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QUARTERLY
ECONOMIC COMMENTARY

by

T. J. BAKER

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CONTENTS

Note. In preparing the first three Sections of this paper, helpful criticism was received from the economic staff of the Institute, but the author accepts responsibility for the contents and conclusions of the paper and for the views expressed.

Section 5, The Joint Quarterly Industrial Survey, is prepared in conjunction with the Federation of Irish Industries, who also supplied the commentary to this Section.

In using the forecasts in Section 2 it should be remembered that economic forecasting is an inexact science, subject to many uncertainties. In particular, projections for periods more than six months distant should not be regarded as more than a broad indication of what might be expected to happen on the specific assumptions set out.

SECTION 1: SUMMARY

All available indications suggest that 1968 will prove to have been the most successful year for the economy since at least 1964. The growth in GNP at constant prices seems likely to be about 5 per cent and the balance of payments deficit a little over £20 million. Prices have risen more than normally, but in a year following a devaluation this is not surprising, and the increase appears to be less than had previously been expected. In the second half of the year, non-agricultural employment seems to have been rising, although unemployment remains obstinately high. Details of the preliminary estimate for 1968 are given in Table 2.1.

The prospects for 1969 remain surrounded by uncertainty. As Table 2.2 shows, the best guess is that steady progress can be maintained, with a growth rate at constant prices of about 4 per cent and a balance of payments deficit of rather over £30 million. However, this projection, based on a continuation of present policies, and specific assumptions regarding economic developments in other countries, is more than usually speculative. This is because the measures introduced by the UK Government to restrict imports, the Irish response to this, and the general nervousness regarding the international monetary system are all factors which are particularly difficult to analyse in a quantitative manner. It is felt in fact that the rapid Irish response to the UK import deposit scheme could give Irish industrial exporters a positive advantage over some of their competitors in other countries, and that this may go some way towards offsetting the effect of the probable stagnation of the UK market in 1969. Nevertheless it seems most unlikely that Irish exports can grow in 1969 at anything like the rate achieved in 1968. At the same time the possibility that they may suffer a severe setback cannot be entirely ruled out.

With exports playing such a key role in the economic outlook for 1969, the analysis of industrial exports in Section 4 takes on added importance. This analysis highlights the speed with which industrial exports have been diversified over the past few years, but shows also that the UK still took two-thirds of all Irish industrial exports in 1967. Even more significantly it shows how the level of Irish industrial exports to the UK has been dependent on the total level of UK imports, almost to the exclusion of any other factors, at least in the short run. While it can be hoped that at the present exchange parity the UK economy will eventually start growing at a similar rate to other advanced countries, this conclusion nevertheless underlines the hope that the process of finding other markets will continue at its recent rapid pace.

1

TABLE 2.1: ESTIMATED NATIONAL ACCOUNTS 1968

	1967 Pro-visional £m	Change in 1968 %	Change in 1968 £m	1968 Prelim-inary Estimate £m	Change in 1968 Price %	Change in 1968 Volume %	Change in 1968 Volume £m
A. Expenditure on Gross National Product							
Personal Expenditure	780	+11.0	+ 86	866	+5	+ 5.7	+ 44
Public Net Current Expenditure	144	+10.5	+ 15	159	+8	+ 2.1	+ 3
Gross Domestic Fixed Capital Formation	209	+18.2	+ 38	247	+6.5	+11.0	+23
Exports of Goods and Services*	459	+13.3	+ 61	520	+7	+ 5.9	+27
Physical Changes in Stocks:							
Agriculture	− 6	—	+ 9	+ 3	—	—	+ 9
Other	+ 6	—	+ 6	+12	—	—	+ 6
FINAL DEMAND	1,592	+13.5	+215	1,807	+6	+ 7.0	+112
Imports of Goods and Services*	444	+22.1	+ 98	542	+8.5	+12.5	+56
GROSS NATIONAL PRODUCT AT MARKET PRICES	1,148	+10.2	+117	1,265	+5.1	+ 4.9	+56
B. Gross National Product by Origin							
Agriculture etc. Total	171	+ 9.4	+ 16	187			
Non-Agricultural: Wages, etc.	520	+10.4	+ 54	574			
Profits, etc.	175	+12.0	+ 21	196			
Total	695	+10.8	+ 75	770			
Other Income (including adjustment for price of stocks)	38	—	—	38			
NATIONAL INCOME	904	+10.1	+ 91	995			
Depreciation	84	+10.7	+ 9	993			
GNP AT FACTOR COST	988	+10.1	+100	1,088			
Taxes on Expenditure less Subsidies	160	+10.6	+ 17	177			
GNP AT CURRENT MARKET PRICES	1,148	+10.2	+117	1,265			
C. BALANCE OF PAYMENTS	+15	—	− 37	− 22			

*Including factor flows. General Assumption: Unchanged Policies. Detailed Assumptions: See Section 3.

TABLE 2.2: PROJECTED NATIONAL ACCOUNTS 1969

	1968 Prelim-inary Estimate £m	Change in 1969 %	Change in 1969 £m	1969 Pro-jection £m	Change in 1969 — Price %	Change in 1969 — Volume %	Change in 1969 — Volume £m
A. Expenditure on Gross National Product							
Personal Consumer Expenditure	866	+ 7.5	+ 65	931	+4.5	+2.9	+25
Public Net Current Expenditure	159	+ 8.5	+ 14	173	+6	+2.4	+ 4
Gross Domestic Fixed Capital Formation	247	+15.4	+ 38	285	+6	+8.9	+22
Exports of Goods and Services*	520	+ 6.0	+ 31	551	+1.5	+4.4	+22
Physical Changes in Stocks:							
Agriculture	+ 3	—	+ 1	+ 4	—	—	+ 1
Other	+12	—	+ 2	+14	—	—	+ 2
FINAL DEMAND	1,807	+ 8.4	+151	1,958	+4.0	+4.2	+76
Imports of Goods and Services*	542	+ 8.0	+43	585	+3.0	+4.6	+26
GROSS NATIONAL PRODUCT AT MARKET PRICES	1,265	8.5	108	1,373	+4.3	+4.0	+50
B. Gross National Product by Origin							
Agriculture, etc.: Total	187	+ 1.0	+ 2	189			
Non-Agric.: Wages, etc.	574	+ 9.9	+ 57	631			
Profits, etc.	196	+ 9.7	+ 19	215			
Total	770	+ 9.9	+ 76	846			
Other Income (including adjustment for price of stocks)	38	+ 2.6	+ 1	39			
NATIONAL INCOME	995	+ 7.9	+ 79	1,074			
Depreciation	93	+11.8	+ 11	104			
GNP AT FACTOR COST	1,088	+ 8.3	+ 90	1,178			
Taxes on Expenditure less Subsidies	177	+10.2	+ 18	195			
GNP AT CURRENT MARKET PRICES	1,265	+ 8.5	+108	1,373			
C. BALANCE OF PAYMENTS	− 23	—	− 12	− 34			

*Including factor flows. General Assumption: Unchanged Policies. Detailed Assumptions: See Section 3.

SECTION 3: COMMENTARY

3.1 *Introduction*

In the September issue of the *Quarterly Economic Commentry*, recent trends and future expectations were discussed separately for each of the components of Final Demand and for certain other key economic variables. Such a systematic approach is suitable whenever a projection of National Accounts is made for a new period, so that the facts, assumptions and reasoning behind each figure are made clear.

When, as here, the projections are revised after a relatively short interval, it seems more appropriate to focus the discussion on items to which particular uncertainty attaches and on any major changes and the reasons for them. On most occasions these major uncertainties and revisions are likely to be confined to a small number of variables, with only minor revisions necessary in the other variables in order to maintain the consistency of the projections.

Consequently many of the heads specifically discussed in the September commentary will not be isolated in this issue, although they may be referred to in the synthesis. In general, it can be assumed that any new information which has become available concerning these items tends to confirm the view taken in September and that any changes in the projected figures for them are due to the impact of changes in the major items.

