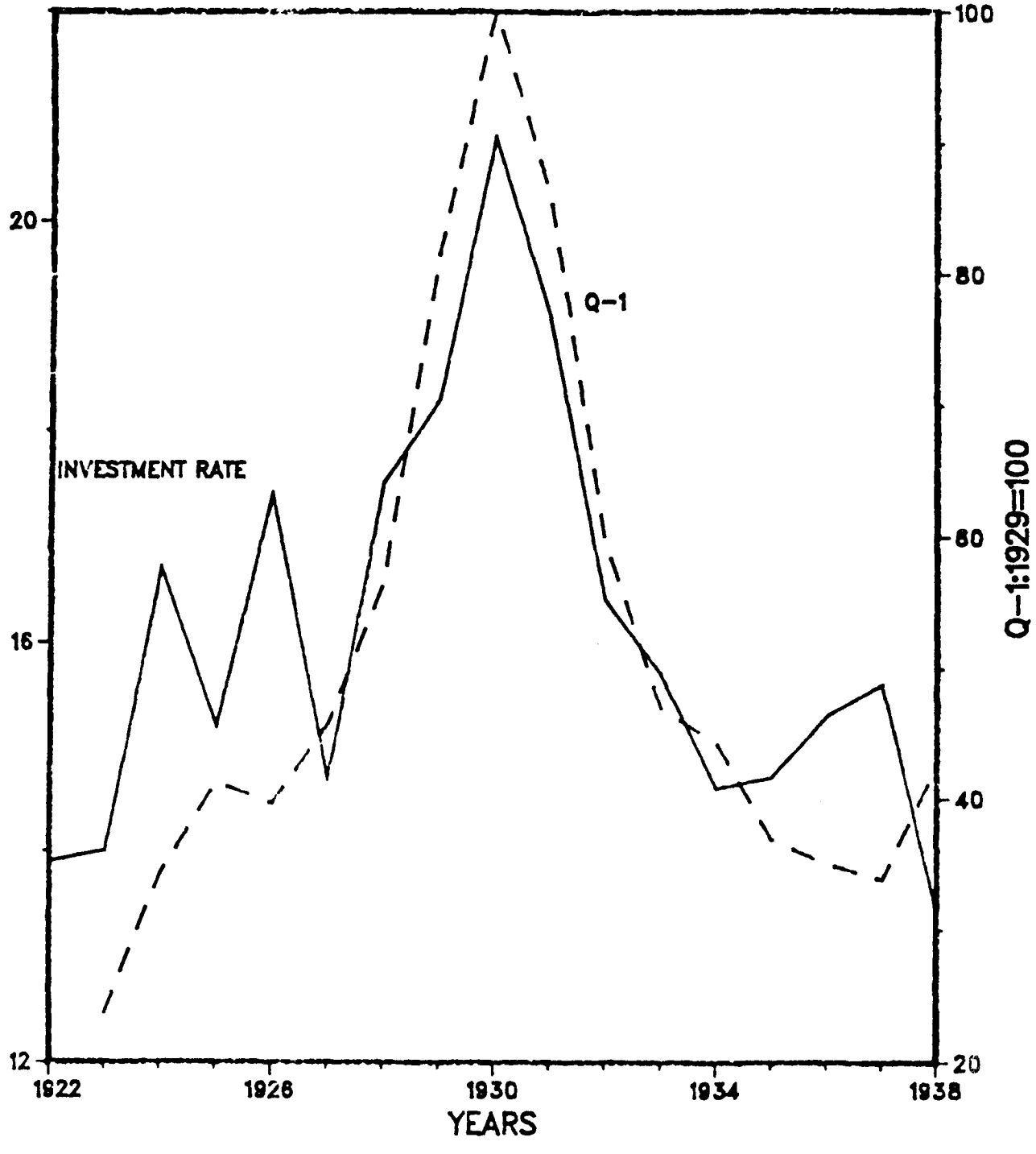

Chart 8

Q AND THE REAL EFFECTIVE EXCHANGE RATE

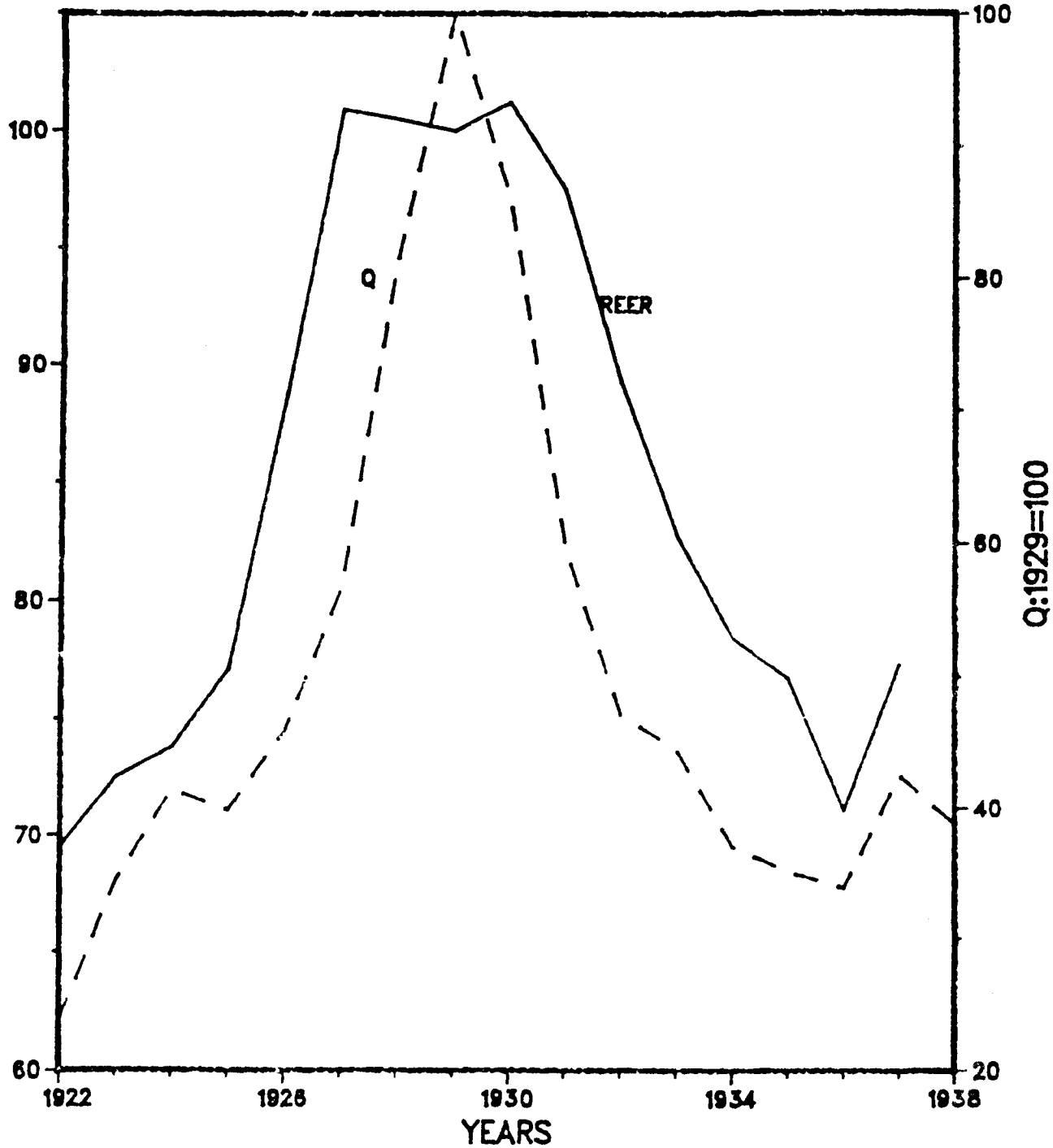

Chart 9

Table 1

Interwar Growth Rates

	France	U.S.	U.K.	Italy	Germany	"World"
Average Annual Rates of Growth of Real GDP						
1921-26	10.2	8.4	2.3	2.8	15.1	5.8
1927-30	5.0	-0.9	1.3	1.4	-2.4	-0.3
1930-31	-4.3	-7.7	-5.1	-2.2	-10.9	-7.0
1931-38	-1.6	2.3	3.1	2.8	8.9	2.8
1921-38	2.8	2.8	2.3	2.0	7.9	2.8
Average Annual Rates of Growth of Industrial Production						
1921-26	18.9	10.0	6.2	9.1	6.7	9.4
1927-30	8.7	- 0.6	-0.7	2.2	- 3.8	- 1.0
1930-31	-14.8	-19.2	-6.4	-9.4	-18.8	-18.5
1931-38	1.2	7.7	6.1	4.6	14.9	6.9

Table 2

Decomposition of National Income
(as percentage of GNP)

	Consumption	Investment	Government Spending	Current Account
1922	.533	.139	.312	.016
1923	.606	.140	. 24	.014
1924	.599	.167	.216	.019
1925	.648	.152	.176	.023
1926	.645	.174	.152	.029
1927	.670	.143	.163	.023
1928	.643	.180	.159	.017
1929	.658	.183	.147	.013
1930	.608	.209	.182	.001
1931	.629	.193	.190	-.012
1932	.645	.165	.214	-.023
1933	.646	.156	.213	-.015
1934	.656	.146	.205	-.007
1935	.631	.147	.225	-.004
1936	.634	.153	.230	-.016
1937	.634	.156	.232	-.022
1938	.637	.141	.221	.001

Source: calculated from Carre, Dubois and Malinvaud (1967).

