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BRITISH ECONOMIC FLUCTUATIONS

1870 - 1914

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This paper is circulated for discussion purposes and its contents should be considered preliminary.

The intention of this paper is to survey British economic fluctuations in this period, to emphasize their complexity, and to seek to derive some underlying patterns which might clarify the causes of the fluctuations. Furthermore, it may indicate possible lines of development for trade cycle theories and it may suggest the structure that an econometric model should perhaps have.<sup>1</sup>

The procedure adopted has been to take the raw data in terms of current prices (rather than in real terms) from which trends in the form of 9-year moving averages have been calculated so that attention can be directed to the comparative behaviour of absolute deviations from these. These deviations and their interactions are then the economic fluctuations or 'trade cycles' which are to be examined and explained. As basic reference points the peaks and troughs of the deviations from trend of British money national incomes are employed. Insofar as expenditure in money terms influences output, incomes and employment it seems legitimate to treat the trade cycle in terms of fluctuations in money incomes provided that we remember that price as well as output fluctuations are involved.<sup>2</sup> It also will avoid deflation of data originally recorded in current price terms by price indices whose reliability is open to question, and will enable direct links with the balance of payments and monetary flows. It is clear from figure 1 that fluctuations in money incomes reflect pretty accurately movements in trade union unemployment and industrial activity in Britain, more so than fluctuations in incomes at 1900 prices. It should be noted that all troughs have the same turning points for money incomes, unemployment and industrial activity, but that there is some tendency for unemployment to turn at peaks before money incomes (e.g. 1872/3, 1899/1900), although the turn is very gentle on these occasions. Thus it seems reasonable to adopt the peaks and troughs in deviations of money incomes from trend as reference points, while it should be pointed out that the use of moving averages has not caused any important shift in turning points as compared with those indicated by the raw data. All the peaks are the same, while troughs are advanced one year in the cases of 1886, 1893, 1909 and from the evidence of unemployment and industrial activity, the moving average figure would seem better for 1886 and 1893.

1. It is hoped in a future paper to develop such a model to explain the fluctuations.
2. At the peaks of booms on average actual money incomes were some 5 percent greater than trend values, and a similar amount less in troughs of slumps, while retail prices varied above and below trend by roughly half that amount on average.

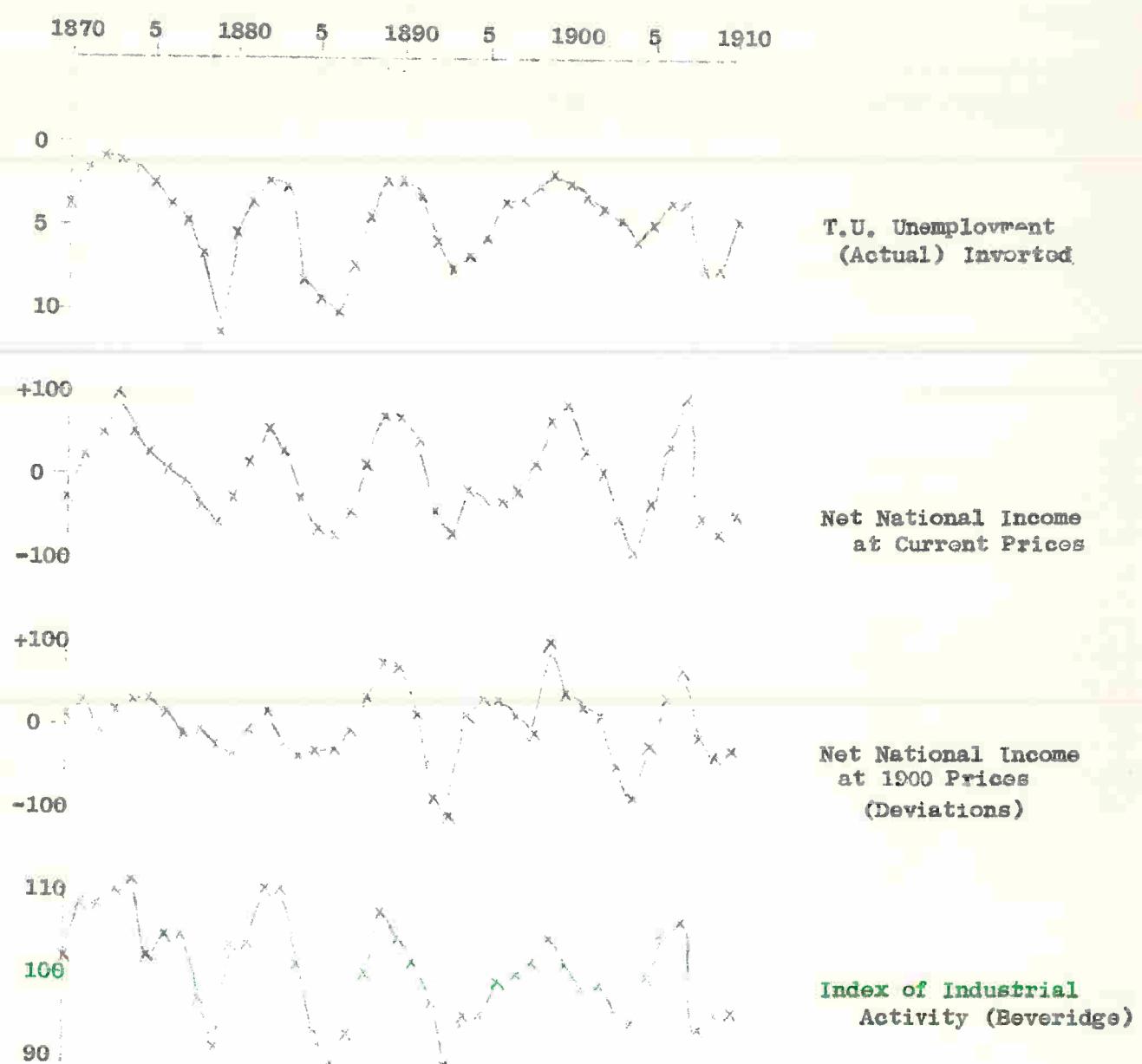


Fig. 1.

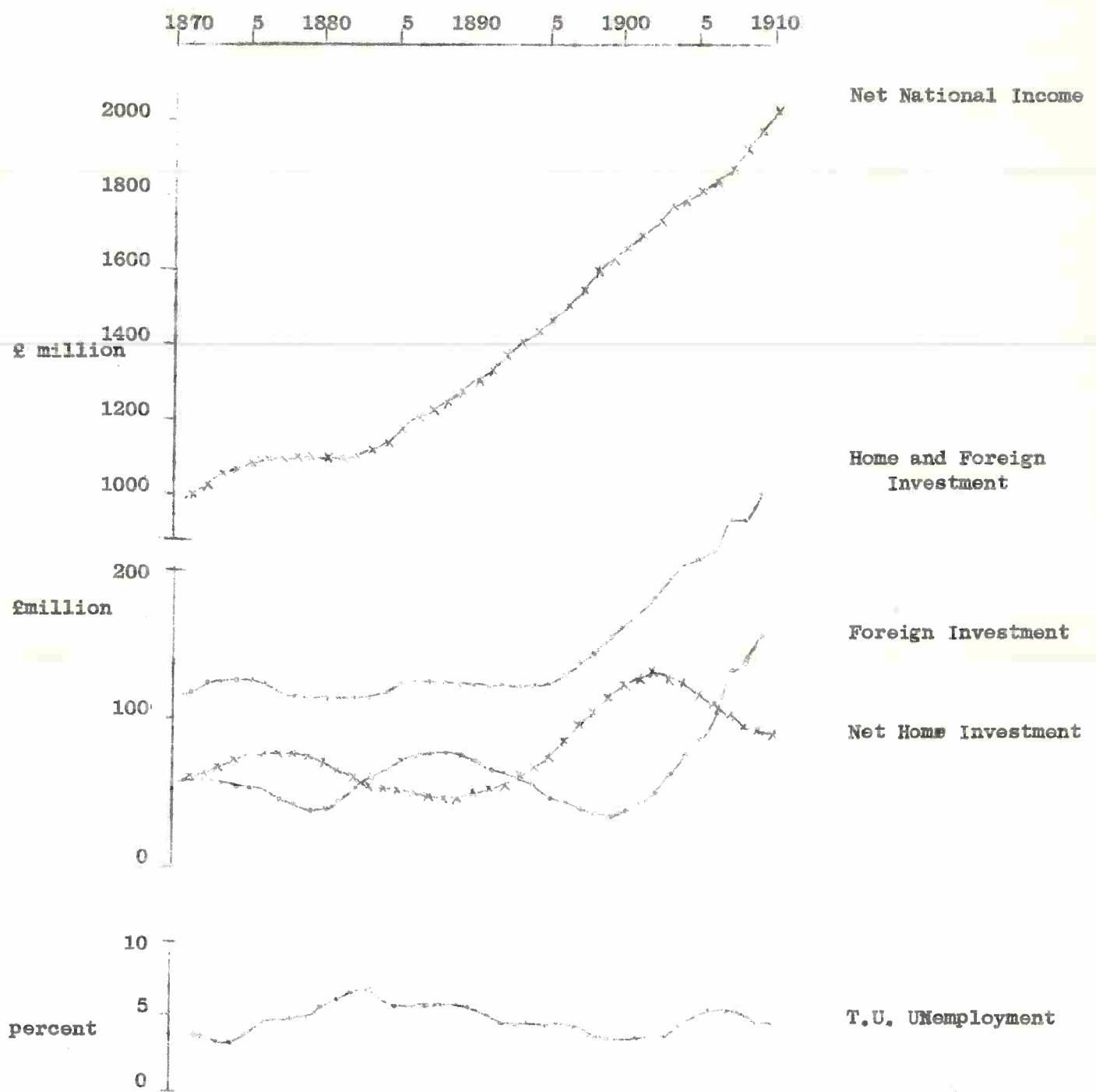


Fig. 2

Before considering deviations it is instructive to look at the behaviour of trends of some of the series as shown in figure 2 where the alternation of home and overseas investment in 18-20 year swings contrasts with the smoother behaviour of money incomes. For, overseas investment by its effects on exports (visible and invisible) tended to influence effective demand and money incomes in the same way as home investment spending but perhaps not to the same extent,<sup>1</sup> so that a large trend rise in home investment was partially offset by dull exports, and a large trend fall offset by rising exports (under the influence of rising foreign investment) as far as their effects on effective demand and money incomes were concerned. The behaviour of the trend of home and foreign investment appears similar to the trend of money incomes for the periods 1870-85 and 1895-1910, but for 1885-1895 the money income trend rises whereas the home plus foreign investment remains constant. However I do not wish to discuss these swings, which it may be a mistake to divorce from the short-run (7-10 year) fluctuations in this 'trend/deviations from trend' fashion.