3.2 *Personal Expenditure on Consumer Goods and Services.*

The assumptions underlying the September forecast of consumption in 1968 were that average weekly earnings would be about $8\frac{1}{2}$ per cent above those for 1967 on an annual basis, that non-agricultural employment would be about $1\frac{1}{2}$ per cent above 1967 and that consumer credit would rise by about 4 per cent in each of the third and fourth quarters of the year. On this basis, it was forecast that the annual average of the index of weekly retail sales would be 9.2 per cent higher in 1968 than in 1967 and total personal expenditure on consumption would rise by about 11 per cent. The statistics which have since become available, showing that the index of retail sales for the first 9 months of 1968 was $8\frac{1}{2}$ per cent higher than in the corresponding period of 1967 and that turnover tax receipts were about $10\frac{1}{2}$ per cent higher, suggest that the September forecast slightly overestimated the likely rise in consumption on the basis of the assumptions then made. However, the autumn budget alters the assumptions to some extent. The impact of the increase in excise duties is hard to assess. In the long run the effect should be restrictive, but in the short run, at least as far as the first round of expenditure is concerned, the higher prices involved may well increase consumption measured at current market prices. In the absence of sufficiently detailed analysis to clarify this point, the safest assumption would appear to be that these taxes will have had little effect in either direction in the last quarter of 1968. Of the other measures, the restrictions on hire purchase terms can be expected to have had some moderating influence on consumption in the final quarter. On the other hand the knowledge that wholesale tax was to be increased in January is likely to have stimulated consumption in the final quarter of 1968, as purchasers attempted to complete their transactions before the increased tax came into force. On past experience the temporary stimulating effect of the impending wholesale tax is likely to have proved considerably stronger than the restrictive effects of the hire purchase controls.

When allowance is made both for the statistical evidence and for the conflicting budget effects, as well as for the knowledge that substantial sections of the community received back dated pay awards in the final quarter, it would seem that the most likely outcome for 1968 is a very slight reduction in the September forecast. The figure used implies the retail sales index in the final quarter running 12 per cent above its level a year earlier.

So far as expenditure at constant prices is concerned the consumer price index for August and November has become available since the September forecast was made. These figures show that the year to year rise in the index was 4.8 per cent, rather less than was anticipated in the September forecast. While the implied index used in deflating personal expenditure to constant prices in the National Accounts seldom coincides exactly with the consumer price index, it seldom diverges very far from it. It seems reasonable to assume therefore that the implied price rise will be similar to or slightly above the rise in the consumer price index and that consequently the increase in consumption in constant price terms in 1968 will be little less than was suggested in the previous forecast.

With regard to 1969, all the budget measures should be working in the same direction—to reduce consumption below the level it would otherwise have reached. No reliable relationship has yet been established between rates of indirect taxation and consumption. On the assumption however that government expenditure in 1969 is no higher than had previously been expected, and allowing for only a moderate multiplier effect for indirect taxes, it would appear possible that the autumn budget taxes might reduce consumer spending in 1969 by between £15 and £20 million compared with the projection made in September. The hire purchase controls and tighter bank credit to the private sector might reduce spending by nearly £10 million. Allowing that on the statistical evidence which has since become available the September projection may have been about £10 million too high on the assumptions then made, a total reduction of about £35 million from that figure might therefore be appropriate. This would leave the increase in personal expenditure at about £65 million or $7\frac{1}{2}$ per cent for 1969 as a whole.

The steep rise in prices projected for 1969 in the September issue of the commentary was due to the expected impact of a rapidly rising money demand on resources occupied to capacity limits. It now appears likely, due mainly to policy changes, that this pressure of money demand will be much less severe. Therefore it is reasonable to expect a more modest rise in consumer prices. On current trends an increase of about $4\frac{1}{2}$ per cent in the consumer price index would appear a reasonable expectation. This would leave the increase in consumption in real terms at about 3 per cent, or £25 million at 1968 prices.

3.3   Other Domestic Demand

There seems little cause to adjust the projections made in September for Public Net Current Expenditure. Those projections included an allowance for increased wages and salaries, and the other increases in Government expenditure revealed during the autumn relate to transfer payments rather than expenditure on goods and services. The assumption regarding 1969 remains that there will be only a normal increase in real public resource-using current expenditure.

So far as investment is concerned there is also little reason to change the previous projections to any marked degree. The F.I.I.-E.S.R.I. Joint Industrial Survey for October showed that half the companies responding could not have produced more with their current resources, and that half of these specified shortage of capacity as the principal constraint. This is a much higher proportion held back through lack of capacity than in any previous survey, even July, and argues forcefully that an upturn in industrial investment must be imminent. This is reinforced by the replies to questions concerning investment in the year just ended and investment intentions in the coming year, which were very expansionary with 63 per cent of respondents expecting to invest more in the coming year compared with only 12 per cent expecting to invest less.

Sufficient stimulus would appear to remain in the economy to call for a high rate of industrial investment in 1969 but not quite so high as was assumed in the September projection, in the light of the reduced expectations regarding consumer expenditure. At the same time it is felt that public investment "on present policies" is liable to be just a little more cautious than it would have been on the policies obtaining in September. It must however be stressed that the factors making for a strong growth in both public and private investment in 1969 are still very much in evidence and thus the total increase projected for 1969

5

has been reduced by only £4 million from the September figure and remains over 15 per cent at current prices.

3. 4 *Exports of Goods and Services*

Although only very small revisions have been made to the September projections of total exports, this sector needs detailed consideration for a number of reasons. Export forecasts inevitably form one of the most uncertain sections of any projections of National Accounts. This normal uncertainty is further compounded at the present time by the possible impact of the measures taken by the UK to reduce imports and the counter measures introduced by the Irish Government and banking system, and by the possible effects of the general uncertainty surrounding the international monetary system. With none of these events is there sufficient experience from the past to enable present assessments to be made with much degree of confidence.

With regard to invisible exports, the assumptions made now are much the same as in September and consequently only minor changes have been made in the projections. The most important of these is a reduction in net factor income from abroad for 1968 due to the loss of interest on that part of the external reserves which has been converted into the form of gold.

A much more thorough examination has been made of merchandise exports, mainly along the lines suggested in Section 4. With regard to 1968, the availability of overall figures for the first 11 months of the year, and of a detailed breakdown for the first 8 months tends to confirm in most respects the previous analysis. The only real change is that a higher proportion of total exports in the second quarter was due to cattle and beef, and a lower proportion to industrial goods, than had been assumed in September. Perhaps as a result of this, third quarter exports were a little disappointing, as sales of cattle and beef fell back to more normal levels (on the basis of two month's figures). On the other hand, the very buoyant level of total exports in October and November suggests that the forecast of total merchandise exports for the year as a whole is likely to prove about right.

Although it is possible that the import deposit scheme introduced by the UK in November could have had a significant impact on the December export level, such an immediate reaction must be regarded as unlikely. On the whole it would appear sensible to treat the British measure as applying to 1969 rather than 1968. Thus the estimate of merchandise exports for 1968 is almost unchanged from that made in September, apart from the fact that a greater part of the increase is now thought likely to be due to prices.

In considering merchandise exports in 1969, on the disaggregated approach outlined in Section 4, there appears to be little cause for any substantial alteration in the September forecast for agricultural exports. Cattle and beef prices remain very high for the time of year and Argentinean exports of meat to the UK have not yet been resumed in quantity. However, it still appears prudent to allow for a change in this situation in the course of 1969. A moderate fall in meat and cattle prices and hence value is assumed, compensated by a small increase in the volume of other agricultural exports, so that the value of total agricultural exports will be the same in 1969 as in 1968. As always in forecasting agricultural exports it must be remembered that the margin of error is wide, and a substantial change in either direction could not be considered surprising.

Unclassified domestic exports and re-exports seldom fluctuate greatly, although the latter tends to grow fairly steadily. An assumed increase of £1 million in these categories is unlikely to prove seriously misleading.

