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The macroeconomics of protectionism: the case of Britain in the 1930s

Michael Kitson* and Solomos Solomou*

Introduction

The use of protection as an instrument for economic revival in a flexible exchange rate regime remains a controversial policy issue. The experience of the UK in the 1930s offers an excellent opportunity for testing the hypotheses that discouragement of imports through tariffs was an effective way of reducing the propensity to import, and that the effective demand for the products of UK industry was significantly increased as a result.

During the period 1932–37, GDP and manufacturing production showed unprecedented annual growth rates of 4·7 and 8·2% respectively. In a long-term historical perspective the peak-to-peak cycle of 1929–37 showed signs of trend acceleration in economic growth. Whilst manufacturing production grew at 1·6% per annum during the period 1900–29, this more than doubled to 3·6% per annum during the 1929–39 cycle; similarly, GDP grew at 0·7% per annum during 1913–29 and 2·0% during 1929–37.

The problem we address in this paper is whether the policy shift to protection in 1931/2 *contributed significantly* to this cyclical and trend recovery of the economy. Most economic historians have agreed that the impact of the tariff on economic growth was negligible, if not negative (Richardson, 1967; Capie, 1978). These studies have sought to quantify the impact of the 1932 tariff by focusing on the possible substitution effects, considering the advantage to individual industries from the imposition of an import tariff on competing goods. Studies that have viewed tariffs as a macroeconomic policy instrument have shown that some positive output effects are observed (Foreman-Peck, 1981; Eichengreen, 1979 and 1981). This paper is drawn from a larger study on the sectoral and macroeconomic impact of the tariff during the period (Kitson and Solomou, forthcoming). Here we focus exclusively on the macroeconomic impact, analysing the historical evidence from a theoretical perspective different to that proposed by Foreman-Peck or Eichengreen. The disaggregated analysis of the impact of tariffs will be analysed elsewhere.

The paper is divided into three parts. First, we evaluate the theoretical issues concerning tariffs as an instrument of macroeconomic policy. Second, we present an empirical

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analysis of the imposition of a general tariff in Britain in 1932, illustrating the macroeconomic processes arising from this policy shift and attempting to disentangle the effects of devaluation from those of the tariff. Finally, we provide an overview of other influences on the 1930s recovery and place our views on the impact of the 1932 tariff in a broader context.

1. The macroeconomics of protection

The first major contribution to the analysis of tariffs as a macroeconomic policy under a system of flexible exchange rates is given in Mundell's (1961) seminal paper. Mundell recognised that under fixed exchange rates, and in the absence of extensive retaliation, a tariff may generate higher output and employment. However, under flexible exchange rates, the appreciation of the real exchange rate, resulting from the imposition of tariffs, will render commerical policy ineffective. Mundell's results relies on the Laursen–Metzler (1950) hypothesis that saving will increase with improved terms of trade, owing to an improvement in real disposable income. However, the Laursen–Metzler effect is not a clearly established empirical or theoretical result. The final effect of a terms-of-trade shift will depend on direct price effects, wealth effects and intertemporal substitutions, so that a non-retaliatory tariff can have expansionary macroeconomic effects as long as the restrictive Laursen–Metzler assumption is dropped from Mundell's model (Ford and Sen, 1985).

The model can also be extended to allow for monetary and portfolio considerations under flexible exchange rates (Boyer, 1977; Chan, 1978; Eichengreen, 1981; Krugman, 1982). These extended models also suggest that tariffs will affect output only in the short run (Eichengreen, 1981), but depend for this result on the use of the quantity theory of money or the Cambridge equation of money demand.[1] Thus, the idea that under flexible exchange rates commercial policy will be rendered ineffective does not hold as a general result; even within a standard macroeconomic framework, tariffs can have positive output and employment effects.