Table 3. The Model

$$Y = Y^E + \lambda^N Y^N \tag{9}$$

$$D = D(Y - T, \Omega) \qquad D_1, D_2 > 0 \tag{10}$$

$$\Omega = B + \lambda B^* \equiv qK \tag{11}$$

Nontraded Goods sector

$$Y^N = D^N + G^N \tag{12}$$

$$D^N = \alpha_N D/\lambda_N \tag{13}$$

$$G^N = \alpha^N G/\lambda_N \tag{14}$$

$$\dot{\lambda}_{N,t+1} = \lambda_{N,t} + \gamma [Y^N{}_t - f^N(\lambda_N)] \qquad f^N{}_{\lambda_N} > 0 \tag{15}$$

Exportables Sector

$$Y^E = f^E(K, \lambda_N) \qquad f^E{}_K > 0, \; f^E{}_{\lambda_N} < 0 \tag{16}$$

$$Y^E = D^E + G^E + I + X \tag{17}$$

$$D^E = \alpha^E D \tag{18}$$

$$G^E = \alpha^E G \tag{19}$$

$$X = X(\lambda) \qquad X_\lambda > 0 \tag{20}$$

Investment

$$K_{t+1} - K_t = \psi(q_t) \qquad \psi_q > 0 \tag{21}$$

$$I_t = K_{t+1} - K_t + \delta K_t \tag{22}$$

$$r_t = (q_{t+1} - q_t)/q_t + f^E_{K,t} \tag{23}$$

Portfolio Balance

$$r_t = r^* + (\lambda_{t+1} - \lambda_t)/\lambda_t + \theta(B_t + q_t K_t, \lambda_t B^*_t) \qquad \theta_1 > 0 \quad \theta_2 < 0 \tag{24}$$

Government Budget

$$G_t = T_t - r_t B_t + (B_{t+1} - B_t) \tag{25}$$

Initial values

$Y_o = 145$ $Y^N_o = 69$ $Y^E_o = 76$ $G_o = 38$ $I_o = 9.5$ $D_o = 100$ $X_o = 25.1$

$B_o = 800$ $B^*_o = 500$ $K_o = 1900$ $q_o = \lambda_o = \lambda_{No} = 1$ $r_o = 0.01$