It is industrial exports which present the most intriguing forecasting problem for 1969. As is shown in Section 4, the UK accounted for 66 per cent of Irish industrial exports in 1967, although it appears likely that this proportion will have fallen to not much more than 60 per cent in 1968. It is established with reasonable certainty that over the past few years these industrial exports to the UK have been very

strongly influenced by the level of UK imports from all sources. Thus the behaviour of UK imports in 1969 is of crucial importance.

In the September projections it was assumed, on the basis of the then current forecast by the National Institute of Economic and Social Research, that UK imports in 1969 would be only 1 per cent higher in 1969 than in 1968. In their November Economic Review, N.I.E.S.R. amended their forecast to the extent that, without the November measures taken by the UK authorities, they foresaw an increase of nearly 5 per cent in imports between the two years. However, they calculate, admittedly with a high degree of uncertainty, that the effect of the measures should be to reduce imports by between £100 million and £250 million, thus reducing the growth in 1969 to the order of 2 per cent to 3 per cent. Within this total it seems probable that manufacturing imports, to which Irish industrial exports are particularly closely tied, will grow even more slowly, if at all, as these are the goods to which the restrictions principally apply.

Thus at first sight it would appear that the assumptions on which a forecast must be based now are not much different from those obtaining in September, as the restrictions imposed by the UK government merely bring expectations back to what they were at that time. In fact the situation is a little more complicated, because the nature of the import deposit scheme is such that it cannot be taken for granted that the old relationship between UK manufactured imports and Irish manufactured exports will continue unchanged. At the time of writing it is still unclear to what extent the other countries which supply the UK market with manufactured goods are able and willing to devise schemes akin to the Irish one for overcoming the deposit problem.

It seems highly probable however that the Irish scheme will be more effective than the average and that consequently the competitive advantage of Irish manufactured exports *vis à vis* other suppliers of the UK could be considerably improved. If this is so, it will go some way towards offsetting the effects of the virtual stagnation of the UK market itself, and it is even possible that the Irish economy will gain on balance from the introduction of the British import deposit.

Of course it will be some months before evidence is available as to whether this optimistic interpretation is correct. Even if it is, it is necessary to reiterate that 1969 can hardly see a repetition of the very rapid increase in Irish industrial exports to the UK which has been enjoyed in 1968. Until the evidence begins to appear, the best assumption seems to be the mildly optimistic one that Irish industrial exports to the UK will be about 5 per cent higher in 1969 than in 1968. This assumption allows for a substantial gain in the Irish share of the UK market but also for the possibility that total UK imports may grow by even less than the N.I.E.S.R. forecast.

On the basis of figures for the first half of the year, industrial exports to countries other than the UK seem likely to have grown by at least 40 per cent for 1968 as a whole. Some of this exceptional rise can probably be attributed to devaluation, but over the previous four years the increase averaged about 25 per cent per year. Given that world trade is expected to expand rather more slowly in 1969 than in 1968, and that the initial impact of devaluation will have worn off, a return to the normal but very high growth rate of 25 per cent seems the best assumption to make for 1969.

If the distribution of industrial exports in 1968 between the UK and the rest of the world is in line with expectations, these assumed increases of 5 per cent for exports to UK and 25 per cent for other destinations will lead to an increase of nearly 13 per cent or £18 million in industrial exports as a whole in 1969. The cut-back in the expected growth of domestic demand should help to ensure that the resources are available to meet this relatively modest increase, whereas in the September commentary it was suggested that a similar increase might be impeded due to competing demands on resources for domestic consumption purposes.

An interesting sideline to these projections is that if they are fulfilled, domestic industrial exports (excluding Shannon) will for the first time exceed agricultural exports. However, it cannot be stressed

too often that export forecasts are always speculative and that events have rendered the degree of uncertainty even higher than usual at the present time. While the projections here are "best guesses" it is felt that any serious deviation from them is rather more likely to be downward rather than upward. This is especially true as the underlying assumption has been made that the world monetary system will survive in full working order throughout 1969, and that if there is any alteration in exchange parities it will be relatively modest and will be carried through in an orderly fashion.

3.5 *Imports of Goods and Services*

Statistics for the period to November 1968 show that merchandise imports were 24.4 per cent higher than in the corresponding period of 1967. This is quite close to the trend assumed in the September issue of the *Quarterly Economic Commentary*. The high level of imports can be expected to have continued in December 1968, especially as there may have been some acceleration of imports in order to anticipate the increased wholesale tax. It is now assumed that merchandise imports for the year will total £487 million, an increase of £95 million (24.3 per cent) over 1967. There is no change in the assumption concerning invisible imports and thus total imports (including factor flows) are forecast to be £542 million in 1968, an increase of 22.1 per cent.

This is roughly in line with the computed value suggested by Leser's consistency model, although rather above that suggested by his annual import model. This discrepancy is largely explained by the large rise in import prices due to devaluation, which is taken into account in the consistency, but not in the import model.

With regard to 1969, the considerable reduction in the expected growth in consumption due to the budget measures has led to a downward revision in the level of imports compared to the September projection. Nevertheless, the fact that much of the stimulus to growth in 1969 seems likely to come from industrial investment and industrial exports, both of which tend to be import intensive, suggests that imports are still liable to increase considerably in 1969. Also the steep rise in merchandise imports in the course of 1968, which can be seen from the charts in Section 7, means that by merely maintaining throughout 1969 the level they seem likely to have reached in the final quarter of 1968 the annual average of merchandise imports for 1969 would be 6½ per cent higher than that for 1968. As argued earlier, this fourth quarter figure is likely to have been somewhat inflated by accelerated deliveries, while the figure for the first quarter of 1969 is likely to be similarly depressed. All the same, it is difficult to project an increase of much less than 8 per cent on an annual average basis in total imports of goods and services for 1969. This is in line with Leser's import model, although rather above that indicated by his consistency model, the computed value for which is depressed by the effect of the very large rise in imports in 1968.

3.6 *Domestic Output*

The index of production in manufacturing industry for the second quarter of 1968 was 10.3 per cent higher than the revised figure for the second quarter of 1967. This very large increase is rather greater than was indicated for the second quarter on the basis of the FII-ESRI Joint Industrial Survey in June, and represents an improvement of 5.8 per cent over the revised seasonally corrected figure for the first quarter of 1968. On the basis of the equations outlined in Section 4 of the September *Quarterly Economic Commentary*, the FII-ESRI Joint Survey for October suggests that the index of production will be at least 10 per cent higher than the corresponding quarter of 1967 in both the third and fourth quarters of 1968. Thus an annual average increase of about 10 per cent in 1968 seems a likely outturn for manufacturing industry, insofar as the index of industrial production is an accurate measure.

The reduced projection for private consumption, and the relatively modest increase expected in manufactured exports, may lead to production in some industries growing by less than previously

8

assumed during 1969. In many industries, however, the increase in 1969 remains more likely to be limited by supply constraints than by demand. In total, an increase of about 5 per cent in the annual average level of the index of production in manufacturing industry appears to be a reasonable projection.

Because of the reduced expansion in consumption, it seems logical to expect that the 1969 rate of growth in other non-agricultural sectors, particularly distribution, will be rather lower than was assumed in September, and that this will lead to a substantial reduction in the projected level of profits and self-employed earnings, compared with the September commentary.

The effect of this downward revision in these sectors, coupled with the slightly reduced expectations regarding manufacturing industry and investment, is likely to be that non-agricultural employment will grow by less than was previously assumed in 1969. It seems probable that there will still be some increase, and this is partly borne out by the responses regarding employment in the October FII-ESRI Joint Survey, but that it may be of the order of $1\frac{1}{2}$ per cent rather than the $2\frac{1}{2}$ per cent assumed in September.

With regard to agriculture, there appears at the moment little reason to change the assumptions made in September for either 1968 or 1969. As was stated in September however, the 1969 projection is dependent upon a particularly uncertain assumption concerning the future behaviour of prices, as well as being subject to the usual vagaries of weather, disease and similar random factors.

3.7 *General Synthesis*

The additional information which has become available, and the actions which have been taken within and outside Ireland, since the September issue of the *Quarterly Economic Commentary* give little ground for substantially altering the forecast then made for 1968. It still looks as if the year should have been a successful one economically, with a growth rate approaching 5% and a balance of payments deficit of a little over £20 million.