Consider for example the view of R.C.O. Matthews, referring to the U.K. cycle ...

'.... but the main cause of the seven to ten-year cycles in income seems to have lain in the alternation of two much longer waves in home and foreign investment respectively, unsynchronised with each other.'<sup>2</sup>

I wish to concentrate on the patterns and interrelationships of the deviations, since the addition of home and foreign investment trends provides a smooth trend, and it would seem that the cyclical factors are to be found in the deviations.

It is difficult to specify a typical British fluctuation or cycle; there are certain unique institutional and geographical features to each of the main cycles and associated crises, apart from varied behaviour patterns, yet certain common features thrust themselves forward in the series presented in figure 3. The most dominant is

1. See, A.G. Ford, 'Overseas Lending and Internal Fluctuations: 1870-1914', Yorkshire Bulletin of Economic and Social Research, 1965, p. 24, where it is argued that £100 worth increment in home investment produced a larger increase in effective demand via the multiplier than a similar increment in foreign investment, and it is pointed out that from 1879 to 1909 the trend of unemployment tends to be higher when trend foreign investment is high than when trend home investment is.

2. The Trade Cycle, Cambridge, 1959, p. 223.

1870 5 1880 5 1890 5 1900 5 1910

£ million

Overseas Issues

0

-25

+25

+50

0

-25

25

0

-25

+100

0

-100

+25

0

-25

per cent

Merchandise Exports

Net Home Investment

Net National Income

Current Account  
Balance of Payments

Bank Rate

Absolute deviations from 9-year moving averages  
Fig. 3.

the role of fluctuations in exports, and in particular merchandise exports, for although they formed over the period some 60 percent of merchandise and invisible export earnings, their mean deviation (£17.4 million) was 80 percent of the mean deviation in merchandise and invisible exports (£21.9 million). The behaviour of both export deviations agrees closely and positively with the cyclical behaviour of deviations in net national income (mean deviation £43.9 million) : indeed, to the eye exports play a more dominant role in influencing the behaviour of net national income than net home investment (mean deviation £7.0 million) and in closeness of turning points. This visual impression is borne out in table I where signs of first differences of the deviations of selected pairs of variables are compared.

Table I Signs of First Differences of Deviations 1870-1909

	<u>Similar</u>	<u>Opposite</u>
Merchandise Exports and National Income	34	5
Merchandise and Invisible Exports and National Income	31	8
Net Home Investment and National Income	27	12
Merchandise Exports and Net Home Investment	24	15
Merchandise and Invisible Exports and Net Home Investment	22	17

Although this table gives a qualitative impression and neglects the quantitative strength of similar and opposite groupings, it does suggest a simple Keynesian model to explain deviations in incomes in terms of the 'worked-out' multiplier effects of deviations in exports and in net home investment. Insofar as a constant 'multiplier' is envisaged, this does assume constant marginal propensities to consume and import - or at least that their sum is constant. Accordingly a linear regression equation of the form

$$y_t = a_1 x_t + a_2 i_t$$

where  $y$ ,  $x$ ,  $i$  stand for the deviations in net national income, visible and invisible exports, and net home investment respectively, was fitted by least squares for the period 1870-1909 and yielded the following significant result

$$y_t = 1.635 x_t + 1.228 i_t$$

(0.136)      (0.391)       $R^2 = 0.829$

Durbin-Watson      1.141

This bears out the visual impression, but also suggests that there are some difficulties arising from auto-correlation of the residuals. One interesting result is the difference in the values of the regression coefficients  $a_1$  and  $a_2$  which one might have expected to have been of very similar magnitude since they represent the 'multiplier' influences of export and investment fluctuations. If we assume that their difference is significant, certain possible explanations present themselves. On the one hand it might be that the initial effects of variations in exports and investment made themselves felt on groups with different marginal propensities. Again, if it is recalled that much home investment was financed from undistributed profits and personal loans, a rise in investment might be accompanied by a fall in the proportion of profits paid out as dividends or taken by partners for personal spending, or by a fall in consumption of people making personal loans, so that a given £100 of extra home investment was accompanied by a £25 cut in consumption spending and had a net primary effect on effective demand of £75. (In the case of a £100 rise in exports the primary effect would be £100.<sup>1</sup>)

All this is what one might expect from an economy where export proceeds (both visible and invisible) formed from 30 to 40 percent of national income. Another feature of an export economy is the tendency for the balance of payments current account to improve in export-generated booms and to worsen in slumps, provided that the marginal propensity to save is greater than zero, and that imports are clearly related to incomes and that this function does not shift about too drastically. Although not plotted, deviations in British import values were positively associated with deviations in net national income (30 similar and 9 opposite for 1870-1909) and thus exhibited a broadly similar cyclical pattern as exports (29 similar and 10 opposite for 1870-1909) with a mean deviation of £14.2 million.

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1. Insofar as we are including net income from abroad in export receipts, this is not strictly true, as some part of this would be saved, thereby lessening its impact on effective demand. However the deviations in this item were relatively slight as compared with merchandise exports.

A linear regression equation of the form

$$m_t = b y_t$$

where  $m$  and  $y$  are the deviations of U.K. import values and net national income respectively, was fitted by least squares for the period 1870-1909 to yield

$$m_t = 0.2802 y_t \quad R^2 = 0.6425$$

(0.0335)

Durbin Watson 1.287

Better results would perhaps have been obtained if a price term had been introduced and if imports had been split into foodstuffs and industrial raw materials. However the working assumption of this paper that the deviations of import values were dependent on deviations in money incomes with a given marginal propensity to import is shown to be reasonably satisfactory.<sup>1</sup>

However the expectation that the British current account balance of payments would improve in booms and worsen in slumps is too simple since it only pays attention to the behaviour of exports, and account must be taken of the behaviour of home investment, which exhibited varying patterns over the cycles. When exports and home investment tended to move together, as in the period 1879-1901, theory would suggest that the improvement in the current account in booms would be curtailed as the rise in imports was accentuated, or it might even turn into a deficit, and vice versa in slumps. On the other hand when exports and home investment moved in opposite directions, the swings in the current account should be larger than

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1. If the value of the marginal propensity to import of 0.28 is taken in conjunction with the range of 1.63 to 1.23 as estimates of the deviation 'multiplier' (assuming that multiplier effects largely worked themselves out within a year so that these regression coefficients could be used as estimates) and if taxation leakages are ignored (the marginal propensity to pay indirect taxes was 0.04 approximately), use of the formula for the multiplier  $\frac{1}{1-c+m}$  yields estimates of the marginal propensity to consume of 0.65 to 0.47. If taxation is included the figures would rise roughly to 0.7 to 0.51. Furthermore, the larger estimates, bearing in mind what was said earlier, would seem the appropriate ones to take, since they use the export 'impact multiplier'.

Table 2 Signs of First Differences of Deviations : U.K. 1870-1909

	1870-1909		1870-8 1901-9		1878-1901	
	Similar	Opposite	S	0	S	0
Net National Income and Current Account Balance of Payments	26	13	13	3	13	10
Merchandise Exports and Current Account Balance of Payments	30	9	15	1	15	8
Merchandise and Invisible Exports and Current Account Balance of Payments	28	11	14	2	14	9
Net Home Investment and Current Account Balance of Payments	18	21	7	9	11	12
Net Home Investment and Merchandise Exports	24	15	8	8	16	7
Net Home Investment and Mercandise and Invisible Exports	22	17	6	10	16	7

if exports alone fluctuated, as in 1904-9 for example.

These expectations appear to be borne out. For, in the period 1879-1901 when home investment was reinforcing the effects of exports, net national income and current account deviations showed no clear cur association (13 similar and 10 opposite movements), while the mean deviation of imports was £15.6 million as compared with the 1870-1909 figure of £14.2 million and the mean deviation of the current account was £8.3 million as compared with the 1870-1909 figure of £13.2 million. Again, in the years 1870-8 and 1902-9 when movements in exports and home investment were, if anything, tending to offset each other, there was a strong positive association between deviations in incomes and the current account (13 similar and 3 opposite), while the mean deviation of imports dropped to £12.3 million and the mean deviation of the current account rose to £19.6 million.

Hence, it is not possible to be so categoric and assert generally that the U.K. current account balance of payments improved in booms and worsened in slumps, so far as deviations are concerned, but it is fair to say that there was a general tendency in the periods 1870-9, 1886-93, 1902-9. Likewise it is not possible to assert any general tendency for the behaviour of cyclical movements of home investment and overseas investment (taking the behaviour of the current account as an approximation to movements in realised overseas investment), for there are 18 similar and 21 opposite movements so that it cannot be said that they moved either together or in opposite directions cyclically over the period.