Parameter values

$\alpha^E = 0.3 \quad \alpha^N = 0.5 \quad \delta = 0.1 \quad \mu = 0.1 \quad r^* = 0.005$

production functions:
exportables: Cobb-Douglas with share of capital = 0.25
nontraded goods: $(\partial Y^N / \partial \lambda)\ (\lambda / Y^N) = 0.2$

consumption function marginal propensities to spend:
out of income: 0.9
out of wealth: 0.1

portfolio balance: $\partial r / \partial\ (B + .../\lambda B^*) = 0.001$

investment function: $\partial\ (K_{t+1} - K_t)\ /\ \partial q_t = 4$

Table 4. Simulation Results

$B_o = 800$ $\bar{B} = 700$

	B	λ	λ_N	q	I	G	X	Y
Initial steady state	800	100.0	100.0	1.0	9.5	38.0	25.1	145.0
Period 1	800	109.1	100.0	1.026	10.8	23.8	26.8	137.9
Period 2	781	108.3	99.4	1.018	10.4	29.0	26.7	141.6
Period 3	773	108.2	99.1	1.017	10.4	30.1	26.7	142.7
Period 4	766	108.2	99.0	1.016	10.3	30.7	26.6	143.3
Period 5	759	108.1	98.9	1.014	10.2	31.3	26.6	143.8
Period 10	735	108.3	98.6	1.011	10.1	33.3	26.7	145.4
Period 20	712	109.2	98.2	1.008	10.0	35.4	26.8	147.4
Period 30	704	110.3	97.9	1.005	9.8	36.0	27.0	148.3

Table 5. Investment Function

Annual Data: 1923-38

Dependent Variables: I/Y

	constant	q	q_{-1}	dY/Y	Capital Inflows	RHO	SEE
1	0.66	-0.08	0.52	0.53		-0.55	0.049
	(27.58)	(-0.79)	(5.22)	(2.31)		(-1.93)	
2	0.66		0.45	0.41		-0.52	0.048
	(28.02)		(10.77)	(2.41)		(-1.90)	
3	0.67		0.43			-0.43	0.056
	(24.47)		(8.56)			(-1.58)	
4	0.63		0.49	0.31	-0.36	-0.56	0.047
	(21.74)		(9.74)	(1.80)	(-1.34)	(-2.17)	

Source: Sauvy (1984). Statistique Générale de la France (various issues).

TABLE 6

Real Investment – Growth Rates

(annual averages in percent)

	1922_1926	1922_1927	1928	1929	1930	1931	1928_1931	1932_1938
TOTAL ECONOMY	7.8	3.9	23.4	18.7	9.3	–15.0	9.1	–3.6
AGRICULTURE	4.0	3.2	9.2	23.5	–0.8	–8.9	5.8	–1.2
STEEL	24.9	18.9	24.6	21.9	4.2	–30.3	5.1	–3.5
CHEMICAL IND.	18.4	11.1	37.9	29.8	4.6	–19.7	13.1	–0.9
TEXTILE IND	5.9	3.5	12.0	7.8	–2.1	–28.5	–2.7	–5.1
BUILDINGS	58.2	42.4	43.1	28.2	4.9	–17.1	14.8	–8.9
TRANSPORTS	–9.2	–9.4	23.5	12.9	44.6	11.5	23.1	–3.9
SERVICES	6.9	1.5	25.2	15.0	7.8	–8.9	9.8	–4.3
COMMERCE	14.2	8.7	21.5	14.0	–0.5	–13.0	5.5	–8.2

Source:INSEE

Table 7. q and the Government Budget
(annual data: 1922-1937)

Dependent variable: q

Constant	Budget Surplus	λ	Capital Inflows	RHO	SEE	DW
0.57	0.10			0.63	0.117	
(6.88)	(2.33)			(3.25)		
-0.54	0.02	1.25		0.40	0.104	1.28
(-1.20)	(0.54)	(2.51)		(1.63)		
0.57	0.10		0.15	0.62	0.121	
(6.72)	(2.25)		(0.17)	(3.08)		

Notes: t-statistics in parentheses. The budget surplus variable is defined as the ratio of the surplus to GNP.
Source: see Appendix A

Table 8. The Real Exchange Rate
(annual data: 1922-1937)

Constant	Budget Surplus	Real Money Growth	Real Money Growth Times Fix	Capital Inflows	RHO	SEE	DW
0.88	0.058	-	-	-	0.64	0.054	
(22.65)	(2.96)				(3.37)		
0.87	0.045	0.17	-	-	0.64	0.052	
(22.18)	(2.14)	(1.37)			(3.03)		
0.83	0.066	-0.28	0.90	-	-	0.039	1.66
(47.62)	(5.21)	(-1.67)	(4.18)				
0.84	0.066	-0.30	0.88	0.11	-	0.040	1.63
(40.28)	(5.03)	(-1.65)	(3.88)	(0.39)			

Notes: see Table 3. FIX is a dummy variable which takes a value of unity during the fixed exchange rate period (1927-1935), and zero elswhere.