As in September, the estimate fits quite well with the annual percentage changes computed according to Leser's consistency model, thus suggesting that the pattern of growth in 1968 has been in line with normal post-war experience. The comparison is as follows:

1968. *Percentage change over 1967*
Current Prices

Category	Estimate	Model
Personal Expenditure	+11.0	+10.4
Public Current Expenditure	+10.5	+14.9
Gross Fixed Capital Formation	+18.2	+15.9
Exports of Goods and Services	+13.3	+14.4
Final Demand (excluding stocks)	+12.6	+12.6
Imports of Goods and Services	+22.3	+23.1
Gross National Product at Market Price	+10.1	+10.1

Of course the estimate for 1968 is largely irrelevant, except as a starting point for the consideration of 1969. From that point of view the position at the end of 1968 is perhaps of more importance than the annual average, as expressed in the National Accounts. The final quarter of 1968 saw activity running at a high level. Retail sales were not merely at a record level, but appear to have been far above any previous record. Industrial exports likewise were maintaining a very high level, and prices were such that the value of agricultural exports was little below its highest point. In response to these pulls of demand, industrial output has been rising very rapidly throughout the year, but now appears to be running into considerable supply constraints. Total investment is already high, and the share of industrial investment within this total is probably beginning to rise. There are clear indications that industrial employment, after remaining on a plateau since the middle of 1966 is at last beginning to rise significantly, although

unemployment remains obstinately high. Prices have risen in the second half of 1968 by rather less than might have been expected, although the consumer price index in November stood 5½ per cent higher than a year earlier.

In looking forward to 1969 one cannot simply extrapolate this high level of activity. Measures have already been taken to curb the growth both of domestic and external demand. Indeed part of the stimulus to internal demand in the final quarter of 1968 can be ascribed to attempts to forestall one of these restrictive measures. Thus a slackening of the rate of growth must be expected, particularly in the first quarter of 1969. Thereafter, the best indications at present are that expansion will be steady rather than vigorous. However, the rate of growth in 1968 has been so rapid that a considerable rise would take place in the annual average of G.N.P. in 1969 compared with 1968, even if there was no growth during 1969 above the end-1968 level. Of course some further growth is expected on the basis of present policies, and so a reasonable year to year expansion can be looked for.

Indeed the growth rate in constant price terms now projected is not much lower than that projected in September on the basis of an unrestrained rise in consumer demand. The principal differences between the two projections is that the current one assumes a much slower rise in the general price level, and a considerably smaller balance of payments deficit. Basically this is because the previous projection assumed that Final Demand at current prices would far outstrip the likely rise in Irish productive capacity, while the current projection assumes that demand and domestic supply will be much nearer balance.

One side effect of the revision in the projection is to bring the projected percentage changes much nearer the values obtained by applying Leser's consistency model to the assumed change in Final Demand. The comparison for 1969 is now as follows:

1969. *Percentage change over* 1968, *Current Prices.*

Category	Estimate	Model
Personal Expenditure	+ 7.5	+ 5.7
Public Current Expenditure	+ 8.5	+ 8.4
Gross Fixed Capital Formation	+15.4	+16.0
Exports of Goods and Services	+ 6.0	+ 8.9
Final Demand (excl. stocks)	+ 8.3	+ 8.3
Imports of Goods and Services	+ 8.0	+ 5.6
Gross National Product	+ 8.5	+ 8.2

The items for which the projections diverge most significantly from the "normal" pattern shown by the model computations are exports and imports. The former seem liable to be held back by conditions abroad, as discussed in section 3.4, while for the latter the model figure is suspect, due to the strong influence of the lagged term within it. The lagged term implies that because imports rose so much in 1968, they should rise relatively slower in 1969 in compensation. In fact it would appear more likely that the steep rise in 1968 was itself partly in compensation for an abnormally slow rise in 1967, and that consequently it would be unrealistic to expect much further "compensation" in 1969.

Once again it appears in order to draw attention to the inevitable uncertainty which surrounds any forecast or projection, however carefully made. As explained earlier, the degree of uncertainty at the present time is even greater than usual. Thus the projection for 1969 must be regarded as little more than an indication of what might happen if most of the assumptions made prove justified. In particular the reader must be warned against the apparent precision of the figures presented. Working within a National Accounts framework in which the sides must balance, it is convenient with regard to both calculation and presentation to use exact figures. In fact the amounts thus shown for each item should be regarded as the mid-point of a fairly wide range, indicating a likely order of magnitude rather than a precise expectation.

10

3.8 *Policy Implications*

The current projection indicates that it is quite possible that 1969 will see a "real" growth rate of about 4 per cent, with a balance of payments deficit in the region of £35 million. In the light of external difficulties, particularly in the UK market, this must probably be regarded as a reasonable out turn, if in fact it is achieved. It is disappointing that non-agricultural employment is likely to grow more slowly than if a more expansionary policy could have been followed, but on the other hand it now appears probable that the rise in prices in 1969 can be kept within tolerable bounds.

However, although the projection made here on the basis of present policies seems satisfactory, it must be remembered that it is subject to even more than the usual degree of uncertainty. In particular the interpretation of the possible effects of the import deposit scheme in the UK is of necessity almost entirely speculative, and may prove unduly optimistic. As always, projections concerning agricultural exports, in which price plays such an important rôle, are liable to be proved spectacularly wrong in either direction. Behind all the trade projections lies the spectre of a serious crisis in the international monetary structure which could at the worst place serious impediments in the way of international trade.

Thus while the projection for 1969 suggests that a masterly inactivity is the most appropriate role for economic management of the economy at present, the time does seem opportune for some consideration of what steps might be taken if the next few months prove the projection to have been seriously wrong.

So far as internal forces are concerned it should prove relatively simple to adjust matters if time shows that the budgetary measures and the concomitant monetary adjustments have proved to have either too great or too little effect. The yardstick here is presumably a combination of the behaviour of prices, imports, unemployment, and the number of bottlenecks arising from shortage of capacity.

The more important uncertainty concerns exports. If these continue to grow more rapidly than projected here, it should probably be regarded as a windfall gain, and whether any additional expansionary action is felt advisable will presumably depend on the view taken regarding the pressure on productive capacity at the time.

The real problem arises if exports fall seriously short of the projections made here. If this happens, the prospect of a deficit on current account too large to be met by the capital inflow once more opens up. In this case there would appear to be three main types of action open to the authorities. In the first place they could allow the reserves to run down, in the second they could impose further deflationary measures on the economy so as to reduce the demand for imports, and in the third place they could impose some form of direct control over imports.

Which choice the authorities should adopt would depend in large part on the diagnosis of the problem. If it could be shown that exports were being held back due to excessive demand on the home market, then deflation would appear to be the appropriate reaction. If however it appeared that domestic demand were under reasonable control, and the difficulties emanated purely from the external markets, then serious consideration should be given to the other alternatives.

So long as the external difficulties appeared temporary, a case could be made for saying that this was the rainy day against which the reserves were being held, and using them accordingly. On the other hand if the difficulties appeared more likely to be long lasting, and especially if they arose from restrictions applied by other countries, then a strong case could be made for some form of import restriction, difficult though such a scheme may be to apply in an economy with the structure of Ireland's.

None of these actions is being advocated at the present time. With any luck exports will grow at something like the rate projected, in which case the choice need not be made. However, the possibility of such a situation cannot be excluded, and it might seem prudent that some contingency planning should be undertaken along these lines, if in fact it is not already being done.

11

4.1 *Introduction*

There is no need to justify any attempt to obtain a greater understanding of the factors influencing the level of Irish exports. The importance of exports to the economy, the extent to which their rate of growth has varied from year to year, and the fact that a forecast of their level is fundamental to any econometric prediction of National Accounts are all too obvious to need stressing. Yet it is a curious fact that very little serious analysis of exports has been published, and export forecasts, by the staff of the Institute as well as by other forecasters, have been based almost exclusively on intuitive reasoning and direct inquiry.