The behaviour of deviations in average annual Bank Rate is of interest in that it displays considerable similar cyclical fluctuations with national income, although there was no thought of using monetary policy for income stabilisation. It was a fortunate accident that Bank Rate tended to be high in booms, low in slumps as a result of the needs of convertibility and made the pre-1914 gold standard a more palatable system than the 1925-31 restoration. Despite Bank Rate's cyclical connection with incomes (30 similar 9 opposite, as well as the visual impression of fig. 3) and a similar but less pronounced connection between the current account and national income (26 similar 13 opposite) there is no such clear-cut relationship between deviations in Bank Rate and in the current account (22 similar 17 opposite). In figure 3, however, for certain periods Bank Rate and the current account are associated positively - 1870-8; 1885-92; 1898-1909. Other things equal on the capital account, this conjuncture would not be expected, and the behaviour of Bank Rate over the cycles needs explanation, and evaluation as a potentially disruptive force.

Now Bank Rate was raised by the Bank of England when its Reserve was experiencing strain or was felt to be inadequate and, if necessary, additional measures were taken to make it effective on the London market rate of discount which influenced international short-term capital transactions: it was lowered when the Reserve was felt to be more than adequate. It is worth suggesting that the magnitude of an 'adequate' Reserve might vary over the cycle in the Bank's eyes - for example, in the later stages of a boom it might revise upwards its notion of 'adequate' when all around there was evidence of growing speculation, reports of malpractice abroad, and the likelihood of international monetary strains. The basic aim of its monetary policy was to maintain convertibility of its notes into gold on demand at face value, and as its Reserve was never usually very big (approximately equal to 2-3 weeks' import payments) speedy action was necessary. Bank Rate, indeed, was adjusted frequently, far more so than for other central banks' rediscount rates, and a distinct seasonal pattern emerged with rising rates in the autumn and falling rates in the early spring.

One source of strain, which tended to grow in booms, lessen in slumps was the Internal Drain, as in booms rising home incomes

brought increased transactions demand for sovereigns and notes to be supplied from the Bank, while in the ensuing slump came the Internal Reflux to help replenish the Reserve. In

Table 4 Bank of England Reserve (quarterly averages) £million

	<u>High</u>	<u>Low</u>
1870-9	20.9	8.6
1880-9	17.9	10.6
1890-9	40.4	13.2
1900-14	32.2	19.5

Source: R.G. Hawtrey, A Century of Bank Rate, London 1938,  
pp. 297-300.

upswings the extra internal demand (relatively to trend) averaged some £2-3 million a year over several years, while the reflux (relatively to trend) was of the same annual order, but usually concentrated in one slump year. Furthermore, there was a seasonal pattern with a net reflux every spring, and a net drain for the rest of the year.

The second and quantitatively more important source of strain was provided by External Drains through adverse balances of payments. It is this which one would expect to be the prime reason for a rise in the rediscount rate in a gold-standard economy experiencing a boom caused by rising domestic investment, as the current account moved into deficit, assuming no change in autonomous capital account transactions. But it would not be expected in an 'export' economy. Now Britain was an export economy and export fluctuations were the major proximate cause of the cycle, and could be expected to bring favourable balances of payments in booms, unfavourable in slumps with external movements in gold more than sufficient to offset internal movements so that the actual cyclical pattern of Bank Rate would not be that expected - other things equal.

However, other things were not equal. In some cycles, as already noted, home investment movements reinforced fluctuations in exports and caused a greater rise in imports so that the expected improvement in the current account was diminished or even turned into a deficit in booms, and in slumps the deterioration was less marked or even became an improvement (relative to trend). This together

with the internal movements provides one strand of explanation of the cyclical pattern in Bank Rate, especially for the years 1879-1901.

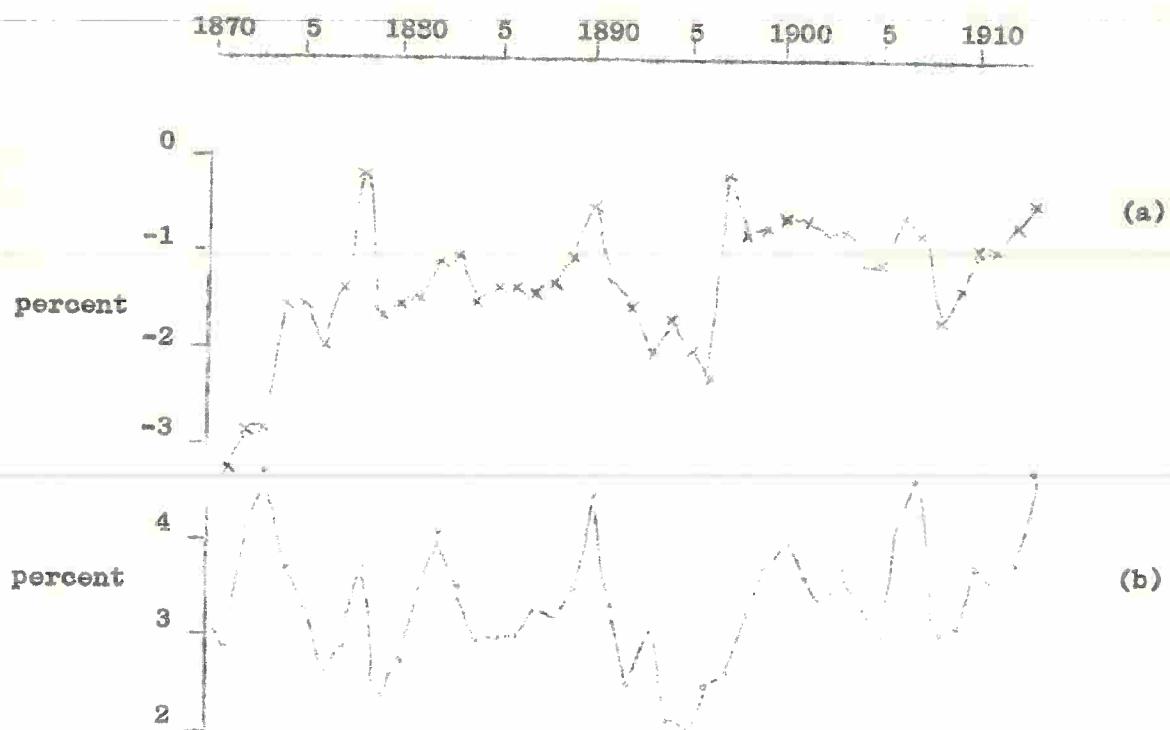
Of more importance, in my view, were the capital account items in the British balance of payments in explaining monetary stringency in booms in Britain, a gold standard export-economy, and monetary ease in slumps. In upswings the Bank of England was subject to external drains because of the tendency for British lending abroad (both short term and long term) with a given interest rate structure to exceed the emergent current account surplus so that the basic (autonomous) balance moved into deficit. Strain was thrust on the Reserve and Bank Rate was increased. In slumps (with falling exports) even though the current account tended to worsen relatively to trend, the fall in lending abroad with a given interest-rate structure exceeded the deterioration in the current account so that the basic (autonomous) balance moved into surplus again. The Reserve position became more comfortable so that Bank Rate could be cut speedily in the downswing.

The behaviour of overseas issues on the London Stock exchange is taken as evidence of the behaviour of intentions to lend abroad, since it was the principal vehicle of British overseas capital formation, and it is noteworthy in figure 3 that peaks and troughs in this precede peaks and troughs in incomes and in Bank Rate - for example, in 1872, 1881, 1889, 1905 - so that the suggestion above appears well borne out. Indeed, before 1893 the cyclical movement in overseas issues which leads the cyclical movement in incomes by 1-2 years is particularly marked, and later will be treated as of great importance.

Table 5 Signs of First Differences of Deviations U.K. 1870-1910

	1870-1910		1870-1893		1893-1910	
	Similar	Opposite	S	O	S	O
Incomes and Overseas Issues	25	15	16	7	9	8
Incomes and Overseas Issues <sub>-1</sub>	27	13	21	2	6	11
Incomes and Overseas Issues <sub>-2</sub>	26	13	17	5	9	8

What, then, were the effects of Bank Rate whose rise and fall have been explained in general terms? Did monetary forces choke off the boom? Will such forces help to explain turning points? These matters may be worth more attention, perhaps, than has been accorded them in recent years.



(a) Rest of World S.T. Rate and U.K. 3 Month Bank Bill Rate Differential

(b) Bank Rate - annual average

The main immediate influence of Bank Rate (when effective) was on international short-term money flows by narrowing the differential between yields on bills in London and in other monetary centres to encourage profit seeking bankers to switch their funds to London and perhaps to deter short-term borrowing by foreigners. In figure 4 the differential between the Bank bill rate in London and the short-term interest in the rest of the world is plotted against Bank Rate (all annual averages) and it is clear that the differential (negative) narrows when Bank Rate rises, especially at some of the main crises, and that too, despite similar rises elsewhere.

This mechanism provided quick defence of the Reserve and the sensitivity of such capital movements to British short-term interest rates was the reason why the Bank and London could do so much on such a small Reserve. However, it is important to note that the manipulation of Bank Rate and the changed flows of funds had secondary effects elsewhere. The flow of funds to London, when Bank Rate was raised effectively, naturally thrust monetary difficulties and rising short-term rates onto other developed monetary centres (Berlin, New York, and Paris especially) as they increased their rediscount rates in a protective as well as a rather immaturely imitative fashion. Further, the same pressures which prompted the rise in Bank Rate might of their own be causing strains in these centres and bringing increases in rates. (For example, the Balkan troubles and needs of the belligerents to borrow in 1912-3.) The parallelism in monetary conditions (especially in short-term markets) which occurred in these developed monetary centres can be explained thus, for international forces and the maintenance of convertibility dominated policy. Certainly, the main centres were 'together in behaviour' at each of the main crises of the period, and all this may help somewhat to explain elements of the cyclical parallelism between Britain and other (developed) economies. Insofar as the funds moving to London were withdrawn from much less developed monetary markets and banking systems (for example, from parts of Latin America, or parts of the Empire), these centres experienced liquidity troubles and possible checks to activity as commercial banks with no 'lender of last resort' facilities sought to restore desired cash ratios by cutting lending.