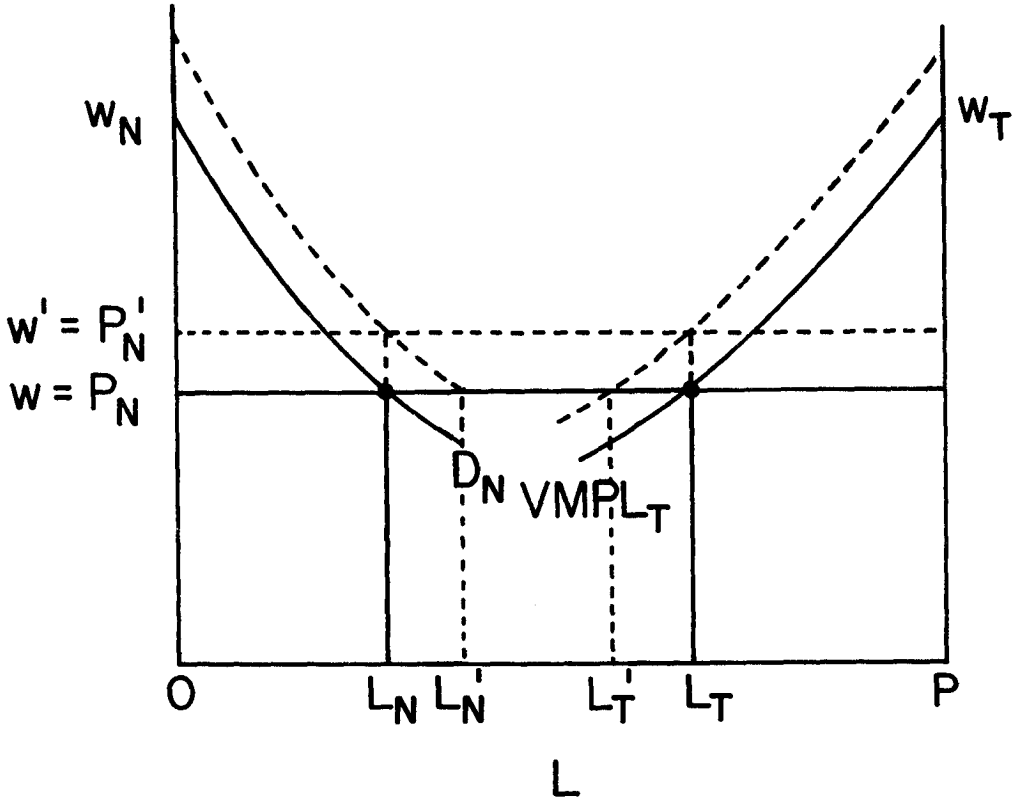

Figure 1

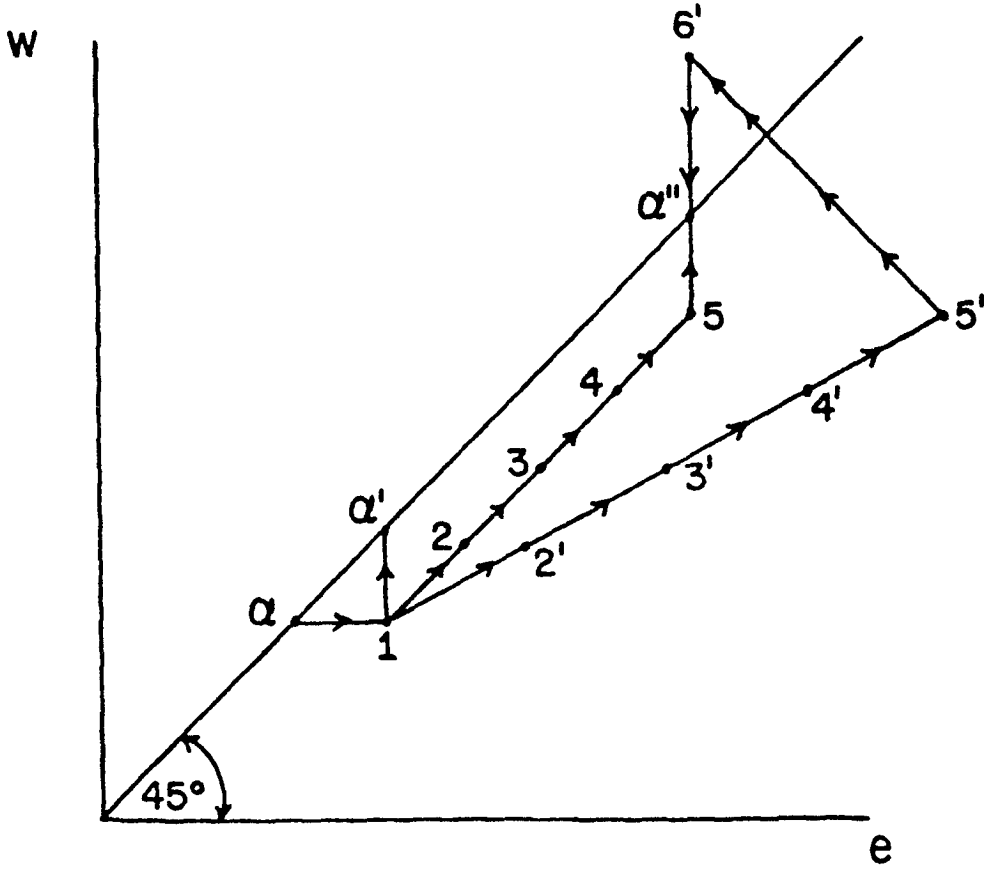

Figure 2

LIST OF INSEAD RESEARCH WORKING PAPERS

80/01 **"Identifying cognitive style determinants of retail patronage,** by Christian PINSON, Arun K. JAÏN and Naresh K. MALHOTRA, January 1980.

80/02 **"Dimensions culturelles des conceptions de management - une analyse comparative internationale"**, par André LAURENT, Février 1980.

80/03 **"Cognitive style and effective communication"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, December 1979.

80/04 **"Accomodative cognitive style differences in consumer reduction of alternatives"**, by Naresh K. MALHOTRA, Christian PINSON and Arun K. JAÏN, October 1979.

80/05 **"Stability and reliability of part-worth utility in conjoint analysis: a longitudinal investigation"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, September 1979.

80/06 **"The expected future spot exchange rate, the forward rate, and the trade balance"**, by Charles A. WYPLOSZ, March 1980.

80/07 **"Decline and adjustment: public intervention strategies in the European clothing industries"**, by José de la TORRE, July 1980.

80/08 **"The uncommon market: European policies towards a crisis industry - clothing in the 1970's"**, by José de la TORRE and Michel BACCHETTA, May 1980.

80/09 **"STRATPORT: a decision support system for strategic planning"**, by Jean-Claude LARRECHE and V. SRINIVASAN, April 1980, Revised October 1980.

80/10 **"A new approach to market segmentation strategy: a banking application"**, by Arun K. JAÏN, Christian PINSON and Naresh K. MALHOTRA, March 1980.

80/11 **"The exchange and interest rate term structure under risk aversion and rational expectations"**, by Charles A. WYPLOSZ, Revised Version, September 1980.

80/12 **"Individual cognitive differences in MDS analysis of perceptions"**, by Arun K. JAÏN, Naresh K. MALHOTRA and Christian PINSON, July 6-12, 1980.

80/13 **"STRATPORT: A model for the evaluation and formulation of business portfolio strategies"**, by Jean-Claude LARRECHE and V. SRINIVASAN, April 1980, Revised November 1980.

80/14 **"Les styles cognitifs : une nouvelle approche de la segmentation des marchés"**, par Christian PINSON, Naresh K. MALHOTRA and Arun K. JAÏN, Septembre 1980.

80/15 **"Cognitive styles: a new approach to market segmentation"**, by Christian PINSON, Naresh K. MALHOTRA and Arun K. JAÏN, March 1980.

81/01 **"Eurobanking, open market operations and the monetary base"**, by Herwig M. LANGOHR, August 1980.

81/02 **"Alternative approaches to the theory of the banking firm: a note"**, by Herwig M. LANGOHR, September 1980.

81/03 **"Why does beta shift when the length of securities returns varies?"**, by Gabriel A. HAWAWINI, December 1980.