Our intention here is to indicate further plausible mechanisms by which tariffs may have had a favourable effect on economic performance. Our perspective is a Kaldorian one, incorporating the Harrod foreign trade multiplier (Harrod, 1933). Kaldor (1970, 1982) saw the importance of the Harrod foreign trade multiplier within a 'stylized facts' perspective, noting that the British trade cycle reflected fluctuations in export demand. Investment is best modelled not as exogenous but as an induced component of aggregate demand, being determined by the income changes which are, in turn, induced by the Harrod foreign trade multiplier.[2]

Kaldor argued that the Ricardian rationale for free trade is dependent on the assumption of constant returns to scale. The existence of economies of scale in manufacturing, however, means that a nation that is successfully competing in foreign trade can expect that the advantage of an expanding market will increase its competitiveness. Similarly, a

[1] Ford and Sen (1985) show that the effects of tariffs depends on the specification of the money demand function and that accommodatory changes in the money stock, such as were observed in the 1930s, can improve the chances of a general tariff having positive output and employment effects.

[2] In the most simple terms the Harrod foreign trade multiplier can be expressed as

$$Y = (1/m)X$$

where Y = Income; X = Exports; m = marginal propensity to import. For extensions see Kennedy and Thirlwall (1983).

nation with a poor performance in international trade can expect a trend of deteriorating competitiveness and declining markets. Thus, while not explaining the causes of initial imbalances in international trade, the existence of economies of scale indicates why such imbalances may generate virtuous or vicious circles of growth.

The existence of economies of scale and the process of cumulative causation led Kaldor to stress the importance of trends in foreign trade, in particular trade in manufactures, for demand management. In analysing British post-war economic policies, Kaldor (1971) argued that the poor economic performance was due to insufficient demand. This was not in the sense of an excessive propensity to save relative to the opportunities to invest but of an excessive propensity to import relative to the ability to export.

The importance of the idea of export-led growth gave rise to a policy debate on the best means for securing full employment. While exchange rate adjustment seemed the most applicable method, its efficiency was called in question, particularly after the limited impact of the 1967 devaluation. It was argued that a nominal devaluation may not have a large impact on the real exchange rate, and thus on competitiveness, owing to the effect of rising import prices, particularly of wage goods. Devaluation is a non-selective policy and raises the prices of all imports, not just competitive ones. Consequently, any attempt to generate a substantial and long-term improvement in competitiveness through the exchange rate may require a large reduction in the nominal rate, with repercussions for inflation, real income and economic stability.

This led Kaldor and others to argue that some form of protection of competitive manufactures would be superior.[1] On the other hand, since protection acts solely on imports (whereas devaluation acts on both sides of the trade account) it has been argued that protection cannot promote export-led growth. Strictly speaking this is true; however, by encouraging import substitutes, protection can expand the domestic traded-goods sector. In terms of the Harrod foreign trade multiplier, the means of expansion operates through reducing the propensity to import, so reducing the leakages from the domestic economy. As Kaldor pointed out in 1951, the objective of protection in an underemployed economy would be to reduce the propensity to import competitive goods, not to reduce the volume of such imports. If the policy was successful, the rise in domestic incomes should encourage more imports of complementary and subsequently competitive goods.

This superiority of protection over devaluation applies more to quotas or other forms of quantitative restrictions than to tariffs. Tariffs, like devaluation, act on relative prices, so their effect may be limited if price elasticities are low or non-price factors dominate. They work best when applied selectively on competitive rather than complementary imports, discriminating between sectors producing import substitutes and those dependent on imported inputs.

[1] Although Kaldor's perspective influenced the Cambridge Economic Policy Group (CEPG) in the 1970s the two approaches are rather different. The CEPG proposed the use of tariffs as an expenditure switching policy to be combined with fiscal reflation. The tariff would alleviate the balance-of-payments constraint on fiscal policy and would prevent demand expansion from generating an unsustainable trade deficit. A tariff was preferred to devaluation for many of the reasons discussed above; most importantly the CEPG argued that in Britain [illegible] isms discussed below.