The direct cost effects of Bank Rate on domestic investment spending have generally been thought to be weak ; certainly variations in Bank Rate brought changes in short-term interest rates to which investment spending was insensitive, but did not influence substantially longer-term rates to which such spending might be more sensitive.<sup>1</sup> Furthermore, the nature of finance of home investment from undistributed profits and private loans rather than the Stock Exchange would lessen sensitivity to interest-rate changes and their associated cost effects. Of more significance were the effects which changes in Bank Rate had on profit expectations (the 'confidence' effect) and perhaps the liquidity effects.<sup>2</sup> In the period 1870-1909 there are 22 similar movements in first differences of deviations of Bank Rate and net home investment and 17 opposite, so that no clear cut relationship is apparent.

However, the effects of variations in Bank Rate might have more influence on overseas investment which was financed principally through overseas issues on the London Stock Exchange. Difficult stock market conditions and growing money market stringency associated with rising Bank Rate could well lead issuing houses and underwriters to postpone or abandon a projected issue or to quote such onerous terms that the prospective overseas borrower preferred to wait or do without, and vice versa at times of monetary ease. Such forces would be more important in the case of fixed-interest bearing stock which indeed formed the main instrument of overseas borrowing rather than equity. In practice one finds peaks in overseas issues occurring before peaks in Bank Rate and incomes as overseas issues finally fell after (several successive) rises in Bank Rate, but it could be argued that such turning points were not so much caused by rises in the cost of finance and its diminished availability, as by changes in confidence

1. cf. 'We have already observed that the influence of interest rates on the course of investment activity - which is the chief influence interest rates exert, according to our results - is only moderate.' J. Tinbergen, Business Cycles in the U.K. 1870-1914, Amsterdam, 1956 p.133 (second edition). cf. J.S. Pesmazoglu, 'A note on the Cyclical Fluctuations of British Home Investment 1870-1913' Oxford Economic Papers, 1951, p.61.
2. See 'Inquiry into the effects of Dear Money on Home Trade', The Economist, 23 and 30 November 1907, and A.G. Ford, The Gold Standard 1880-1914, Oxford, 1962, pp.44-6.

and by revisions downwards of overseas prospects with fears of crisis abroad. Perhaps, the same factor which caused a fall in overseas issues caused the continuing rise in Bank Rate.

If the first differences of deviations of Bank Rate and overseas issues are compared for 1870-1909, there are 17 similar movements and 22 opposite : in the first part of the period, 1870-1892, there are 14 similar and 8 opposite (this was the period when the one-year lead of overseas issues deviations over exports and incomes is so marked), while from 1892-1909 there are 3 similar and 14 opposite movements. Such comparisons are misleading because there are two processes at work whose relative strength varied: (a) a surge of overseas lending brings balance of payments strain and rising Bank Rate; (b) the rise in Bank Rate may bring (or be associated with) a fall in overseas issues. In the early stages of an upswing we might expect to find (a) dominant with rising overseas issues and rising Bank Rate, but in the later stages (b) asserting itself with rising Bank Rate and falling overseas issues. Likewise in the downswing falling overseas issues permitting falling Bank Rate could well dominate until overseas lenders recovered their nerve to yield falling Bank Rate and rising overseas issues. I suggest that this sort of pattern is discernible, especially from 1870-1893 and after 1908 (where raw data have to be used). From 1870 to 1872 overseas issues and Bank Rate both rise, 1872 to 1873 then yields a continued rise in Bank Rate and a fall in overseas issues; the same pattern is found for 1879-81, and 1881-2. In 1885 after continued falls in Bank Rate overseas issues recover and continue to rise with rising Bank Rate from 1886 to 1889, after which they decline with 1890 showing the Bank Rate peak. Both decline after the Baring Crisis, with overseas issues deviations showing some recovery in 1894. These joint patterns are less clear-cut after 1893 until 1909 onwards, and it would appear that the (b) relationship of opposite movements dominates in those years. Such happenings provoke the speculative thought of whether the trade cycle changed its character in the mid-90's until 1910.

At these crucial times just before the peaks of 1873, 1882, 1890 and perhaps 1906, the question arises whether it was the final Bank Rate increases as the peak of the boom was reached which finally choked off overseas issues with monetary stringency deterring would-be borrowers and issuing houses, or whether the marginal efficiency estimates of overseas investment were cut sharply as news of

speculative excesses, profligacy, blighted prospects and evidence of over optimism and of myopic greed came into London. The answers given will have an important bearing on the mechanisms of the cycles and the view that monetary forces deserve a place. Certainly detailed study is necessary, which would perhaps be out of place in a general survey such as this, but a casual example will illustrate the point.

One year before the peak of 1890 overseas issues fell, especially those to Argentina, and Bank Rate continued to rise. Events in Argentina from late 1888 onwards had caused a rapid and pessimistic reappraisal of projects there and a check to the previous heady optimism (the British public were more alert than Baring Brothers!) so that Argentine issues met with an unfavourable market reception in London. Lending to Argentina declined, thereby precipitating the crisis there and leading to a decline in British export sales thence. Confidence in other areas also (e.g. Australia) was shaken and a general decline in overseas lending took place. In 1912-3 tight money in Europe generally prevailed with a high Bank Rate, and this brought a postponing of London issues for Argentina as companies waited for easier terms which came in 1914. Argentina experienced a decline in the proceeds of foreign borrowing, lost gold, with credit contraction being enforced in 1913 which served to check British export sales thence. These contrasting episodes prompt the query whether the repercussions of the Bank of England's monetary, or more strictly speaking Bank Rate, policy are worth more attention in the cycle.

This study has placed prime emphasis for the proximate causes of fluctuations in U.K. money incomes on fluctuations in export values, aided (or at times impeded) by fluctuations in home investment as a junior partner. Further, it has been suggested that changes in short-term interest rates had slight influence on home investment spending, but mainly made their impact on international capital movements. By implication the role of (autonomous) fluctuations in the stock of money as a causative factor has been relegated to insignificance. Rather, the opinion is taken that the stock of money, in particular bank deposits (and discounts and advances), adjusted to demands for accommodation and was thus a somewhat passive feature, although rising demands in booms led to rising bill rates (if the supply was not perfectly elastic) and facilitated the Bank of England's task of making Bank Rate effective

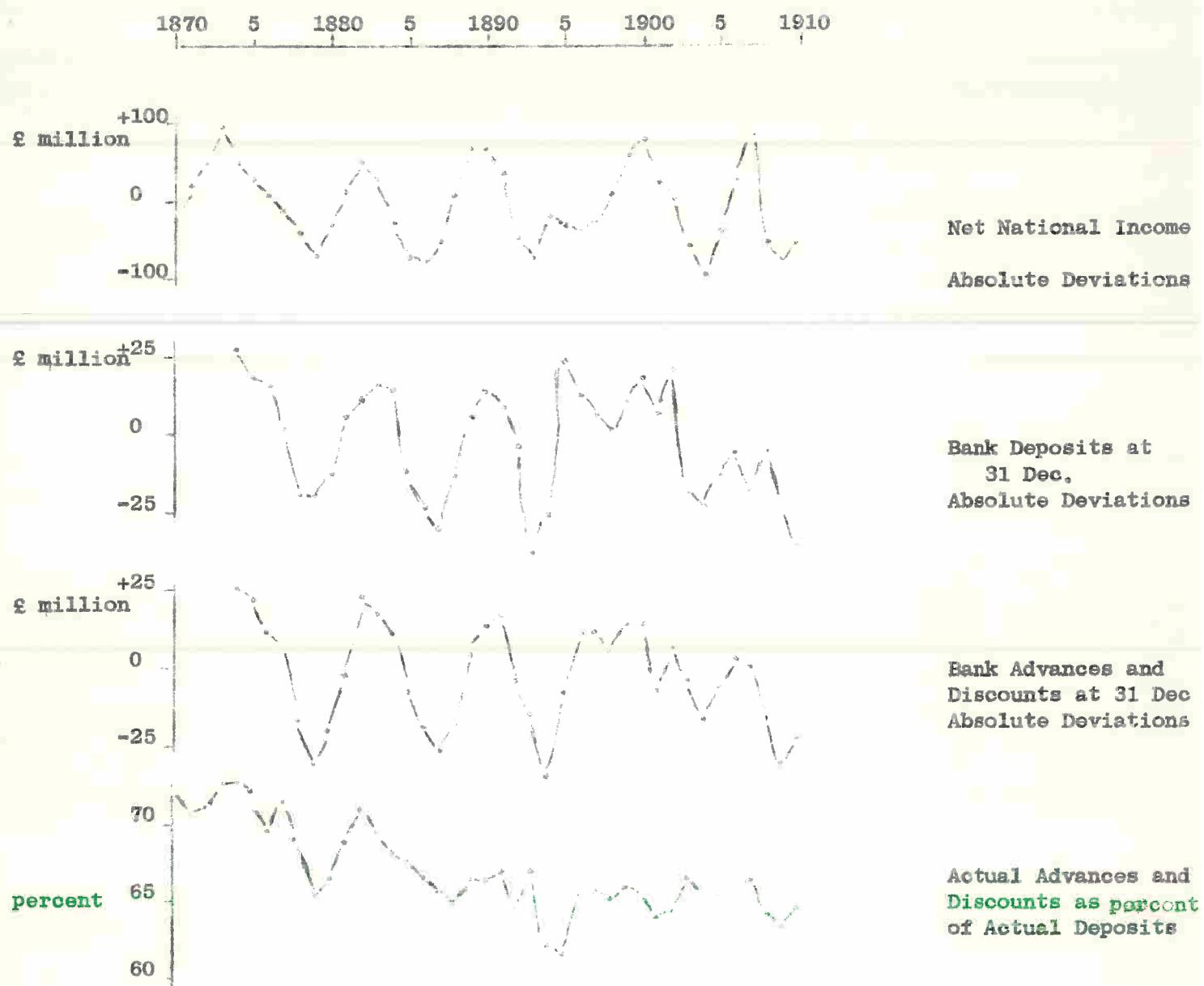


Fig. 5

at times when strain on its Reserve was associated with upswings, ease with downswings. The Bank does not appear to have deliberately expanded its domestic assets as its international assets rose, or vice versa, as the Rules of the Game doctrine would demand<sup>1</sup> - such primitive open market operations as the Bank undertook were purely to make Bank Rate effective. The domestic monetary situation has been well summed up by R.S. Sayers :