81/04 **"Forward market and the cooperative firm"**, by Gabriel A. HAWAWINI, January 1981.

81/05 **"On some propositions regarding the behavior of the labor-managed firm under uncertainty"**, by Gabriel A. HAWAWINI, January 1981.

81/06 **"Impact of the investment horizon on the association between securities' risk and return: theory and tests"**, by Gabriel A. HAWAWINI and Ashok VORA, February 1981.

81/07 **"New evidence on beta stationarity and forecast for Belgian common stocks"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL February 1981.

81/08 **"Industrial policy in the European Economic Community: crisis and change"**, by Kenneth S. COURTIS, June 1980.

81/09 **"Dogmatism as a moderator of banking behavior and attitudes"**, by Arun K. JAÏN, Christian PINSON and Naresh K. MALHOTRA, March 1981.

81/10 **"Investment horizon, diversification, and the efficiency of alternative beta forecasts"**, by Gabriel A. HAWAWINI and Ashok VORA, March 1981.

81/11 **"Organizational development & change"**, by Claude FAUCHEUX, Gilles AMADO and André LAURENT, April 1981.

81/12 **"The pricing of risky assets on the Belgian stock market"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL, May 1981.

81/13 **"A test of the generalized capital asset pricing model"**, by Gabriel A. HAWAWINI and Ashok VORA, May 1981.

81/14 **"On the history of yield approximations"**, by Gabriel A. HAWAWINI and Ashok VORA, May 1981.

81/15 **"Pitfalls of the global product structure"**, by William H. DAVIDSON and Philippe C. HASPESLAGH, May 1981.

81/16 **"Adjusting beta estimates: real gains or illusions?"**, by Gabriel A. HAWAWINI and Ashok VORA, June 1981.

81/17 **"Do European industrial marketers budget differently? an international comparison via the advisor model"**, by David WEINSTEIN and Gary L. LILIEN, June 1981.

81/18 **"The internationalisation of manufacturing in the automobile industry - some recent trends"**, by Yves L. DOZ, April 1981.

81/19 **"Portfolio planning: use and usefulness"**, by Philippe C. HASPESLAGH, May 1981.

81/20 **"Production decisions in the mixed firm"**, by Claude J. VIALLET, October 1981.

81/21 **"Foreign investment and economic development: conflict and negotiation"**, by José de la TORRE, April 1981.

81/22 **"Forecasting country political risk"**, by José de la TORRE and David H. NECKAR, March 1981.

81/23 **"The impact of inflation on real variables: a general equilibrium approach"**, by Antonio M. BORGES, November 1981.

81/24 **"An assessment of the risk and return of French common stocks"**, by Gabriel A. HAWAWINI, Pierre A. Michel and Claude J. VIALLET, November 1981.

81/25 **"Mode de vie et style de vie : quatre observations sur le fonctionnement des termes"**, par Jean-François BERNARD-BECHARIES et Christian PINSON.

81/26 **"Simulating an oil shock with sticky prices"**, by Francesco GIAVAZZI, Mehmet ODEKON and Charles A. WYPLOSZ, November 1981.

81/27 **"Decomposing the impact of higher energy prices on long-term growth"**, by Antonio M. BORGES and Lawrence H. GOULDER.

81/28 **"Forecasting for industrial products"**, by David WEINSTEIN.

82/01 **"Estimating and adjusting for the intervalling-effect bias in beta"**, by Kalman J. COHEN, Gabriel A. HAWAWINI, Steven F. MAIER, Robert A. SCHWARTZ and David K. WHITCOMB, February 1980, Revised October 1981.

82/02 **"Friction in the trading process and the estimation of systematic risk"**, by Kalman J. COHEN, Gabriel A. HAWAWINI, Steven F. MAIER, Robert A. SCHWARTZ and David K. WHITCOMB, November 1981.

82/03 **"On the mathematics of Macaulay's duration: a note"**, by Gabriel A. HAWAWINI, December 1981.

82/04 **"Systematic risk, the investment horizons and the market index: an analytical examination"**, by Gabriel A. HAWAWINI and Ashok VORA, December 1981.

82/05 **"Why beta estimates depend upon the measurement interval"**, by Gabriel A. HAWAWINI, January 1982.

82/06 **"Nationalization, compensation and wealth transfer: an empirical note about the French experience"** by Herwig M. LANGOHR and Claude J. VIALLET, 1981/1982.

82/07 **"The Keynesian and classical determination of the exchange rate"**, by Emil-Maria CLAASSEN, May 1982.

82/08 **"The real exchange rate, the current account and the speed of adjustment"**, by Francesco GIAVAZZI and Charles A. WYPLOSZ, April 1982.

82/09 **"Simulation: a complementary method for research on strategic decision making processes"**, by Danielle NEES, May 1982.

82/10 **"The zero-root problem: dynamic determination of the stationary equilibrium in linear models"**, by Francesco GIAVAZZI and Charles A. WYPLOSZ, August 1982.

82/11 **"The theory of risk aversion and liquidity preference: a geometric exposition"**, by Gabriel A. HAWAWINI.

82/12 **"The effect of production uncertainty on the labor-managed firm"**, by Gabriel A. HAWAWINI and Pierre A. Michel.

82/13 **"On the independence between deposit and credit rates"**, by Jean DERMINE, September 1982.

82/14 **"Entrepreneurial activities of INSEAD MBA graduates"**, by Lister VICKERY, October 1982.

82/15 **"Proportional vs. logarithmic models of asset pricing"**, by Gabriel A. HAWAWINI, July 1982.

82/16 **"Capital controls: some principles and the French experience"**, by Emil-Maria CLAASSEN and Charles A. WYPLOSZ, October 1982.

82/17 **"The third world's campaign for a new international economic order"**, by Jan MURRAY, October 1982.

82/18 **"Extremity of judgment and personality variables: two empirical investigations"**, by Naresh K. MALHOTRA, Arun K. JAIN and Christian PINSON, April 1982. Revised July 1982.

82/19 **"Managerial judgment in marketing: the concept of expertise"**, by Jean-Claude LARRECHE and Reza MOINPOUR, Revised September and December 1982.

82/20 **"Uncertainty and the production decisions of owner-managed and labor-managed firms"** by Gabriel A. HAWAWINI, September 1982.