Table 1. *Import propensity of manufactures (volume), 1924–38*

Year	%
1924	9·9
1925	10·8
1926	11·9
1927	11·9
1928	12·3
1929	12·6
1930	12·7
1931	13·4
1932	9·2
1933	8·9
1934	9·3
1935	9·1
1936	8·9
1937	9·3
1938	8·7

Sources: Trade data: Board of Trade *Journal* (various editions, 1924–38). Output data: Feinstein (1972), Tables 9 and 51.

Notes: The index shows manufactures imports expressed as a percentage of domestic demand for manufactures; gross output figures were estimated by grossing up the 1924 value from the *Census of Production* using the Lomax index for 1924–38. This gives a series for gross output at constant (1924) prices. The published trade data were also assembled to form a consistent series at constant (1924) prices.

each year between 1924 and 1938, the import propensity (m) for UK manufacturing industry as a whole. Between 1924 and 1931 m increased steadily from 9·9% to 13·4%. During 1932–38, m fell by almost one-third despite very rapid output growth.[1] Since the General Tariff on manufacturing imports was introduced in 1932, there is a prima facie case for the new policy having contributed to these trend changes.

The other component of GDP accounting for the aggregate trends was food, beverages and tobacco (Matthews *et al.*, 1982, p. 432). In current price terms, imports of this sector fell from 14·7% of GDP in 1924 to 9·2% in 1937. Given that this component of expenditure was not directly influenced by the tariffs of 1932, it may be argued that a fairly large part of the aggregate propensity shift was not policy-induced.[2]

[1] The fall in import propensities was observed in most industries, the largest reductions being experienced in the vehicle industry, textiles, iron and steel, clothing, electrical goods and chemicals (Kaldor and Kitson, 1986). Only in the raw material based industries of timber and paper did any significant fall in m fail to occur. Such a disaggregated picture suggests that import propensity changes were observed both in the newly protected sectors of 1931–2 and the industries that were already protected. Hence, the tariff cannot be seen as the only influence on sectoral import propensity changes.

[2] Although some protection was afforded to the domestic agricultural and manufactured food sectors, its scope was limited by Imperial Preference and by the fact that most of British trade in agricultural products was conducted in the sterling bloc.

Table 2. *Import ratio for food, drink and tobacco: current and constant prices*

Year	Constant (1938) prices (% of GDP)	Current prices (% of GDP)
1924	11·2	14·7
1925	10·6	13·9
1926	11·2	13·7
1927	10·8	13·2
1928	10·5	12·9
1929	10·8	12·7
1930	11·0	12·8
1931	11·5	10·8
1932	10·3	10·0
1933	9·9	9·0
1934	9·2	8·6
1935	8·9	8·5
1936	8·7	8·7
1937	8·5	9·2
1938	8·6	8·7

Sources: Imports of food, drink and tobacco from B. R. Mitchell, *Abstract of British Historical Statistics* (1988), p. 457. The GDP series are taken from Feinstein (1972).

In the case of food imports there are clearly a number of influences on the changed import propensity. First, the differences between the value and volume figures (see Table 2) show that a major part of the fall in the import propensity for this component of expenditure is due to a relative price shift between the price of food imports and the GDP deflator. On average, the differences between 1924–31 and 1932–38 suggest that over two percentage points of the fall can be accounted for by a relative price shift. Second, there was a fall in the level of food imports in the 1930s compared to the 1920s, which may imply a change in competitiveness due to devaluation. Finally, given that the rate of growth of food imports was below the trend growth rate of GDP throughout 1924–37,[1] some of the fall has to be explained in terms of the relatively low income elasticity of demand for food. This meant that as growth picked up between 1932–37 there was an endogenous beneficial effect on income from a reduced food import ratio. Thus, to the extent that the tariff stimulated the manufacturing sector and the aggregate economy, it also had a repercussion effect on the food import propensity.