'We may conclude, therefore, that within the banking system itself interest rates were substantially, but by no means universally, moved with Bank Rate, and that a movement of Bank Rate would probably be accompanied by some change in the availability of bank credit, though the absence of traders' complaints suggests that the latter effect cannot have been marked.'<sup>2</sup>

In figure 5 the behaviour of deviations in bank deposits and discounts and advances at 31st December of the years concerned and national income are compared together with the movements in total advances and discounts as a percentage of total deposits, while the behaviour of first differences of deviations is presented in table 6.<sup>3</sup>

Table 6 Signs of First Differences of Deviations

	1870 - 1910	1870-1893		1893-1910				
		Similar	Opposite	S	O	S	O	
Deposits and net national income	*	26	10	16	3	10	7	
Deposits and Bank Rate	*	19	17	12	7	7	10	
Advances and discounts and net national income	*	28	8	17	2	11	6	
Advances and discounts and Bank Rate	*	23	13	13	6	10	7	
Advances and discounts	and net national income	Deposits	26	14	15	8	11	6
Advances and discounts	and Bank	Deposits	29	11	17	6	12	5

Notes: \* 1874-1910

Advances and discounts  
Deposits : first differences of actual figures

1. See A.I. Bloomfield, Monetary Policy under the International Gold Standard : 1880-1914, New York, 1959, pp.47-51.

2. R.S. Sayers, Central Banking After Bagehot, Oxford, 1957, p.64.

3. The banking statistics are taken from J. Tinbergen, Business Cycles in the United Kingdom 1870-1914, Amsterdam, 1951. They are not very satisfactory in terms of compilation, but their behaviour perhaps gives a rough idea of actual banking behaviour. See R. Higonnet, "Bank Deposits in the U.K. 1870-1914", Quarterly Journal of Economics, 1957, pp.329-67 for a critical account.

Both deposits and discounts and advances display considerable cyclical agreement with fluctuations in net national income with the agreement being decidedly stronger in the period up to 1893, after which the clear cyclical pattern becomes obscured. Less certain are the relations between Bank Rate and deposit deviations, while advances and discounts tended to rise and fall as Bank Rate rose and fell. The ratio of advances and discounts to deposits is associated positively more closely with Bank Rate fluctuations than with national income, and more evenly over the whole period than the other comparisons. It certainly appears that in booms bankers met increased demands for accommodation by becoming less liquid, while in slumps they became more liquid (interpreting 'less liquid' as a rise in this ratio). The deviations in deposits and in advances and discounts have roughly similar turning points as net national income, particularly before 1893. The patterns of behaviour displayed in these series, together with the diminished size of deviations after 1895, would appear to fit in with earlier opinions that fluctuations in the money stock were not an important feature of the cycles in Britain.

It has been shown that fluctuations in export proceeds (both merchandise and invisible) were a main cause of fluctuations in British money incomes and that in particular much of the absolute deviation in the former was attributable to fluctuations in merchandise exports which were more volatile than deviations in service earnings and in income from abroad.<sup>1</sup> What, then, caused British merchandise export values to fluctuate relatively to trend in this cyclical fashion? This section will seek to answer this question.

Merchandise export values fluctuated as a result of similar fluctuations in prices and volumes with the volume fluctuation exceeding the price fluctuation in percentage terms. The mean deviation of export values amounted to some £17 million over the period, while the mean deviation of export volumes (valued at 1880 prices) was £13 million. One important element in this was that

1. Much of the services earnings (shipping and financial) were closely linked to the course of British and world trade, and these latter fluctuated together so that services earnings moved closely with British export sales. Income from abroad was linked both to the pace of overseas activity and to the flow of British overseas lending. Bearing in mind its fixed interest element, the comparatively small deviations in income from abroad are not surprising.

1870 5 1880 5 1890 5 1900 5 1910

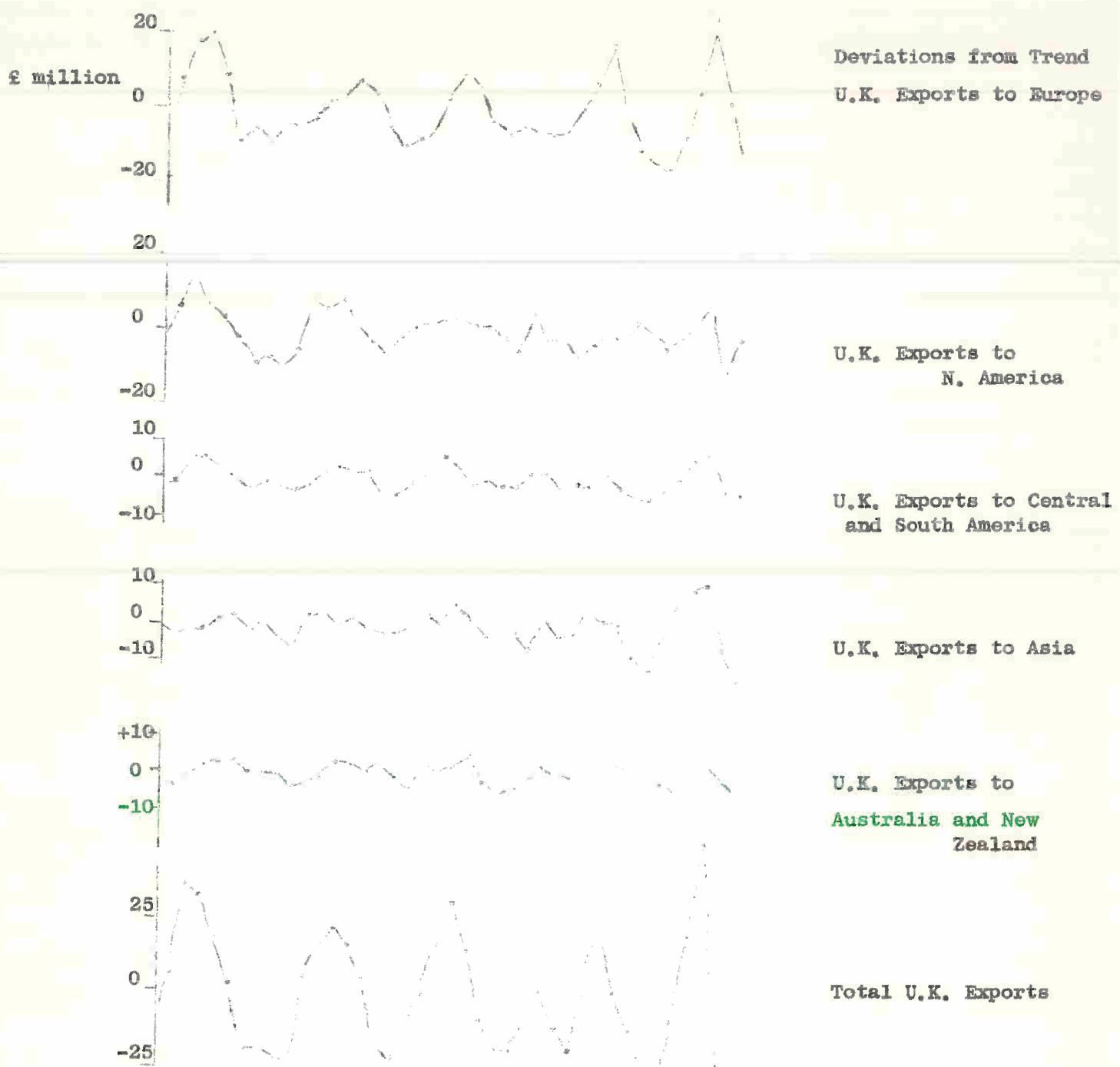


Fig. 6.

the rising world demand for British goods brought increased demand for raw materials whose prices rose, thus causing industrial costs and prices to rise, so that Britain in booms experienced rising export and raw material import prices, and on the other hand in slumps falling export and import prices - a by-product was the dampening of movements in the British terms of trade over the cycle.

A geographical break-down of British merchandise export values into Europe, North America, Central and South America, Asia (mainly India), and Australia and New Zealand provides evidence of varied trends and varied cyclical behaviour of the component series, although as the period wears on more complete accord is found between the deviations.<sup>1</sup> The importance of various areas differs in the cycles, except that the European market dominates in providing the chief source of absolute fluctuations in export values and of showing the closest accord with cyclical turning points in British activity (see figure 6 and table 7).<sup>2</sup> It should be pointed out that the 'Europe' category comprises a large group including Turkey, Egypt and North Africa, but one close-knit with trade ties, in which British export sales to France, Germany, Holland and Belgium comprised over half total British export sales to 'Europe'. By the turn of the century Germany was proving a better customer for Britain than the United States, though a poorer customer than India. From this it is clear that the role of the 'Atlantic' economy in generating economic fluctuations in Britain needs reassessing in the light of the influence of Europe on British exports and incomes, even though the volatility of deviations of N. American exports was greater than European (expressed as percentage of trend). It is possible to lump the Americas together to try to preserve the role of the Atlantic economy but this is mistaken, in my view, since direct trade and finance connections between them (especially the United States with Argentina and Brazil) were weak in this period.

1. See A.G. Ford, 'A note on the Role of Exports in British Economic Fluctuations, 1870-1914', Economic History Review, 1963-4, pp.328-337.

2. In terms of mean deviations, Europe was £8.1 million, N. America £3.4 million, Central and S. America £2.5 million, Asia £3.6 million, Australia/N.Z. £2.3 million.