82/21 **"Inflation, taxes and banks' market values"**, by Jean DERMINE, January 1983.

82/22 **"Bank regulation and deposit insurance: adequacy and feasibility"**, by Jean DERMINE, February 1983 (second draft).

82/23 **"Pour une étude critique du différentiel sémantique"**, par Christian PINSON, Avril 1982.

83/01 **"Comparative financial structures: the impact of equity in bank portfolios"**, by Herwig M. LANGOHR, September 1983.

84/01 **"A technological life-cycle to the organisational factors determining gatekeeper activities"**, by Arnoud DE MEYER, November 1983.

84/02 **"La politique budgétaire et le taux de change réel"**, par Jeffrey SACHS et Charles A. WYPLOSZ, Novembre 1983.

84/03 **"Real exchange rate effects of fiscal policy"**, by Jeffrey SACHS and Charles A. WYPLOSZ, December 1983.

84/04 **"European equity markets: a review of the evidence on price behavior and efficiency"**, by Gabriel A. HAWAWINI, February 1984.

84/05 **"Capital controls and balance of payments crises"**, by Charles A. WYPLOSZ, February 1984.

84/06 **"An uncertainty model of the professional partnership"**, by Gabriel A. HAWAWINI, November 1983.

84/07 **"The geometry of risk aversion"**, by Gabriel A. HAWAWINI, October 1983.

84/08 **"Risk, Return and equilibrium of the NYSE: update, robustness of results and extensions"**, by Gabriel A. HAWAWINI, Pierre MICHEL and Claude J. VIALLET, December 1983.

84/09 **"Industry influence on firm's investment in working capital: theory and evidence"**, by Gabriel A. HAWAWINI, Claude J. VIALLET and Ashok VORA, January 1984.

84/10 **"Impact of the Belgian Financial Reporting Act of 1976 on the systematic risk of common stocks"**, by Gabriel A. HAWAWINI and Pierre A. MICHEL, January 1984.

84/11 **"On the measurement of the market value of a bank"**, by Jean DERMINE, April 1984.

84/12 **"Tax reform in Portugal: a general equilibrium analysis of the introduction of a value added tax"**, by Antonio M. BORGES, December 1984.

84/13 **"Integration of information systems in manufacturing"**, by Arnoud DE MEYER and Kasra FERDOWS, December 1984.

85/01 **"The measurement of interest rate risk by financial intermediaries"**, by Jean DERMINE, December 1983, Revised December 1984.

85/02 **"Diffusion model for new product introduction in existing markets"**, by Philippe A. NAERT and Els GIJSBRECHTS.

85/03 **"Towards a decision support system for hierarchically allocating marketing resources across and within product groups"**, by Philippe A. NAERT and Els GIJSBRECHTS.

85/04 **"Market share specification, estimation and validation: towards reconciling seemingly divergent views"**, by Philippe A. NAERT and Marcel WEVERBERGH.

85/05 **"Estimation uncertainty and optimal advertising decisions"**, by Ahmet AYKAC, Marcel CORSTJENS, David GAUTSCHI and Ira HOROWITZ, Second draft, April 1985.

85/06 **"The shifting paradigms of manufacturing: inventory, quality and now versatility"**, by Kasra FERDOWS, March 1985.

85/07 **"Evolving manufacturing strategies in Europe, Japan and North-America"**, by Kasra FERDOWS, Jeffrey G. MILLER, Jinchiro NAKANE and Thomas E. VOLLMANN.

85/08 **"Forecasting when pattern changes occur beyond the historical data"**, by Spyros MAKRIDAKIS and Robert CARBONE, April 1985.

85/09 **"Sampling distribution of post-sample forecasting errors"**, by Spyros MAKRIDAKIS and Robert CARBONE, February 1985.

85/10 **"Portfolio optimization by financial intermediaries in an asset pricing model"**, by Jean DERMINE.

85/11 **"Energy demand in Portuguese manufacturing: a two-stage model"**, by Antonio M. BORGES and Alfredo M. PEREIRA.

85/12 **"Defining a manufacturing strategy - a survey of European manufacturers"**, by Arnoud DE MEYER.

85/13 **"Large European manufacturers and the management of R & D"**, by Arnoud DE MEYER.

85/14 **"The advertising-sales relationship in the U.S. cigarette industry: a comparison of correlational and causality testing approaches"**, by Ahmet AYKAC, Marcel CORSTJENS, David GAUTSCHI and Douglas L. MacLACHLAN.

85/15 "Organizing a technology jump or overcoming the technological hurdle", by Arnoud DE MEYER and Roland VAN DIERDONCK.

85/16 "Commercial bank refinancing and economic stability: an analysis of European features", by Herwig M. LANGOHR and Antony M. SANTOMERO.

85/17 "Personality, culture and organization", by Manfred F.R. KETS DE VRIES and Danny MILLER.

85/18 "The darker side of entrepreneurship", by Manfred F.R. KETS DE VRIES.

85/19 "Narcissism and leadership: an object relations perspective", by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/20 "Interpreting organizational texts", by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/21 "Nationalization, compensation and wealth transfers: France 1981-1982", by Herwig M. LANGOHR and Claude J. VIALLET 1, Final version July 1985.

85/22 "Takeover premiums, disclosure regulations, and the market for corporate control. A comparative analysis of public tender offers, controlling-block trades and minority buyout in France", by Herwig M. LANGOHR and B. Espen ECKBO, July 1985.

85/23 "Barriers to adaptation: personal, cultural and organizational perspectives", by Manfred F.R. KETS DE VRIES and Dany MILLER.

85/24 "The art and science of forecasting: an assessment and future directions", by Spyros MAKRIDAKIS.

85/25 "Financial innovation and recent developments in the French capital markets", by Gabriel HAWAWINI, October 1985.

85/26 "Patterns of competition, strategic group formation and performance: the case of the US pharmaceutical industry, 1963-1982", by Karel O. COOL and Dan E. SCHENDEL, October 1985.

85/27 "European manufacturing: a comparative study (1985)", by Arnoud DE MEYER.

86/01 "The R & D/Production interface", by Arnoud DE MEYER.

86/02 "Subjective estimation in integrating communication budget and allocation decisions: a case study", by Philippe A. NAERT, Marcel WEVERBERGH and Guido VERSWIJVEL, January 1986.