TABLE 4.1:   IRISH DOMESTIC EXPORTS BY TYPE 1963-1968, SEASONALLY CORRECTED, CURRENT PRICES
(£ million)

Year	Quarter	Cattle and beef	Other Agricultural	Industrial	Unclassified	Total
1963	I	13.0	13.0	13.3	4.1	43.4
	II	17.0	13.4	16.4	4.1	50.9
	III	15.6	14.2	15.9	3.4	49.1
	IV	14.4	14.1	16.5	3.7	48.7
1964	I	19.2	14.7	18.7	4.1	56.7
	II	20.4	12.5	18.7	4.5	56.1
	III	15.4	13.9	19.6	3.7	52.6
	IV	16.1	12.3	20.2	3.8	52.4
1965	I	15.3	12.9	18.0	3.8	50.0
	II	13.1	13.4	19.4	3.6	49.5
	III	16.4	14.4	22.3	4.8	57.9
	IV	16.2	14.7	21.5	4.2	56.6
1966	I	15.5	15.6	23.4	3.5	58.0
	II	13.6	14.1	20.8	3.4	51.9
	III	16.3	15.3	24.7	3.9	60.2
	IV	18.5	15.7	27.1	4.1	65.4
1967	I	17.6	15.4	28.2	3.8	65.0
	II	23.9	14.6	28.4	3.3	70.2
	III	24.5	15.0	27.5	3.4	70.4
	IV	20.9	14.8	30.9	3.7	70.3
1968	I	18.8	17.6	35.4	3.6	75.4
	II	27.0	17.1	35.7	3.7	83.5

Sources: C.S.O. Trade Statistics of Ireland. Review of External Trade. Seasonal Correction by ratio to moving average.

CHART 4.1: IRISH DOMESTIC EXPORTS BY TYPE 1963-1968. CURRENT PRICES
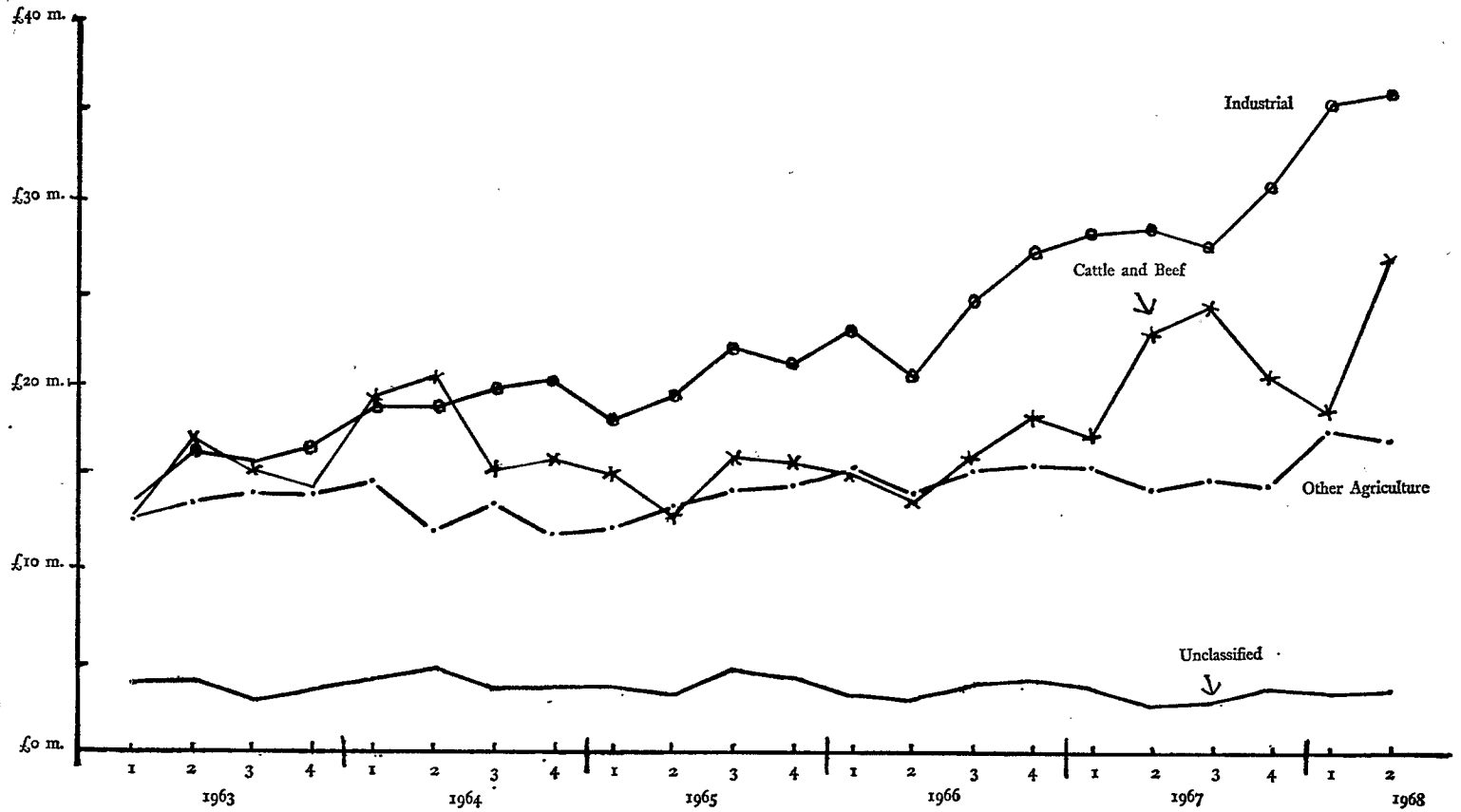
There are several reasons for this. The most important is that if either exports of goods and services, or merchandise exports are taken as a single entity, there are no obvious explanatory variables with which to relate them. On the other hand a really detailed micro approach, such as that adopted by Kavanagh in his unpublished study, is useful as a basis for long term policy decisions, but is far too complex for forecasting purposes.

So far as any answer to this intractable problem is possible, it seems likely to be found through the process of selective disaggregation. A start to this process was made in the *Quarterly Economic Commentary* of September 1968, when seasonally corrected quarterly series at current prices were published for domestic exports of "cattle and beef", "other agricultural", "industrial", and "unclassified" products. These are shown in Table 4.1 and Chart 4.1. By thus identifying the very different trends over the past five years in these broad categories of exports, it became possible to project each category with rather more confidence and with a greater reference to relevant facts than was possible for merchandise exports as an undifferentiated whole. However the actual projections remained almost entirely intuitive, as no formal relationships between any of these series and any outside variable were established.

4.2 *The pattern of industrial exports*

The aim of the present exercise is to take the largest of these categories, namely domestic industrial exports (excluding exports from the Shannon Free Airport), and by further disaggregation to attempt to relate subcategories within it to external variables. The actual subdivisions made owe very little to economic theory and a great deal to statistical availability and common sense.

The first and most obvious division is by destination. Given the desire to keep the number of divisions as small as possible, and the size of each as large as possible, the only geographical division made is between the UK and the rest of the world. The second major division is into those industrial exports which fall into S.I.T.C. Sections 5 to 8 and those which do not. The reason for this division is that only exports in Sections 5 to 8 can be readily compared with other countries' imports, these being the Sections which are internationally regarded as manufactured goods. In the remainder of the paper Sections 5 to 8 are referred to as "manufactured" exports and the remainder of industrial exports as "other".