Table 7 Signs of First Differences of U.K. Export Deviations 1870-1909

			Similar	Opposite
Total U.K. Exports and U.K. Exports to Europe			32	7
" " " " " " " N. America			30	9
" " " " " " " Central & S. America			30	9
" " " " " " " Asia			27	12
" " " " " " " Australia/N.Z.			29	10
U.K. Exports to N. America and U.K. Exports to Europe			25	14
" " " " " " " Central and S. America			31	8
" " " " " " " Australia/N.Z.			22	17
U.K. Net National Income and total U.K. Exports			34	5
" " " " " U.K. Exports to Europe			35	4
" " " " " " " N. America			29	10
" " " " " " " Central and S. America			29	10
" " " " " " " Asia			28	11
" " " " " " " Australia/N.Z.			26	13

Between 1870 and 1885 North America appears of roughly equal importance with Europe in terms of absolute deviations, while South America becomes more volatile in 1885-1891, and after 1890 Asia, North America and Europe all fall together. However after 1890 Europe becomes more important, to be rivalled by Asia after 1900, and all series move up and down in unison for the upswing to 1907 and the subsequent slump. Further support for the demotion of North America as the source of the cycles is provided by figures for cyclical correspondence in 1879-1914 for Britain, the United States, France and Germany : all four reference cycles were in the same phase in 53.5 percent of all months, but if the United States is deleted, the three European reference cycles were in the same phase in 83.1 percent of all months.<sup>1</sup> Certainly as the world economy developed and became more linked together with more multilateral settlement patterns, the speedy international transmission of fluctuations was facilitated, but this should not lead to the uncritical assertion that a slump or boom in one part meant automatically

1. O. Morgenstern, International Financial Transactions and Business Cycles, Princeton, 1959, p.43.

slumps or booms in other parts. Europe and North America were in opposite phases on several occasions as indeed has certainly happened in more recent times (for example, in the 1950's).

While it is necessary to recognize exogenous elements which influenced British export performance, nevertheless it is appropriate to investigate the extent to which British export sales were influenced by the variability of British overseas investment. Overseas issues, which were the principal vehicle of British investment abroad and were in this period in terms of raw data of comparable magnitude to the calculated ex post investment abroad (from the balance of payments), are employed as an indicator of both relative and absolute variations in ex ante British overseas investment. For what is important here is how the decision to lend abroad affected the British economy as well as the borrower.

It is clear from figure 3 that turning points in overseas issues deviations lead turning points in British export deviations (and in net national income) especially in the period from 1870 to 1895 by one year, while after 1895 the lead lengthens and the relationship appears less close until after 1908, when the surge in overseas issues until 1913 was accompanied by rising exports but cannot be shown here because of the use of moving averages.<sup>1</sup> Furthermore, the absolute size of these deviations in overseas issues were of comparable magnitude to the size of export deviations, at least until the turn of the century. Table 8 reinforces the

Table 8 Signs of First Differences of Deviations

	1870 - 1910		1870-93		1893-1910	
	Similar	Opposite	S	O	S	O
Merchandise Exports and Overseas issues	26	14	17	6	9	8
Merchandise Exports and Overseas Issues <sub>-1</sub>	28	12	20	3	8	9
Merchandise Exports and Overseas Issues <sub>-2</sub>	24	15	16	6	8	9
Net National Income and Overseas Issues	25	15	16	7	9	8
Net National Income and Overseas Issues <sub>-1</sub>	27	13	21	2	6	11
Net National Income and Overseas Issues <sub>-2</sub>	26	13	17	5	9	8

1. Turning points in British overseas issues also lead turning points in the World Trade Index. See A.G. Ford, Economic History Review, 1963-4, p.335. In 1900 British trade was some 25 percent of total world trade, and thus its movements had considerable influence on the behaviour of world trade.

graphical conclusions by indicating that for the whole period the strongest qualitative association between merchandise export behaviour (and net national income) and overseas issue behaviour is obtained with a lead of one year of issues over exports. Most noteworthy as well is the very strong relationship for the period 1870-93, and the marked change for 1893-1910 when the previous clearcut relationship disappears. This, it should be recalled, was the period when overseas issues appeared more sensitive to Bank Rate changes in an inverse way, and when other countries were growing in relative importance in world trade so that the purely British influences were diminishing in importance. Furthermore, overseas issues for many of the years from 1893 to 1910 were secularly low.

Secondly, much of the British overseas lending in the whole period was essentially developmental in character - public and private borrowing to finance the construction of railways, ports, public utilities, or in general terms to create the requisite social overhead capital, together with mines and land companies - and was frequently undertaken to increase the output of primary products for export in the borrowers. It was directed mainly to the 'empty' lands together with migration of labour from Europe (for example, to Canada, Australia, New Zealand, South Africa, the United States, Brazil, Argentina, Chile) to promote these ends, while diminishing amounts went to Europe and increasing amounts to India.

Thirdly, extra finance often formed a necessary pre-condition of a rise in economic activity in certain parts of the world, especially those which had rudimentary domestic banking systems, which possessed no central banks, or which relied for bank services on the Anglo-Imperial or anglo-foreign banks based in London, and which adhered to some variant of the gold standard.<sup>1</sup> Rising British overseas lending helped to supply this in the short-run, but as the loans were used to buy imports, the reserve position weakened and more finance was needed to prolong the growth in activity. Furthermore, the drying-up of overseas

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1. The commercial banking systems in these circumstances certainly appeared to operate the 'rules of the gold standard game' - if only because their overseas balances (their foreign exchange reserves) and their gold holdings were their cash reserves as well, and the 'rules' fitted in with commercial prudence and the maintenance of banking solvency.

investment by Britain could impose a (severe) liquidity crisis in such borrowing countries as well as other deflationary pressures as spending financed from overseas borrowings declined, which might easily spread to more developed monetary centres. Depressive tendencies could easily be initiated by the international spread of declining expenditure and through the collapse of excessively optimistic expectations, just as expansionary forces were spread in upswings of British overseas lending.

In more detail it is important to ask how the recipients of British overseas lending used the proceeds. The answers can be categorised as follows : (a) to buy directly imports of (capital) goods or materials needed for their construction; (b) to finance foreign debt service charge payments (both old and new); (c) to finance extra home spending, which through multiplier effects caused their purchases of imports of goods of all sorts to rise. Hence some (substantial) rise in British exports, invisible as well as merchandise, might be confidently expected to follow an increase in British overseas lending as a result of the borrowers' use of the proceeds, and the stronger the informal bilateral trading links the greater the stimulus exerted on British exports with imperial links having particular importance. Likewise, when British overseas lending declined, a decline in British exports might be expected to follow shortly.

Before proceeding to explain fluctuations in British money incomes as a result of such export fluctuations, it is vital to ask how the loans were raised in Britain. For, if they were raised at the expense of home spending - as they certainly were in the long run in terms of trends - then the stimulative effects of improved export sales would be offset by the depressive effects of falling home (investment) expenditure and the multiplier influence on incomes might even vanish. If this were found in terms of the behaviour of deviations as well as trends, then one would expect cyclical patterns to be upset as the effects of a given rise in exports on incomes and imports were damped down. This is not so, in fact. As earlier shown there was a tendency for deviations in home investment to reinforce the behaviour of exports in the years 1879-1901 especially, while in the other years when no clear pattern emerged the size of fluctuations in home investment was quite outweighed by that of exports.

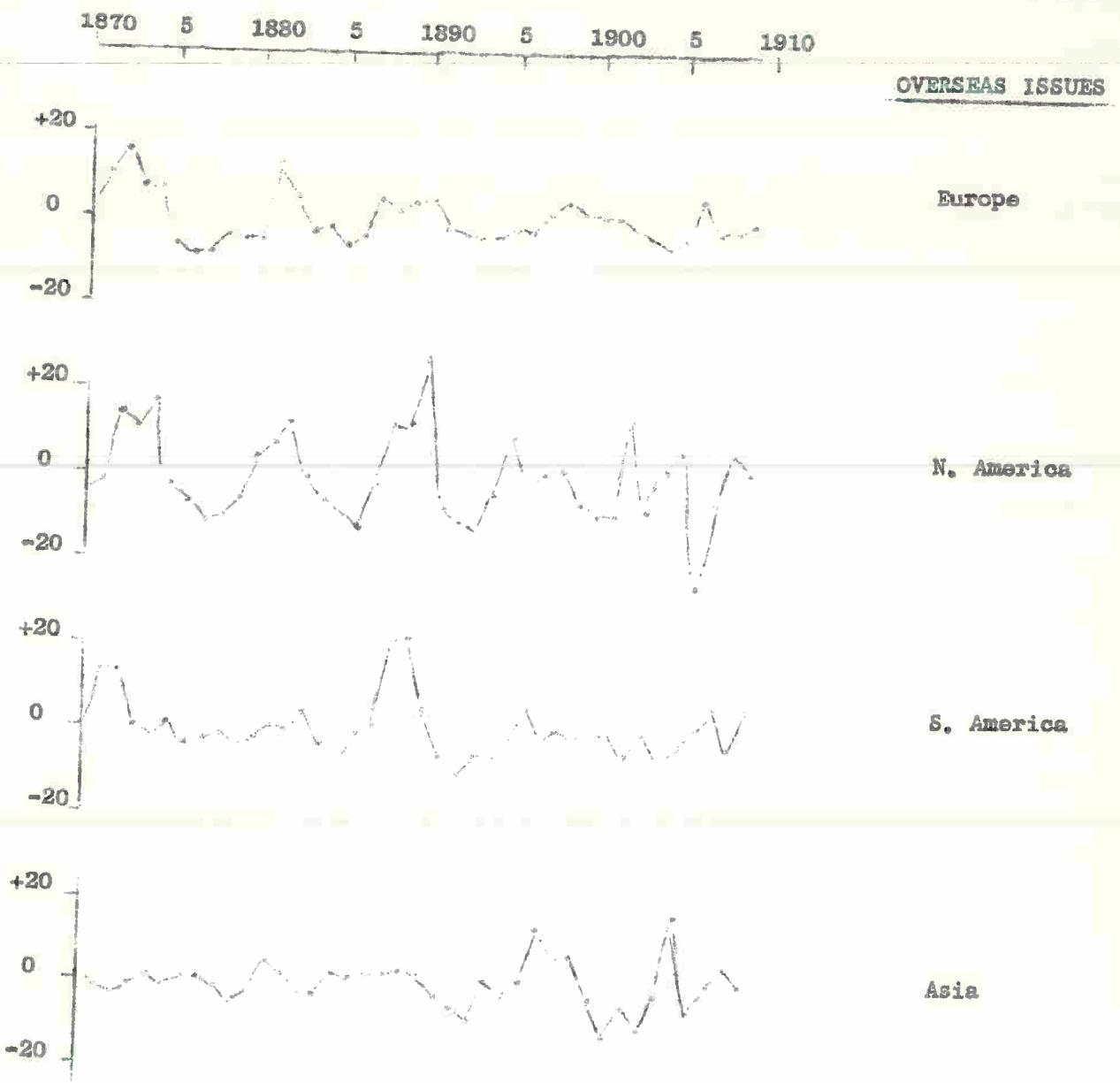
Table 9 Signs of First Differences of Deviations