86/03 **"Sponsorship and the diffusion of organizational innovation: a preliminary view"**, by Michael BRIMM.

86/04 **"Confidence intervals: an empirical investigation for the series in the M-Competition"**, by Spyros MAKRIDAKIS and Michèle HIBON.

86/05 **"A note on the reduction of the workweek"**, by Charles A. WYPLOSZ, July 1985.

86/06 **"The real exchange rate and the fiscal aspects of a natural resource discovery"**, by Francesco GIAVAZZI, Jeff R. SHEEN and Charles A. WYPLOSZ, Revised version: February 1986.

86/07 **"Judgmental biases in sales forecasting"**, by Douglas L. MacLACHLAN and Spyros MAKRIDAKIS, February 1986.

86/08 **"Forecasting political risks for international operations"**, by José de la TORRE and David H. NECKAR, Second Draft: March 3, 1986.

86/09 **"Conceptualizing the strategic process in diversified firms: the role and nature of the corporate influence process"**, by Philippe C. HASPESLAGH, February 1986.

86/10 **"Analysing the issues concerning technological de-maturity"**, by R. MOENART, Arnoud DE MEYER, J. BARBE and D. DESCHOOLMEESTER.

86/11 **"From "Lydiametry" to "Pinkhamization": misspecifying advertising dynamics rarely affects profitability"**, by Philippe A. NAERT and Alain BULTEZ.

86/12 **"The economics of retail firms"**, by Roger BETANCOURT and David GAUTSCHI, Revised April 1986.

86/13 **"Spatial competition à la Cournot"**, S.P. ANDERSON and David J. NEVEN.

86/14 **"Comparaison internationale des marges brutes du commerce"**, par Charles WALDMAN, Juin 1985.

86/15 **"How the managerial attitudes of firms with FMS differ from other manufacturing firms: survey results"**, by Mihkel TOMBAK and Arnoud DE MEYER, June 1986.

86/16 **"Les primes des offres publiques, la note d'information et le marché des transferts de contrôle des sociétés"**, par B. Espen ECKBO et Herwig M. LANGOHR.

86/17 **"Strategic capability transfer in acquisition integration"**, by David B. JEMISON, May 1986.

86/18 **"Towards an operational definition of services"**, by James TEBOUL and V. MALLERET, 1986.

86/19 **"Nostradamus: a knowledge-based forecasting advisor"**, by Rob R. WEITZ.

86/20 **"The pricing of equity on the London stock exchange: seasonality and size premium"**, by Albert CORHAY, Gabriel HAWAWINI and Pierre A. MICHEL, June 1986.

86/21 **"Risk-premia seasonality in U.S. and European equity markets"**, by Albert CORHAY, Gabriel A. HAWAWINI and Pierre A. MICHEL, February 1986.

86/22 **"Seasonality in the risk-return relationships some international evidence"**, by Albert CORHAY, Gabriel A. HAWAWINI and Pierre A. MICHEL, July 1986.

86/23 **"An exploratory study on the integration of information systems in manufacturing"**, by Arnoud DE MEYER, July 1986.

86/24 **"A methodology for specification and aggregation in product concept testing"**, by David GAUTSCHI and Vithala R. RAO, July 1986.

86/25 **"Protection"**, by H. Peter GRAY and Ingo WALTER, August 1986.

EURO-ASIA CENTRE
CAMPUS INSEAD

Boulevard de Constance
77309 Fontainebleau Cedex, France
Telephone (1) 60 72 40 40
Telecopy (1) 60 72 40 49
Telex 690389

EAC PUBLICATIONS LIST

January 1980 - October 1985

EAC RESEARCH PAPERS

(Academic papers based on the research of EAC faculty and research staff)

n° 1 LASSERRE Philippe
A contribution to the study of entrepreneurship development in Indonesia. 1980.

n° 2 BOISOT Max and LASSERRE Philippe
The transfer of technology from European to ASEAN enterprises: strategies and practices in the chemical and pharmaceutical sectors. 1980.

n° 3 AMAKO Tetsuo
Possibilité d'un transfert à l'étranger des techniques japonaises de gestion du personnel: le cas français. 1982.

n° 4 LEHMANN Jean-Pierre
Japanese management in Germany. 1982.

n° 5 LEHMANN Jean-Pierre
La gestion japonaise en Allemagne. 1982.

n° 6 AHMAD Reyaz
Japanese investments in ASEAN. 1983.

n° 7 SCHÜTTE Hellmut
Unternehmensstrategische Aspekte der internationalen Expansion mittel ständischer Unternehmen. 1983.

n° 8 SCHÜTTE Hellmut
Wirtschaftliche Kooperation zwischen den ASEAN - Ländern und Nordrhein-Westfalen - Hemmungsfaktoren und Chancen für die deutsche wirtschaft. 1983.

n° 9 RABU Patrick
La présence française en Thaïlande. 1983.

n° 10 SPRECKLEY Bridget
South Korean chemical industry opportunities for foreign firms. 1983.

n° 11 SCHMITLIN Anne
La population active chinoise non-agricole. 1983.

n° 12 CUNNINGHAM Marc
Marketing and distribution for multinational companies in Indonesia: an overview. 1983.

n° 13 CHAPON Marie-Claude
Conditions de travail en Corée du Sud. 1984.

n° 14 ISHIYAMA Yoshihide
The political economy of liberalisation of the financial system in Japan. 1984.

n° 15 CHAPON Marie-Claude
Education in Korea. 1984.

n° 16 SCHÜTTE Hellmut
Exportfreihandelszonen - schwindende Attraktivität durch neue Produktionstechnologien. 1984.

n° 17 LASSERRE Philippe
Singapour comme centre régional. L'experience d'entreprises françaises. 1985.

n° 18 Von KIRCHBACH Friedrich
Patterns of export channels to developing Asia. 1984.

n° 19 MITTER Rajan
A survey of European business in India. 1984.

n° 20 SCHMITLIN Anne
Biens de production et biens de consommation en Chine. 1984.

n° 21 SCHMITLIN Anne
Les investissements étrangers en Chine. 1985.