Although the trend in the propensity to import food is only very indirectly linked to tariffs, the impact of protection on the manufacturing sector needs to be considered. We evaluate this by considering the evidence on changes in manufacturing competitiveness in the 1930s. Table 3 shows a number of different indicators of exchange-rate behaviour during the period 1924–38. The sterling–dollar rate shows considerable stability during the 1920s, reflecting Britain's return to the Gold Standard in 1925. This stability is also evident when account is taken of movements in other currencies; columns 3 and 4 show the

[1] During 1924–29 constant (1938) price food imports increased by 1·4% per annum while during 1929–37 they fell by 1·2% per annum.

Table 3. *Sterling exchange rate measures*

	(1) Sterling–dollar	(2) Sterling effective exchange rate	(3) Sterling average exchange rate	(4) Sterling manufacturing exchange rate
1924	91·0		84·6	83·0
1925	99·5		93·5	91·4
1926	100·1		102·3	101·6
1927	100·1		100·0	100·1
1928	100·2		100·0	100·0
1929	100·0		100·0	100·0
1930	100·1	100·0	99·6	100·1
1931	93·4	100·1	93·7	94·8
1932	72·2	86·7	75·2	75·7
1933	87·3	91·3	77·0	83·8
1934	103·8	95·9	75·4	86·0
1935	100·1	95·4	74·5	85·5
1936	102·4	97·5	77·7	88·5
1937	101·8	100·8	84·7	94·3
1938	100·7	105·1	86·9	100·3

Sources: column (1) Svennilson (1954), pp. 318–19; column (2) Redmond (1980), appendix; column (3) Dimsdale (1981), tables 3 and 9; column (4) Svennilson (1954), pp. 318–19, LCES (various editions) and Board of Trade (1929 and 1939). Countries covered are USA, France, Germany, Belgium, Netherlands, Canada, Australia and India. Weights are average share of UK manufacturing trade for 1928 and 1935.
Notes: 1929 = 100 except for the sterling effective exchange rate where 1929–30 = 100.

movement in sterling against a basket of currencies for trade in manufactures.[1] Considering the manufacturing exchange rate (column 4) as the best indicator, there was an average devaluation of nearly 15% for the period 1932–37 compared to 1929.

To compare the impacts of this devaluation with that of tariffs it is necessary first to consider the scale of the tariff introduced. The Import Duties Act 1932 provided a base rate on newly protected imports of 10%, but one which could be raised subsequently on the recommendation of the newly established Import Duties Advisory Committee. On the Committee's recommendation, most rates were soon raised to 20% and for a more limited category of commodities (which included steel and chemicals) to $33\frac{1}{3}$%. There were

[1] The average exchange rate of Dimsdale (1981) uses each country's share in world trade as weights while the manufacturing exchange rate is constructed using shares in UK overseas trade. There are also small differences in the countries covered. The sterling effective exchange rate shown in Table 3 (column 2) was constructed by Redmond (1980) using shares in bilateral and multilateral trade as weights. It indicates an average sterling devaluation of approximately 5% in the period 1932–37 compared with the 1929–30 level. The average exchange rate (column 3) and the manufacturing exchange rate (column 4) show a greater devaluation, 22·6% and 14·4% respectively, compared with 1929. As both these indicators are based on manufacturing trade they are influenced by the European gold bloc currencies which were comparatively overvalued against sterling. Thus they indicate a higher devaluation for manufacturing trade, as opposed to the effective rate which is influenced by the currencies of raw material and food exporters. A striking point is the difference between the average exchange rate and the manufacturing rate. In part this can be explained by coverage and alternative weighting procedures. The major divergence however arises after 1933 and is primarily due to our decision to allow for a 35% devaluation of the German exchange rate for the period 1933–38. Germany operated a complex multiple exchange rate régime during this period with an effective devaluation of the official rate for trade in manufactures (Kindleberger, 1956, p. 116).