TABLE 4.2: IRISH INDUSTRIAL EXPORTS BY CATEGORY 1963–68, CURRENT PRICES

Year	To UK		To Rest of World	
	Manufactured	Other	Manufactured	Other
	£ million			
1963	29.6	16.7	11.8	4.1
1964	37.6	18.1	16.7	4.8
1965	37.5	17.8	19.8	6.4
1966	43.1	18.6	24.4	9.9
1967	52.2	23.9	26.2	12.6
	% of total			
1963	47.6	26.8	19.0	6.6
1964	48.7	23.4	21.6	6.2
1965	46.0	21.8	24.3	7.9
1966	44.9	19.4	25.4	10.3
1967	45.4	20.8	22.8	11.0

Given this two-way breakdown of industrial exports, the period studied chooses itself, as the Irish Trade Statistics follow the S.I.T.C. classifications only from 1963 onwards, and in a short study such as this it would be impracticable to convert earlier data to this form. In any case the period of $5\frac{1}{2}$ years permits 22 quarterly observations, and with the rapid change in the composition of industrial exports a longer period would not necessarily permit either more accurate seasonal corrections or the establishment of more meaningful relationships with other variables.

Table 4.2 shows the breakdown of the annual industrial exports into the four divisions outlined. This table shows how the UK market for industrial exports, while remaining dominant and growing absolutely, has nevertheless declined in relative importance over the period studied. The UK took 74% of Irish industrial exports in 1963, a proportion which declined steadily to 64% in 1966 and recovered to 66% in 1967. With regard to manufactured goods the relative fall was quite modest, from 48% to 45%. Viewed the other way round, as a proportion of UK manufactured imports, Irish manufactured exports to the UK grew from 1.74% in 1963 to 1.84% in 1967. This is comparing Irish exports f.o.b. with UK imports c.i.f., which of course understates the true proportion in each case. A N.I.E.S.R. study* suggests that, after making certain adjustments to the figures to ensure comparability, the Irish share of UK manufactured imports on a c.i.f. basis was about 2.8% in 1966. Other industrial exports to the UK grew much more slowly than the other three categories of exports, and their share of the total thus declined sharply from 27% to 21% over the period. The fastest growth was in other industrial exports to the rest of the world, which more than trebled during the five years studied, thus nearly doubling their share of the total.

There is not a great deal to be gained from studying quarterly figures for these divisions unless they are seasonally corrected. A complication arises here, as some of the four categories contain components which seriously disrupt the seasonal pattern. At the same time these disruptive components can be regarded as supply rather than demand determined, and thus from the point of view of analysis, as well as the narrower viewpoint of seasonal correction, there is a strong argument in favour of isolating them from the rest of the figures. The items in question are petroleum products to the UK, ships and planes to the rest of the world, and metal ores to the rest of the world.

Manufactured exports to the UK remain unchanged, but each of the other categories is subdivided once more. Of the separated items, petroleum exports to the UK can themselves be seasonally corrected, but neither ships and planes, which appear to be random, nor metal ores, which have been exported only since the beginning of 1966, can.

The seasonally corrected series are shown in Table 4.3. The method adopted in each case was the ratio to moving annual average. For purposes of analysis of a past period this method would appear to be as suitable as Leser's quasi linear method used in our regular seasonal corrections, as well as being much simpler to apply.

In the case of exports to the rest of the world the ratio to moving averages was applied simply to the raw data. In the case of exports to the UK however the period was characterised by several events, random in their timing, which seriously affected the seasonal pattern in most years. These were dealt with by adjusting the raw data to allow for the effects of these events before calculating the ratios. The actual adjustments made were more or less arbitrary, but by inspection appear to be of the right order of magnitude. The adjustments and their causes are set out below.

While the seasonal correction factors are calculated on the basis of the adjusted figures, the series in Table 3 are of course the actual figures divided by the seasonal correction factors thus derived.

*UK Imports of Manufactures from Developing and New Industrial Countries, 1954–1966. Ann Morgan, National Institute Economic Review, May 1968.

TABLE 4.3: IRISH INDUSTRIAL EXPORTS 1963–68. SEASONALLY CORRECTED, CURRENT PRICES
(£ million)

Year	Quarter	To UK			To Rest of World				Total
		Manufactured (1)	Other (excluding Petrol) (2)	Petrol (3)	Manufactured (excluding Ships and Planes) (4)	Other (excluding mining) (5)	Ships and Planes (not corrected) (6)	Mining (not corrected) (7)	(8)
1963	I	6.6	3.3	0.4	2.2	1.0	—	—	13.5
	II	7.3	3.5	0.4	2.6	1.0	1.5	—	16.3
	III	7.5	3.7	0.7	2.6	1.0	—	—	15.5
	IV	8.2	3.9	0.6	2.9	1.0	—	—	16.6
1964	I	8.9	4.0	0.5	2.8	0.8	1.5	—	18.5
	II	9.6	4.3	0.3	3.1	1.4	—	—	18.7
	III	9.7	4.1	0.4	3.0	1.3	1.1	—	19.6
	IV	9.4	3.9	0.5	3.6	1.4	1.5	—	20.3
1965	I	8.2	3.8	0.6	3.9	1.5	—	—	18.0
	II	9.0	4.0	0.8	4.2	1.7	0.2	—	19.9
	III	9.8	3.9	0.6	5.1	1.4	1.6	—	22.4
	IV	10.5	3.6	0.6	4.6	1.9	0.2	—	21.4
1966	I	10.5	4.3	0.3	4.8	1.4	0.9	0.8	23.0
	II	9.5	3.7	0.1	4.9	1.5	0.3	0.7	20.7
	III	11.7	4.8	0.3	5.4	1.8	—	0.8	24.8
	IV	11.4	4.8	0.2	6.2	1.7	1.7	1.2	27.2
1967	I	12.5	4.7	0.8	6.4	2.5	—	1.1	28.0
	II	13.0	4.7	1.6	6.4	1.7	0.2	1.3	28.9
	III	12.3	4.6	0.9	6.4	2.1	—	1.0	27.3
	IV	14.3	5.6	1.4	6.7	2.0	0.1	1.0	31.1
1968	I	16.2	4.9	0.5	8.5	2.5	—	2.1	34.7
	II	16.5	4.7	0.7	9.9	2.5	0.1	1.3	35.7

Event	Date	Quarter	Adjustments	
			Manufactured Exports	Other Industrial Exports
			£ million	£ million
UK Import Levy	November 1964	1965 I	+ .8	
UK Seamen's Strike ..	May 1966	1966 II	+1.2	+.5
		1966 III	— .6	—.4
		1966 IV	— .6	—.1
End of Levy	November 1966	1966 IV	+ .4	
		1967 I	— .2	
		1967 II	— .2	
Liverpool Dock Strike ..	September 1967	1967 III	+ .8	+.2
		1967 IV	— .4	—.2
		1968 I	— .4	
Devaluation	November 1967	1968 I	— .4	
		1968 II	— .4	

4.3 *Analysis of Export Categories*

Table 4.3 shows quarterly industrial exports since 1963 broken down into seven categories, five of which are seasonally corrected. Thus disaggregation in itself is a considerable aid to understanding the growth of industrial exports in the past five years and to forecasting by intuitive methods their future growth. However, the table opens the way to further analytical and predictive steps.

In the case of the three minor categories (cols. 3, 6 and 7), prediction should be relatively simple by means of direct inquiry. In each case only a very small number of enterprises is involved, and by asking these companies directly it should be possible to obtain a reasonably accurate forecast of exports in these categories for the coming year.

The four major categories present a more difficult problem, but one which is in some of the cases amenable to analysis. In this study a fairly detailed statistical analysis has been made of "manufactured" exports to the UK. This is because this is still by far the largest of the categories, and also because it is the one most amenable to such analysis. The other categories have received much more perfunctory treatment, but sufficient, it is felt, for certain broad conclusions to be drawn.

4.4 *Exports of Manufactured Goods to UK*

Inspection of both annual and quarterly data suggests that there is a close relationship between total UK imports of manufactured goods and Irish exports of these products to the UK, both valued at current prices. This is illustrated in Chart 4.2. However it can be seen that the fit, although close, is by no means perfect. Accordingly the hypothesis has been adopted that the level of Irish exports of manufactured goods to the UK depends on the level of total UK imports of manufactured goods, and on various other factors. The full list of possible explanatory variables tested is as follows:

X_1=Total UK imports of manufactured goods (seasonally corrected).
X_2=X_1, leading by one quarter.
X_3=X_1, lagging by one quarter.
X_4=Index of Irish unit labour costs 1961=100, difference of quarter from trend.
X_5=two-year smoothed increase in volume of production index, manufacturing industry.
X_6=Dummy variable for seamen's strike.
X_7=Dummy variable for Liverpool dock strike.
X_8=Dummy variable for Free Trade Agreement.
X_9=Time trend.