	1870-1910		1870-93		1893-1910	
	Similar	Opposite	S	O	S	O
Net Home Investment and Overseas Issues	23	17	14	9	9	8
Net Home Investment and Overseas Issues <sub>-1</sub>	25	15	17	6	8	9
Net Home Investment and Overseas Issues <sub>-2</sub>	27	12	17	5	10	7

Further, if anything, fluctuations in overseas issues were positively associated with net home investment fluctuations, as table 9 would indicate, while the mean deviation of overseas issues is £18.5 million as compared with £7.0 million for net home investment. The cycle, then, is not obliterated because in some cases the deviations in overseas issues and exports quite outweighed the opposite deviations in home investment, and in the other cases the investment deviations reinforced the export deviations.<sup>1</sup> It also emerges that in the short run much of overseas investment deviations must have been financed from previously idle money holdings in booms, and in slumps these were replenished.

As fluctuations in export values have been adduced as the main immediate cause of cyclical fluctuations in British money incomes and employment, it is attractive to consider that the former were a direct result of the variability of ex ante British overseas lending which led them so distinctly in the years before the turn of the century. This assertion is, however, too simple and uncritical : on the one hand it neglects the differences which emerge for the periods 1870-1893 and 1893-1909, while on the other it is framed at too aggregative a level. Recall of the geographical breakdown of deviations in British merchandise exports and overseas issues makes it clear that the influence of overseas issues fluctuations on exports could only have been partially bilateral since over the period British lending to Europe diminished to small figures whereas the behaviour of exports to Europe provided some considerable part (at least 40 percent) of the explanation of absolute fluctuations in British export values.

1. This is assuming reasonably stable consumption and import functions over the courses of the cycles.



Absolute deviations from 9- year moving averages

Fig. 7.

This point is examined in more detail with the aid of figure 7 in which the series of overseas 'calls' compiled by M. Simon for particular geographical areas are plotted, to compare with the series of merchandise export values for similar areas. Although the classifications may not be precisely the same, nevertheless it is felt that any errors arising from marginal classification discrepancies would be slight and thus the comparison would be worthwhile. Initially there is close correspondence between

Table 10 Mean Deviations £ million 1870-1909

	British Merchandise export values	Overseas Issues
Europe	8.1	4.4
North America	3.4	8.4
South America	2.5	4.9
Asia	3.6	3.8
Australasia	2.3	2.3

deviations in overseas issues and in exports for the main areas both as regards size and timing (allowing for leads) until 1885. Thereafter the amplitude of fluctuations in British exports to Europe exceeds considerably the amplitude of overseas issues thence, while the case is reversed for North America, and to a lesser extent for South America and Asia, where the amplitude of issues exceeds that of exports. Some of the explanation may lie in the fact that funds for these areas were raised at concentrated times but spent gradually as the development projects required. Certainly there are tendencies for turning-points in issues to lead export turning-points by up to two years in the European, North American and Asian series. Nevertheless, figure 7 is also strongly suggestive of multilateral channels of influence and settlements involving particularly the Americas and Europe together with Britain.

In this period many of the underdeveloped borrowers purchased at least three-quarters of their imports from continental Europe and Britain with the British share being noticeably higher in the case of 'Empire' territories. Secondly, they paid almost all their foreign remittances of interest and profits to Britain, France and Germany, while a world trade boom (partially initiated by a surge in British overseas

lending) increased the demand for shipping, and forced up both shipping rates and the price of coal, and on the other hand these prices declined in trade slumps. Hence variations in British overseas lending which reacted on the merchandise and invisible exports of Britain directly and incomes, also affected European exports and incomes in the same way, so that repercussion effects influenced British exports to Europe and European exports to Britain. Furthermore, the value of British coal exports to Europe (an important trading item in the later part of the period) were more variable because of the sharp cyclical variations in the price of coal. However, these repercussion effects in themselves were not likely to be strong enough to explain the observed variations.

Rising or falling activity initiated by the variability of British overseas lending could certainly touch off further expansionary or contractionary forces elsewhere, and the factors which attracted or repelled British interest abroad also likewise affected other (European) countries. This reinforced the earlier-mentioned trade effects in stimulating similar movements in activity in Europe and Britain, while psychological forces further helped to cause profit expectations to rise or fall together in Europe and Britain to enhance the booms and aggravate the slumps. Revision of these and stops and starts in overseas lending are one important ingredient in explaining the turning points in British and European economic fluctuations, while the way the gold standard mechanism actually operated to cause European monetary policies to mirror the Bank of England's actions ensured that the upper turning points were associated with increasing monetary stringency and lower turning points with ease. In these ways some of the distinct tendencies towards cyclical parallelism in Britain, France, and Germany (as well as the purely British turning points) can be explained, although this is not the whole story by any means. Chance elements must not be neglected, nor must the growth of the American economy and its own autonomous cycles.

Up to now it has been argued that British economic fluctuations in this period were intimately bound up with a particular process of international economic development in a private enterprise setting. It might be suggested that when an investment boom was underway in primary producers with high marginal propensities to import, the 'induced' effects of their increasing activity might well be felt in Britain as demand rose for British (exportable) output and extra

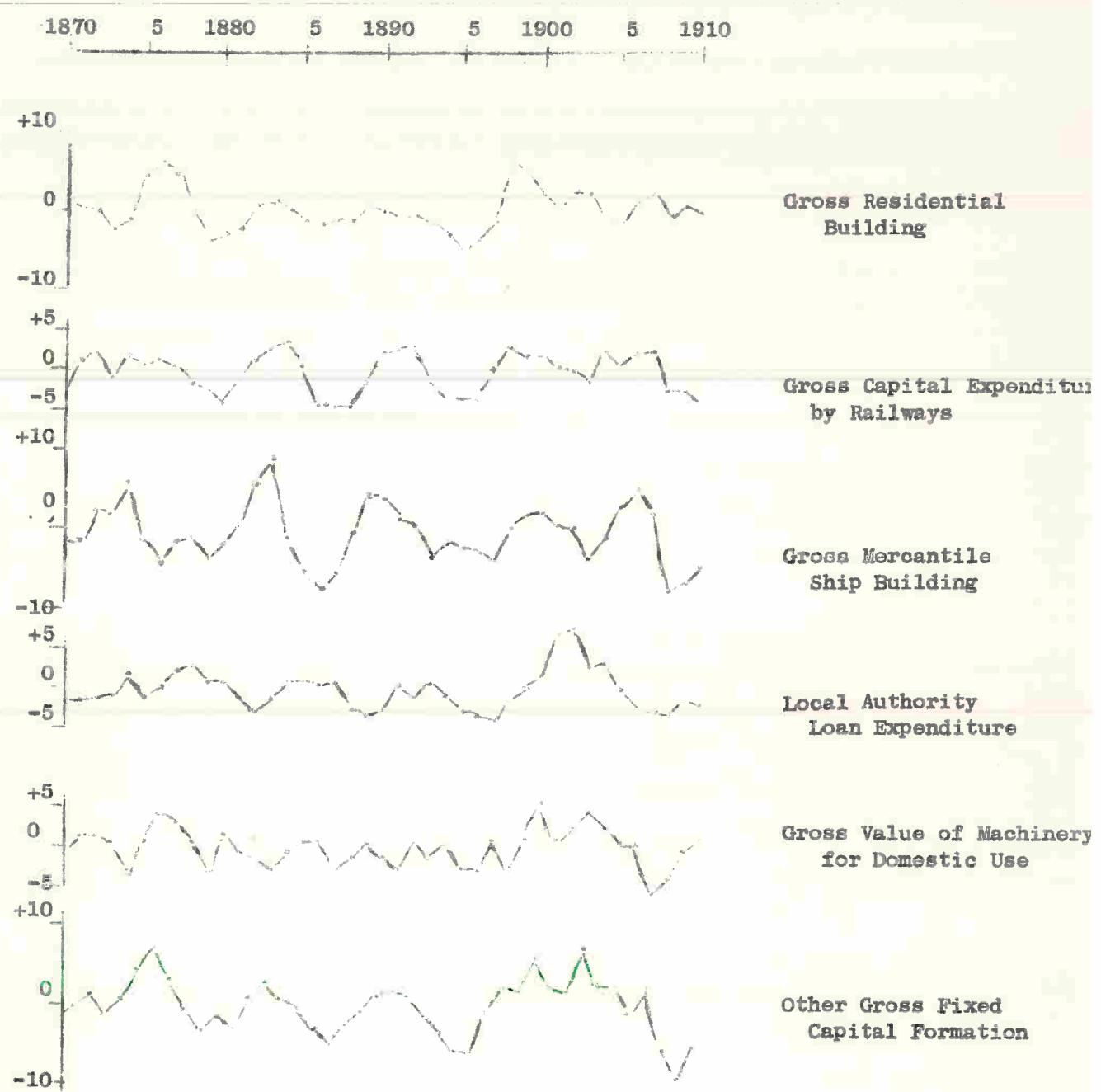


Fig. 8

capacity was needed in Britain. To some extent, then, it may be possible to link home investment into the cyclical process as a dependent variable, but just as overseas investment has been treated largely as exogenous, so home investment must be allowed the possibility of an independent role as entrepreneurial profit expectations varied.