Table 4. *Manufactures dutiable only under the Import Duties Act, 1932*

Rate of duty %	Value of imports from all countries in 1930 £m
0	17·5
10	38·9
15	12·1
20	57·9
25	6·6
30	4·3
$33\frac{1}{3}$	17·0
Over $33\frac{1}{3}$	1·8
Total	156·1

Source: Leak (1937), p. 569.

further increases in 1934 and 1935. Assessment of the incidence of the tariff is dependent on the volume of manufacturing imports charged duty at each rate. Table 4 gives this information based on the value of imports in 1930. By using a base year prior to the introduction of the tariff it is possible to calculate the rate of duty that would have been levied on the pre-protection volume of imports. This method thus takes into account those imports that were discouraged by the tariff as well as those that were imported with the duty levied. Calculations are complicated, as many products were liable to specific or mixed rates of duty. Allowing for these difficulties an average rate of duty of 17·2% can be calculated from Table 4 for 1932. Leak (1937, p. 589) estimated that the average rate of duty was 18·5% in 1933, rising to 19·4% in 1934 and declining to 19·3 and 19·1% respectively in the subsequent years.

It is also necessary to consider changes in domestic and world prices. A number of alternative indicators are presented in Table 5. The real sterling index in column 1 is derived from the manufacturing exchange rate in Table 3 adjusted for movements in relative wholesale prices. This shows that following the return to the Gold Standard in 1925 there was an effective depreciation of the real exchange rate owing to a relative decline in UK prices. It is questionable, however, whether this depreciation led to increased competitiveness of manufactures or to higher real income in sectors providing exports and import substitutes (Dimsdale, 1981, p. 320). Following the supsension of the Gold Standard, the real exchange rate depreciated by some 16% in 1932, but by 1937 this improvement in competitiveness had been eroded. The average real depreciation for manufactures was only 6% for the period 1932–37 compared with the 1929 level. The rise in UK wholesale prices served to diminish its impact on competitiveness.

The use of the real exchange rate as a measure of competitiveness is limited by a number of factors (Durand and Giorno, 1987). As we are analysing trade in manufactures, the use of wholesale price indices as deflators for the nominal index is undesirable since they include the prices of non-manufactures, but indices for manufactures do not exist for the countries included in our index. A second problem is that the real exchange rate does not

Table 5. *Measures of competitiveness*

	(1) Real sterling manufacturing exchange rate	(2) Export competitiveness	(3) Import competitiveness
1924	106·7	98·1	103·6
1925	109·6	101·7	105·0
1926	104·3	98·7	105·9
1927	101·2	100·4	106·4
1928	100·0	98·1	102·8
1929	100·0	100·0	100·0
1930	100·7	102·7	96·6
1931	96·9	103·4	102·3
1932	83·4	91·2	90·2
1933	91·8	95·1	92·9
1934	94·6	97·9	91·1
1935	90·5	98·1	91·2
1936	96·4	100·8	94·8
1937	106·4	101·9	94·0
1938	106·0	104·6	97·9

Sources: column (1) column 4, Table 3 adjusted for differences in wholesale prices (from Mitchell, 1980, 1982 and 1983); column (2) Lewis (1952) and Board of Trade *Journal* (various editions). Index shows unit value of manufacturing exports divided by world price of manufactures, both measured in gold; column (3) Feinstein (1972), BSO (1978), Board of Trade *Journal* (various editions) and Leak (1937). Index shows price of home sales of manufactures divided by unit values of imports adjusted for an average duty payable of 17·2%.

allow for differences in pricing strategy following a change in the nominal exchange rate. To overcome this deficiency we have calculated separate indices for export and import competitiveness, the latter including the impact of the tariff. The former (column 2, Table 5) shows the unit value of UK manufacturing exports relative to the world price of manufactures, both measured in gold. This index shows a similar trend to the real exchange rate in the period 1932–37, although the average depreciation is only 2·5% relative to 1929.

On the import side, the index (column 3, Table 5) shows the price of home sales of manufactures relative to the unit value of manufacturing imports adjusted for an average duty payable of 17·2% (see above), both measured in sterling. This index shows an average improvement in the competitiveness of domestic manufactures following the imposition of import duties and devaluation of 7·6% compared with 1929, and over 10% if comparison is made with the alternative policy period of 1925–31.