17

CHART 4.2: IRISH MANUFACTURED EXPORTS TO UNITED KINGDOM Cf.
UNITED KINGDOM MANUFACTURED IMPORTS

Irish Manufactured Exports to United Kingdom ✕————————✕
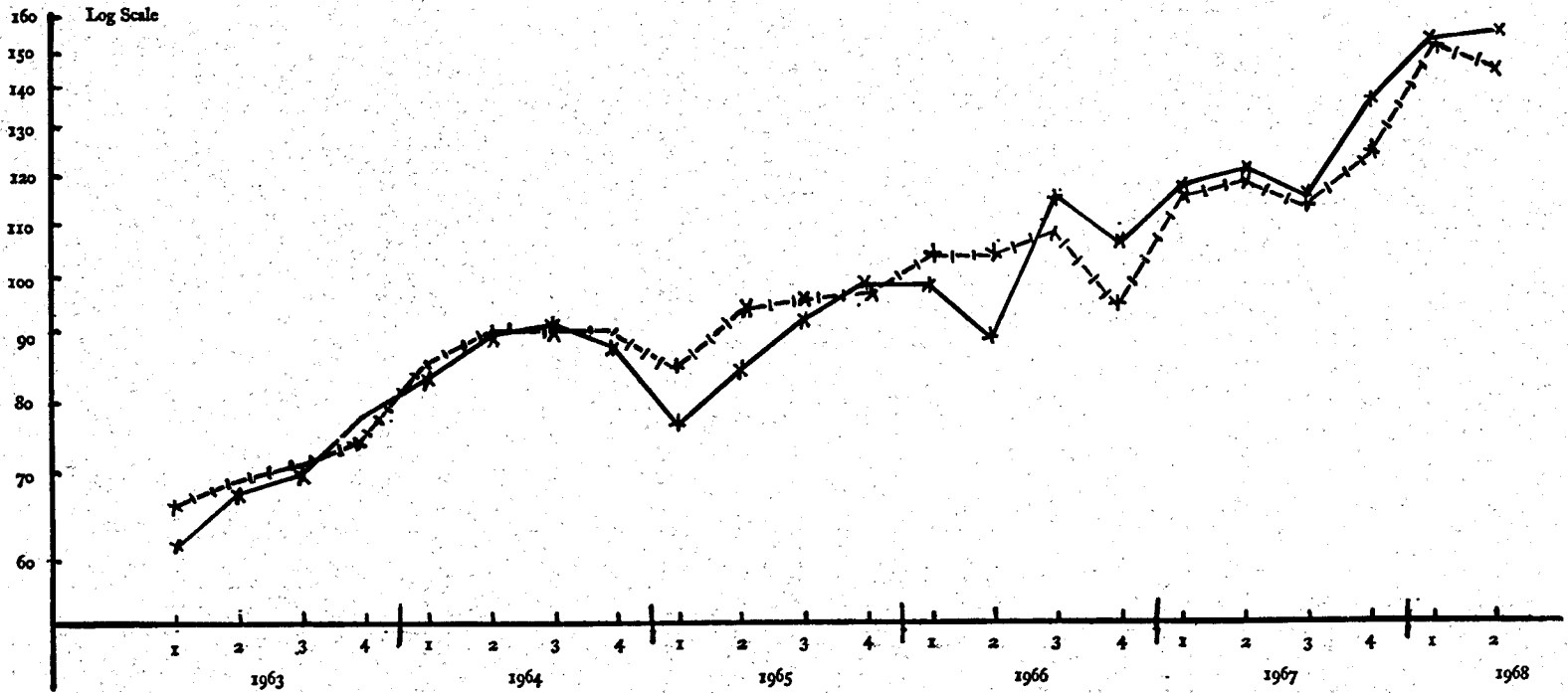Total Manufactured Imports to United Kingdom ✕—ı—ı—ı—✕.
Index Mean=100
Log Scale

TABLE 4.4:   IRISH MANUFACTURED EXPORTS TO UK VARIABLES

		Y	X_1	X_2	X_3	X_4 variation from trend × 100	X_5 % increase × 100	X_6	X_7	X_8	X_9
		£'000	£ million	£ million	£ million						
1963	I	6,572	402	409	419	−21	1,155	o	o	o	1
	II	7,261	419	402	429	− 5	958	o	o	o	2
	III	7,459	429	419	453	−32	1,149	o	o	o	3
	IV	8,249	453	429	519	−55	1,309	o	o	o	4
1964	I	8,864	519	453	548	15	1,444	o	o	o	5
	II	9,583	548	519	550	57	1,428	o	o	o	6
	III	9,720	550	548	546	31	1,387	o	o	o	7
	IV	9,422	546	550	513	− 2	1,378	o	o	o	8
1965	I	8,175	513	546	571	8	1,454	o	o	o	9
	II	8,990	571	513	579	11	1,459	o	o	o	10
	III	9,812	579	571	586	− 8	1,286	o	o	o	11
	IV	10,529	586	579	624	−35	948	o	o	o	12
1966	I	10,535	624	586	627	− 9	649	o	o	o	13
	II	9,502	627	624	642	5	643	−2	o	o	14
	III	11,704	642	627	573	18	728	1	o	1	15
	IV	11,363	573	642	696	30	946	1	o	1	16
1967	I	12,523	696	573	714	4	956	o	o	1	17
	II	13,021	714	696	687	−35	978	o	o	1	18
	III	12,308	687	714	749	− 7	1,066	o	−1	1	19
	IV	14,347	749	687	915	− 2	1,314	o	1	1	20
1968	I	16,226	915	749	887	− 8	1,714	o	o	1	21
	II	16,488	887	915	887	o	1,759	o	o	1	22

Note: For description of variables, see text.

Some explanation is necessary for some of these variables. X_1, X_2, and X_3 are valued c.i.f., although the dependent variable Y is valued f.o.b.. It is therefore implicitly assumed that the relationship between f.o.b. exports and freight charges remains unchanged throughout the period. X_4 is included as a test of the effect of unit labour costs, that is, average weekly earnings in manufacturing industry after allowing for changes in productivity, on manufactured exports. As the main explanatory variable is total UK imports it is felt that a comparison of Irish with UK labour costs would not be appropriate, as any change in UK labour costs relative to the rest of the world would be reflected in the level of total UK manufactured imports. The correct comparison would appear to be with unit labour costs in the other countries supplying the UK market. Such a comparison however would have been quite impracticable in a short study, and so the rather heroic assumption has been made that, on balance, average unit labour costs in the rest of the world have followed a steady trend. On this assumption, any deviation of Irish labour costs from their trend during this period should be reflected in their having a short-term effect on Irish exports, when taken in conjunction with total UK imports as the other explanatory variable.

X_5 is included as a test of whether Irish manufactured exports have been held back by shortage of capacity in times of boom conditions. No reliable measures of capacity utilisation exist for the period, and so the assumption has been made that the greater the increase in industrial production over the preceding two-year period (taking three-quarterly moving averages to eliminate random fluctuations) the greater the likelihood that capacity constraints are being felt.

The dummy variables X_6 and X_7 for the major strikes in the period are self cancelling and used purely as distributors in time. The dummy X_8, on the other hand, representing the Free Trade Agreement is regarded as having a continuous effect, being entered as zero until the middle of 1966 and as one for each quarter thereafter. The time variable X_9 is used in the normal way in an attempt to show whether serious problems of collinearity exist and if so to partly eliminate them.

Multiple regressions were run by computer with Irish manufactured exports to the UK as the dependent variable and all the above variables together, and various combinations of them, always including X_1, as explanatory. The simple linear regression of Y on X_1 was also calculated. The results are set out in Table 4.5.