Earlier it was noted that fluctuations in net home investment tended to be associated positively with fluctuations in incomes, especially in the period 1879-1901, but when investment is broken down into its component series the behaviour patterns become more variegated as figure 8 and table 11 indicate<sup>1</sup> than the sub-series

Table 11 Signs of First Differences of Deviations U.K. 1870-1910

	Similar	Opposite
Total Gross Investment and Net National Income	25	15
Gross Building Investment and Net National Income	23	16
Gross Capital Expenditure by Railways and Net National Income	23	15
Gross Mercantile Shipbuilding and Net National Income	30	10
Local Authority Loan Expenditure and Net National Income	16	24
Gross Value of Machinery for Domestic Use and Net National Income	19	21
Other Gross Capital Formation and Net National Income	27	12
Total Gross Investment and Industrial Profits	19	20
Total Gross Investment and Industrial Profits <sub>-1</sub>	24	15

for merchandise exports. Gross mercantile shipbuilding displays the strongest cyclical agreement, which is not surprising since the British cycle has a strong export and international root, and also has the largest mean deviation of £3.0 million,<sup>2</sup> and the greatest volatility.

1. The series available relate to gross investment, whereas this paper has used net investment and net incomes in its earlier discussion. In total terms net investment was some 70 per cent of gross investment, and it is not unreasonable to suppose that in the component series 'gross' and 'net' moved together as in the aggregate series.

2. Other mean deviations are :

Total Gross Investment	£9.8 million
Gross Building Investment	£1.8 million
Gross Capital Investment by Railways	£2.4 million
Local Authority Loan Expenditure	£1.9 million
Gross Value of Machinery for Domestic Use	£1.9 million
Other Gross Capital Formation	£2.8 million

The next closest is 'Other Gross Capital Formation' which covers a variety of investment and in terms of trend values is the most important sub-component. However other series display considerable lack of agreement with fluctuations in net national income and in some cases do not appear to have any well-defined cyclical pattern at all, except that (accidentally) Local Authority Loan expenditure appears to have anticyclical effects.

Fluctuations in home investment in this study have been treated as an exogenous variable influencing effective demand and incomes via the multiplier in an implicit Keynesian type of model, but not more than a contributory feature to the British trade cycle.<sup>1</sup> However, it is appropriate to enquire to what extent its fluctuations might be explained by such factors as international influences, the behaviour of profits, incomes, and interest rates though the varied behaviour patterns of the component series would seem to preclude any simple theoretical explanations. Earlier it was suggested that Bank Rate and short-term interest rate fluctuations hardly affected home investment decisions at all in terms of cost effects, while the influence of the long-term rate of interest was at best only moderate.<sup>2</sup>

Fluctuations in realised profits could be expected to influence investment both in terms of providing the available finance - self finance played an important role in Britain at this time - and in terms of affecting expectations of future profits. Certainly table 11 indicates a moderate positive association between fluctuations in investment and in industrial profits of the previous year, but this may not be a direct causal influence. Pesmazoglu, indeed, found that all influences on investment through variations in aggregate net profits were probably of small importance.<sup>3</sup> Profit variations certainly were related strongly to variations in incomes (30 similar and 9 opposite signs of pairs of first differences of deviations of the same year, which improved to 34 similar and 5 opposite when income deviations were compared with profit deviations of the previous year) with some tendency for turning points in profits to lead turning points in money incomes,

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1. cf. J.S. Pesmazoglu, 'A note on the Cyclical Fluctuations of British Home Investment, 1870-1913', Oxford Economic Papers, 1951, p.60.
2. This is in line with Pesmazoglu's findings (pp.60-1).
3. op.cit. p.60.

perhaps reflecting the cyclical behaviour of money wages. Income fluctuations were mainly caused by export variations reflecting international influences which also influenced shipbuilding and, perhaps, investment in export industries to yield the moderate cyclical pattern found in home investment. This could then be expected to show some cyclical agreement with the profit fluctuations, themselves influenced by variations in production and sales. What, of course, may have been crucial were anticipated profits, about which information is lacking.

International influences on home investment have already been noted for particular kinds of capital formation, but influences through changes in short-term interest rates dictated by balance of payments needs could only have been very weak. Changes in business confidence in Britain may well have been related to changes in conditions abroad, particularly in the primary producers, but again this cannot be demonstrated. Indeed it would seem that the cyclical characteristics of home investment in aggregate, and its role in generating fluctuations in effective demand, were mainly imparted from shipbuilding and 'other' capital formation activities under the stimulus of international forces, and of their influence on expectations.

In the above survey a passive role has been allotted to the money supply in terms of initiating variations in British economic activity. Insofar as domestic conditions were concerned, there was considerable elasticity in the supply of bank deposits in these years, as distinct from earlier periods when sharp contractions of liquidity had such sharp effects on spending before the business of central banking was clearly understood. Banks, it is felt, tended to meet the increasing demand for accommodation in upswings with rising short-term interest rates, and in downswings deposits and advances and short-term rates all fell with the declining demand for accommodation. Interest rates, however, had a more active role to play. Bank Rate, although it had little direct effect on home investment spending, made its influence felt on international capital movements and at times (especially near turning points) did appear to influence long-term overseas lending, or at least was inversely associated then with movements in overseas issues. Its use to protect the Bank of England's Reserve and to preserve British adherence to the Gold Standard was not without repercussions on borrowers and on their purchases of British goods. In this context the view that Britain by its use of Bank Rate in the context of the pre-1914 Gold

Standard thrust the burden of readjustment onto others (the borrowing primary producers) is positively misleading, for once their activity was checked they ceased to purchase so many British goods and unemployment rose in Britain. Monetary forces by checking the pace of overseas lending, partly by cost and partly by confidence effects, had some influence in this roundabout way on British activity as well as on world activity.

The long-range effects of British overseas investment were dynamic. They increased the capacity of borrowers to produce primary products for which there were growing markets in Britain and continental Europe especially. The borrowers provided increased markets for British exports both in the construction period of the projects, and when their capacity to produce had expanded as their rising primary product exports increased their ability to import manufactured goods. Further, the rising demand for British exports doubtless stimulated home investment. This interacting model of economic growth was naturally not bilateral, although there were strong trading ties between the primary producers and Britain, nor indeed did it produce smooth growth for it was undertaken under conditions of private enterprise with speculative excesses and associated reactions, nor were chance features absent.

Accompanying this process two sorts of fluctuations can be discerned : (i) the 18-20 year waves in home and overseas investment and migration which 'trends' perhaps make smoother than they were and which did not seem to have great effects on money incomes; (ii) the 7-10 year cycles about the 'trends'. In the latter the variability of ex ante overseas lending must be incorporated in explanations of fluctuations which had a strong export root. One must relate these British economic fluctuations not only to world market conditions, but also to the varying pace of British overseas lending, itself dependent on expectations of profit and British monetary conditions, and its reactions on home activity. Further, it does seem that the British overseas lending was more dominant in the earlier period of 1870 to 1893, than the later one of 1893-1909 when other economies were growing relatively to the British and trade influences were more multilateral. There does seem a case for speculating on a change in the character of the trade cycle after the mid-nineties.

The conclusions of this paper would seem to agree with Keynes's stress on changes in confidence and expectations and with Robertson's view that British industrial fluctuations should be linked with affairs on far off Prairies and Pampas. On the other hand they would be against the Hicks trade cycle model with its strong accelerator and its suggestion that the full-employment ceiling was responsible for ending booms. Rather, it could support the use of a weak multiplier-accelerator model with erratic shocks (autonomous investment abroad would be one strong candidate) with emphasis on 'real' forces, although the monetary or interest rate factor must not be neglected. The 'Trade Cycle' in this period for Britain is seen as inextricably linked with the growth and development processes not only of Britain but of the primary producers and borrowers. At the same time it must be recalled that there appears a distinct European contribution which has been undervalued and perhaps under-explained as compared with the American contribution.

Sources of Statistical Series Employed in Graphs  
(for U.K. unless otherwise stated)

Index of Industrial Activity : W. Beveridge, Full Employment in a Free Society, London, 1944.

Trade Union Unemployment :	)	Mitchell and Deane, <u>Abstract of British Historical Statistics</u> , Cambridge, 1962.
Interest Rate on 3 month Bank Bills :	)	
Sub-divisions of U.K. Exports :	)	
Net National Income	)	
Net Home Investment	)	C.H. Feinstein, 'Income and Investment in the U.K. 1856-1914', <u>Economic Journal</u> , 1961.
Gross Home Investment	)	
Components of Gross Home Investment	)	
Industrial Profits	)	
Merchandise Exports	)	
Merchandise Imports	)	A.H. Imlah, <u>Economic Elements in the Pax Britannica</u> , Cambridge Mass., 1958.
Invisible Exports	)	
Current Account Balance of Payments	)	
Overseas Issues (calls) and Subdivisions thereof	)	M. Simon, 'The Pattern of New British Portfolio Foreign Investment 1865-1914' in J.H. Adler (ed.), <u>Capital Movements and Economic Development</u> , London, 1967.
Discounts and Advances	)	
Short-term interest rate abroad	)	J. Tinbergen, <u>Business Cycles in the U.K. 1870-1914</u> , Amsterdam, 1956.
Average Bank Rate : W. Beveridge, <u>Unemployment, a Problem of Society</u> , London, 1930.		