Thus, the competitive advantages of a substantial nominal devaluation were significantly reduced by the induced increase in prices, so that there was only a small increase in competitiveness for UK manufacturing exports. There was however a major improvement in the competitiveness of domestic manufactures relative to imports. This was primarily due to the imposition of the tariff, with devaluation also making a (smaller) contribution.

Implicit in the preceding analysis has been the assumption that exchange depreciation and the tariff can be considered as independent policies. While this is a simplfying assumption, we believe that the widely accepted idea that tariffs and devaluation counteract

each other is not applicable to the UK during the 1930s. It is commonly contended that if a tariff is imposed it will generate a trade surplus through discouraging imports. This will consequently cause the exchange rate to appreciate to restore a trade balance. In the UK during the 1930s, however, the exchange rate was not allowed to float. It was a managed currency with intervention particularly through the Treasury and the newly created Exchange Equalisation Account. More importantly, even if the exchange rate had been allowed to float it would not have eliminated the tariff's expansionary impact owing to the prevailing conditions of unemployment and excess capacity. The primary effect of the tariff was to increase the level of economic activity. While it may have reduced total imports in the very short term, the increase in income and output induced a rise in imports in the medium term. Thus, the balance of trade in the 1930s was not significantly different from that in the 1920s.[1]

An additional consideration is that the tariff may have led to a revaluation of the *real* exchange rate. Our contention is that the nominal devaluation did increase domestic costs and the prices of manufactures, but the impact of the tariff is less conclusive. As the devaluation did not discriminate between complementary and competitive imports it increased directly raw material costs and the price of wage goods. The tariff, however, was directed at competitive goods and thus should have had a limited impact on costs (of course, the scope of the tariff did mean that it raised the prices of some inputs, most notably iron and steel). It could also be argued that the imposition of a tariff would lead domestic producers of import substitutes to raise their prices by the amount of the tariff. Leak (1937) shows that domestic producers' pricing responses to tariffs were not systematic and suggests that many firms were able to decrease prices owing to economies of scale. Thus the increase in profits during the period most probably came from increased sales, and not from higher margins.

Both devaluation and import duties were important in altering the long-term trends in trade which constrained UK growth in the inter-war period. The devaluation of 1931 has featured prominently in the literature as a major cause of recovery in the period 1932–37. Our evidence suggests, however, that the resulting improvement in competitiveness was significantly eroded by the increase in domestic prices and costs. On the export side the evidence suggests that devaluation did help to halt the long-term decline in the UK share of world manufacturing exports, but only for a relatively short period of three to four years. Britain's manufacturing exports had become seriously uncompetitive by 1930, and effective devaluation was necessary to restore competitiveness to a more 'normal' level.

Import propensities for manufactured goods had been rising up to 1931 and we would expect devaluation to have helped halt such a rising trend. But in 1932 there was a sharp fall in the import propensity of UK manufactures of about one-third, and this was sustained from 1932 through to 1938. This fall was not matched by a sustained parallel increase in export share. There must be a strong presumption, therefore, that the large fall in import propensities was caused largely by the improved competitiveness of domestic manufacturing industry following the extension of tariffs in 1931–32, on top of the benefits of a 'corrective' devaluation.

3. Tariffs and economic revival: an overall perspective on the 1930s

For a complete analysis of the success of the British economic revival after 1932 we need to look beyond changes in trade performance. This recovery is usually discussed within the

[1] The deficit on the balance of trade averaged £261 million annually for the period 1924–29 and £236 million for the period 1932–37.

context of a 'natural recovery' versus a policy-induced recovery, with stress being placed on monetary and fiscal policy as well as on exchange rate and tariff policy. Devaluation freed monetary policy from its role in defence of the exchange rate, making possible the 'cheap money' policy of 1932–37. Devaluation may also have benefited the economy via labour market mechanisms; by inflating the domestic price level, devaluation helps to account for the lower rate of growth of real wages observed after 1932–33. This, in turn, generated a redistribution of income towards profits favouring investment.