EAC BRIEFING PAPERS

(Short synopses by EAC faculty and research staff)

n° 1 BOISOT Max and LASSERRE Philippe
Strategies and practices of transfer of technology from European to ASEAN enterprises. 1980.

n° 2 HEADLEY Stephen
The partners of foreign investors in Indonesia: the tip of the ethnic iceberg. 1980.

n° 3 HEADLEY Stephen
Foreword to government-business relations in Indonesia. 1980.

n° 4 HEADLEY Stephen
Personnel management in Indonesia: How ?. 1980.

n° 5 HEADLEY Stephen
Can you work for Honda and remain yourself ? The cultural dimension of Indonesian management. 1980.

n° 6 CONWAY Bryony
The context of management development in Malaysia. 1980.

n° 7 CONWAY Bryony
Racial balance in management in Malaysia. 1980.

n° 8 CONWAY Bryony
Appropriate education for management in Malaysia. 1981.

n° 9 CONWAY Bryony
Foreign enterprise and management development in Malaysia. 1981.

n° 10 CONWAY Bryony
The Chinese Malaysian enterprise. 1982.

EAC REPRINTS

(Reprints of major articles published by EAC faculty and research staff)

n° 1 de BETTIGNIES Henri-Claude
Japanese organizational behaviour: a psychocultural approach. 1973.

n° 2 de BETTIGNIES Henri-Claude
The transfer of management know-how in Asia: an unlearning process. 1980.

n° 3 de BETTIGNIES Henri-Claude
Korean management in the 1980's: the international challenge. 1980.

n° 4 de BETTIGNIES Henri-Claude
La sociologie des organisations: le cas du Japon. 1980.

n° 5 de BETTIGNIES Henri-Claude
Analyse des craintes françaises. 1980.

n° 6 LASSERRE Philippe
L'Indonésie et ses potentiels. 1981.

n° 7 LASSERRE Philippe
Transferts de technologie: des mariages difficiles. 1981.

n° 8 LASSERRE Philippe
The new industrializing countries of Asia: perspectives and opportunities. 1981.

n° 9 de RUGY Jacques
Le Japon prépare ses managers de demain à l'école de l'Occident. 1981.

n° 10 AMAKO Tetsuo
Quand les entreprises japonaises intègrent la gestion américaine. 1982.

n° 11 LASSERRE Philippe
Training: key to technological transfer. 1982.

n° 12 de BETTIGNIES Henri-Claude
Can Europe survive the Pacific century ?. 1982.

n° 13 LASSERRE Philippe
Strategic planning in South-East Asia: does it work ?. 1983.

n° 14 LEHMANN Jean-Pierre
Japan and the world economy: international accountability vs national interests. 1982.

n° 15 LEHMANN Jean-Pierre
Mutual images. 1982.

n° 16 LASSERRE Philippe
Technology transfer from a business policy point of view. 1982.

n° 17 LASSERRE Philippe
Co-ordinative practices in technology transfer. 1982.

n° 18 ESMEIN Jean
Le Japon et l'Asie. 1982.

n° 19 LASSERRE Philippe et Sé-Jung YONG
La modalité de l'acquisition de technologie dans les entreprises de pays en voie de développement. 1982.

n° 20 de BETTIGNIES Henri-Claude
Stratégies japonaises: conséquences pour les firmes européennes. 1982.

n° 21 SCHUTTE Hellmut
Drehscheibe aller Auslandsaktivitäten. 1983.

n° 22 LEHMANN Jean-Pierre
International competition and the Japanese benchmarks of success: what has the West learned so far ?. 1983.

n° 23 AHMAD Reyaz
Coping with Japan: Japanese investments in ASEAN and the need for rapid change. 1983.

n° 24 de BETTIGNIES Henri-Claude
The challenge of management training in Asia. 1983.

n° 25 LASSERRE Philippe
Strategic assessment of international partnership in ASEAN countries. 1983.

n° 26 LEHMANN Jean-Pierre
Prospects for development in the current international environment - the issue of free trade vs protectionism. 1983.

n° 27 LEHMANN Jean-Pierre
Perspectives de développement dans l'environnement international actuel. La question du libre commerce contre le protectionnisme. 1983.

n° 28 CHAPON Marie-Claude
Labour conditions in South Korea - new needs, new directions. 1984.

n° 29 SCHUTTE Hellmut
Micro-electronics versus cheap labour: questionmarks behind Asia's export successes. 1984.

n° 30 de BETTIGNIES Henri-Claude
Introduction of the book, Le management est-il un art japonais?. 1984.

EAC FORUM AND CONFERENCE PAPERS

(Papers presented at the EAC's annual forum or by EAC teaching or research staff at academic conferences).

n° 1 LASSERRE Philippe
Robots and flexible manufacturing systems: their contribution to the productivity dilemna. London, 1981.

n° 2 HUGUENIN Patrick and DEBROUX Philippe
European, Japanese and American investment in ASEAN. Singapore, 1981.

n° 3 PIGOSSI Richard
American investment in ASEAN: present situation and perspectives. Singapore, 1981.

n° 4 TAMAO Toyomitsu - Edited by DEBROUX Philippe
Japan's direct investments in ASEAN - current situation and prospects. Singapore, 1981.

n° 5 LASSERRE Philippe
Euro-ASEAN transfer of technology: some experiences and their implications for training. Kuala Lumpur, 1981.

n° 6 AMAKO Tetsuo
Relations entre les structures d'entreprises et les technologies au Japon - passé et avenir. Paris, 1982.

n° 7 AMAKO Tetsuo
Transférabilité de la gestion japonaise et cercles de qualité en France. Paris, 1982.

n° 8 DURHAM Kenneth
Protectionism, trade distortion and Euro-Asian relationships. Frankfurt, 1982.

EAC DOCUMENTATION SERIES

nº 1 A bibliography on Japan
Resources of the Euro-Asia Centre and INSEAD Library.
July 1982. 108 pages.

nº 2 A bibliography on ASEAN and ASEAN countries
Resources of the Euro-Asia Centre and INSEAD Library.
February 1983. 103 pages.

nº 3 A bibliography on the People's Republic of China
Resources of the Euro-Asia Centre and INSEAD Library.
August 1982. 18 pages.

nº 4 A bibliography on Asia
Resources of the Euro-Asia Centre and INSEAD Library.
February 1982. 25 pages.

nº 5 A bibliography on South Korea, Hong Kong and Taiwan
Resources of the Euro-Asia Centre and INSEAD Library.
January 1982. 22 pages