The 'cheap money' policy was initially concerned with debt management but it has also been seen as a permissive policy for economic revival. The problem is to document a convincing transmission mechanism. The Bank Rate remained at the low level of 2% throughout 1932–39 compared to an average level of over $4\frac{1}{2}$% in 1925–31. However, there was no increase in bank advances to industry until 1935. Cheap money could have stimulated recovery by stimulating consumption and housing, but here too the mechanism is not obvious.[1] Even if such a link between monetary policy and the housing boom could be established, the contribution of housing to the revival of the 1930s is limited. A sectoral decomposition of growth shows that the relative contribution of building and contracting declined in the 1930s relative to the 1920s. During 1924–29 this sector accounted for 12·5% of the overall GDP growth rate, a contribution which fell to 8·7% during 1932–37. In contrast, manufacturing industries accounted for 35·6% and 46·6% of the GDP growth rate in the two periods respectively. This suggests that manufacturing industry played a dominant role in the acceleration of the overall rate of growth after 1932 (Kaldor and Kitson, 1986, p. 11).

This is not to deny the critical role of housing in the early stages of recovery. Although housing accounted for only 3% of GDP it accounted for 17% of the *change* in GDP between 1932–34; in terms of employment, building accounted for 7·5% of total employment but for 20% of the *rise* in employment between 1932–35 (Worswick, 1984). However, to emphasise such leading sector characteristics only in the early stages of recovery fails to place the role of this sector in the overall context of revival in the 1930s.

On the fiscal policy side the balanced budgets of the 1930s have created the impression that fiscal policy was fairly neutral in the recovery. However, studies of the fiscal stance of the government, as measured by the constant employment budget balance, suggest that fiscal policy imparted a significant deflationary impact that was destabilising to recovery between 1932–34. During 1934–38 the fiscal grip was loosened by 1% of GDP per annum, providing a small expansionary effect sustaining the recovery (Middleton, 1981). This fiscal expansion was increasingly dominated by the rearmament policy after 1935; by 1938 the rearmament policy accounted for 30% of government expenditure.

In our view, the imposition of tariffs on an extensive scale by Britain in 1932 was a major policy shift that could help account for the observed shift in the growth path of the economy (and its sectoral characteristics) via the impact of the Harrod foreign trade multiplier. Fiscal, monetary and exchange rate policies in themselves cannot explain the extent and timing of the recovery.

Of course, the improvement in the growth performance of the economy could be viewed as a supply-side shift, unrelated to any policy. The idea of a natural recovery can be

[1] Two mechanisms have been suggested with respect to housing. First, falling interest rates gave rise to a reallocation of saving towards housing investment owing to more stable returns. Second, building society shares became more attractive to savers, giving the societies an excess of funds which resulted in favourable mortgage items. The evidence, however, shows building society deposits grew faster in the 1920s than in the 1930s, so that the availability of funds in the 1930s is mainly due to the favourable conditions of the 1920s, not the monetary policy shift of 1932 (Humphries, 1987).

interpreted in a number of ways. First, British economic growth was 'catching up' in the 1930s. During 1899–1929 a large technological gap had arisen with respect to the fast growing economies. Britain could borrow technology and follow existing demand patterns very easily. There is no doubt that there was such a catching up process in the 1930s, but it cannot explain the timing and extent of the revival. Policy may have been acting in favourable initial conditions, but it is hard to believe that recovery would have occurred without such initiatives being implemented.

A second potential source of natural recovery was the favourable shift in the terms of trade during 1929–32. In this period the collapse of world primary commodity prices improved Britain's terms of trade by 20·8%. Moreover, given the small size of the domestic primary producing sector and the collapse of world trade, the beneficial effects on domestic aggregate demand more than compensated for any adverse effects. Thus, consumer real wages rose rapidly between 1929 and 1932, sustaining aggregate consumption and moderating the depth of the depression. The beneficial macroeconomic effects of the terms-of-trade movements have already been noted above in our discussion of the import ratio for food, drink and tobacco. The relative price effect sustained a low import ratio for food throughout the 1930s. However, these beneficial effects need to be kept in perspective. Most of the fall in the import ratio for food in current prices was observed during 1924–31; moreover, from 1933–37 the terms of trade deteriorated by approximately 10%.

A third source of natural recovery which has been emphasised recently is the claimed moderation of real wages between 1932–37 induced by structural shifts in the labour market (Bank of England, 1984; Beenstock and Warburton, 1986). According to this view, the rise in unemployment during the 1929–32 depression was due partly to increased unwillingness to work caused by too high 'real benefits' and partly to excessively high real wages, induced by unanticipated price-falls. After 1932 this process is assumed to have gone into reverse.

Consumer and producer real wages or incomes can be measured in terms of various wages and price series. Dimsdale (1984) calculated a variety of indicators for the period 1920–38. Only when wages are deflated by wholesale prices does the series peak in 1932. In general, the various measures are not consistent with recovery occurring in 1932. Moreover, during the two cycles of 1924–29 and 1929–37 consumer and producer real wages grew on the same trend path of 1·0% and 0·7% per annum respectively.

A final potential source of natural recovery is the technological and demand structure of the 1930s, which supposedly generated a supply-side shift through the relative decline of the traditional staples and the rapid growth of new industries such as motor cars, precision instruments, dyestuffs, synthetic chemicals and consumer durables. Such industries are thought to form a self-contained 'new development bloc' with complementarity of demand and strong input-output links between them. Since many of these industries were not subject to the change in commercial policy in 1932 (being already protected as new industries) the tariffs of the 1930s could not account for economic revival.

A study of these industries using the detailed industry tables of the *Censuses of Production* for 1924, 1930 and 1935 reveals that they were indeed growing rapidly when compared to other industries. Between 1924 and 1930 output growth in these industries averaged 4·5% per annum as against 1% in other industries. Between 1930 and 1935 the modern industries grew even faster, at an average rate of 7·8% per annum. However, although these industries were growing rapidly, their small share in industrial production—only 10% of manufacturing output in 1924 and still below 20% in 1935—limited their overall impact. Hence, most of the acceleration of growth in the 1930s resulted from the established traditional industries.

A more important criticism of the new development bloc idea is that, according to the input-output tables for 1930 and 1935, the backward linkages from the new industries ran predominantly to the old staples rather than to other new industries (von Tunzelmann, 1982). Hence, any policy shift that stimulated the old staple industries would have major effects on overall economic performance.

This review of potential natural recovery sources suggests that many of the arguments are empirically invalid or that by themselves they are not capable of explaining adequately the characteristics of economic revival in the 1930s. There is no doubt that some supply conditions were favourable to growth. But it is their *interaction* with a new trade policy (and other favourable policy measures) which is the most plausible explanation of the success of the British economy in the 1930s.

Conclusion

The evidence presented in this paper suggests that at a macroeconomic level of analysis the policy shift to protection in 1932 benefited the British economy by generating a major fall in the manufacturing sector's import propensity. Through the Harrod foreign trade multiplier, such a change is important in explaining both the cyclical and relative trend recovery of the economy. Though tariffs by themselves cannot account for all the characteristic of economic revival in the 1930s—other policies and factors were also important—they were a major source of recovery which has been underemphasised in the past.

Such a conclusion does not necessarily imply that the tariff of 1932 generated an industrial structure that was beneficial to economic growth after the Second World War. To the extent that tariffs gave a new life to the old staple sectors, they may have actually prevented the necessary structural change that could have benefited long-term economic growth in the 1950–73 boom. Nevertheless, in the uncoordinated economic environment of the 1930s tariffs were successful in achieving a period of adjustment and pushing the British inter-war economy onto a higher long-term growth path.

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