The most striking feature of the table is the overriding importance of X_1, total UK manufactured imports, as an explanatory variable. As well as being consistently significant at the 1% level, the value of its coefficient remains fairly constant, varying only from 13 when its lagged and leading forms are included to $19\frac{1}{2}$ when used on its own or with the strike dummies. In the simple regression there is an R of .974, and consequently there is not a great deal of room for the other variables to improve the fit. Nevertheless it is worth studying how far the other variables prove significant and improve the fit compared to the simple regression. The best fit is obtained when all the variables are used together, and it is interesting that in this case only two of them, labour costs and the Liverpool dock strike, are not significant at the 10% level.

However it is most instructive to look at the performance of each variable separately.

The lagged and leading terms X_2 and X_3, when used with X_1, or with X_1 and the dummy variables, in equations 2 to 5, do not greatly improve the fit obtained. X_2 does not in these equations achieve significance at the 10% level, while X_3 achieves it only at the 10% level. Despite the fact that in the full equation 1 both these variables are significant at the 5% level, they do not therefore appear to be very valuable. It is interesting that X_3 shows up rather better than X_2, suggesting that the response of Irish manufactured exports to events is faster rather than slower than UK manufactured imports as a whole. This presumably reflects both the short distances involved and the composition of the exports in which few products with a long period of gestation are included.

20

TABLE 4.5:   IRISH MANUFACTURED EXPORTS TO UK MULTIPLE REGRESSIONS,

Equation Number	Variables Included	Variables Significant At			Variables Not Significant at 10%	R	DW Value
		1%	5%	10%			
1	1, 2, 3, 4, 5, 6, 7, 8, 9,	1, 6	2, 3, 8, 9,	5	4, 7	.9961	1.56
2	1, 2, 3, 6, 7, 8,	1	6	8	2, 3, 7,	.9930	Not Calculated
3	1, 2, 3,	1	—	3	2	.9793	,,
4	1, 2	1	—	—	2	.9754	,,
5	1, 3,	1	—	3	—	.9786	,,
6	1, 4, 5, 6, 7, 8	1	6, 8,	—	4, 5, 6,	.9919	,,
7	1, 4, 5,	1	—	—	4, 5,	.9740	1.66
8	1, 6, 7, 8, 9,	1	6, 8,	—	7*, 9	.9914	Not Calculated
9	1, 6, 7, 8,	1	6, 8	—	7*	.9913	1.64
10	1, 6, 9,	1, 6,	—	—	9	.9873	Not Calculated
11	1, 6, 7,	1, 6,	—	—	7	.9873	,,
12	1, 6,	1, 6,	—	—	—	.9867	1.84
13	1, 9	1,	—	—	9	.9757	Not Calculated
14	1,	1,	—	—	—	.9739	1.66

*Almost significant at 10%

Equation 1. $Y_c = -3,037 + 15.93X_1 + 4.75X_2 + 6.43X_3 - 3.32X_4 - 0.71X_5 + 668.73X_6 + 247.35X_7$
  $(1.98) \quad (1.88) \quad (2.21) \quad (2.85) \quad (0.40) \quad (182.54) \quad (265.84)$
  $+ 820.32X_8 - 190.52X_{10}$
  $(327.14) \quad (68.71)$

Equation 9. $Y_c = -42 + 17.14X_1 + 505.38X_6 + 488.05X_7 + 849.65X_8$
  $(1.12) \quad (198.77) \quad (282.15) \quad (328.83)$

Equation 12. $Y_c = -1,200 + 19.58X_1 + 804.45X_6$
  $(0.75) \quad (188.65)$

Equation 14. $Y_c = -1,151 + 19.50X_1$
  (1.02)

The next pair of variables X_4 and X_5, representing unit labour costs and a capacity proxy, perform surprisingly badly. The capacity proxy is significant at the 10% level in the full equation and neither is significant in any of the other combinations in which they are included, although the sign of X_4 is consistently in the expected direction. When taken together with X_1, they succeed in raising the R by only .0001. This almost complete lack of effectiveness does not of course mean that neither labour costs nor capacity constraints has any effect on manufactured exports, merely that the series chosen for these variables are ineffective in the equations formulated. This could be because the series used are poor measures of these factors. It could be that they operate with a time lag that was not tested. The most likely explanation is that the relationship between these factors and the level of manufactured exports to the UK is far more complex than the simple and direct link assumed in the formulation of the equations.

In the case of capacity constraints, it would perhaps be more reasonable to expect them to operate only when capacity is practically fully utilised. Until that level is reached, higher utilisation would be a result of a high level of exports, only beyond that level would capacity constraints result in exports being lower than would be expected from a consideration of demand factors. Very skilful formulation, based on much better data than are available, would be needed to test this hypothesis.

With regard to X_4, unit labour costs compared with the trend over the period, the position is more tantalising. This series, although far from perfect, is logically constructed and does clearly show the effect on labour costs of the ninth and tenth wage rounds. Thus, if the assertion which is sometimes made, that increased wage costs have an immediate deleterious effect on exports, were true, then X_4 should have a significant impact on the equations in which it is included. However, even on theoretical grounds this simplistic assertion is dubious, as it rests on the assumptions that wage costs are immediately reflected in export prices, and that export markets are price elastic.

The true relationship is likely to be far more complex. Unit wage costs (after allowing for productivity changes) can affect profit margins as well as prices. Sometimes one will be affected during one period and the other in another period, depending on the state of the market and the nature of contractual obligations. Thus, the effects of a relative increase in labour costs, as a result say of a wage-round, will be a mixture of price effects and of profit effects (such as decisions to delay or cancel expansion projects or to cut back on overseas marketing activity) each operating with varying time lags.

There is scope in this field for much further research which might yield very fruitful results. However, these results are likely to be of importance to the long term planner concerned with the secular trend of exports. For the short term forecaster concerned with the factors underlying the quarter by quarter fluctuations around this trend, it would appear from this analysis that marginal changes in unit wage costs are an unimportant factor compared with changes in the level of UK manufactured imports.

Returning to the equations in Table 4.5, the dummy variables for specific events work reasonably well. In particular, X_6, representing the greater effect of the seamen's strike on Irish exports than on total UK imports of manufactured goods, is highly significant in every equation in which it appears. On its own with X_1 it raises the R from .974 to .987, and thus appears the most valuable of the subsidiary explanatory variables. X_7, which postulated a similar skewed effect for the Liverpool dock strike is not very significant and does little to improve the fit. On the other hand X_8, which postulates a permanent boost to exports from the Free Trade Agreement is significant at the 5% level in every equation in which it appears, and improves the fit in conjunction with X_1, X_6 and X_7 from .988 to .991.

An encouraging feature of the regressions is the unimportance of X_9, the time variable. The only time it is significant, is in equation 1, and there its sign is negative. When taken alone with X_1 it fails to be significant at the 10% level and improves the fit only from .974 to .976, although here at least its sign is positive. When the dummies are included, especially X_8, its contribution to the fit is negligible.

22

These results suggest that the relationships observed between the other variables are genuine, and not merely the result of all of them moving together through time.

Taken together, this regression analysis seems to establish beyond reasonable doubt, that the most important factor determining the level of Irish manufactured exports to the UK is the level of total UK manufactured imports. Specific events, such as the seamen's strike and the introduction of the Free Trade Agreement have had a measurable impact, but no other continuous series spanning the whole period appears significant.

Study of the residuals suggests that a further dummy variable representing the early period of the UK import surcharge would have been significant. A series of negative residuals in 1965 is probably responsible for the fact that the D.W. tests, although satisfactory, are consistently below 2. Another impression gained from visual impression of the residuals is that some part of the remaining error may be due to the vagaries of the seasonal correction process. In almost all the equations the residuals for the first quarter of each year tend to be strongly negative. This could well be due to the fact that the first quarter has been treated more severely in the Irish seasonal correction than in the British. Such problems are inseparable from the use of quarterly time series.

Equations 1, 9, and 12, can be regarded as satisfactory analytical tools for explaining the recent course of manufactured exports. As predictive tools they are less satisfactory, although nevertheless of some use. This arises partly from the nature of the problem, in that the errors, although small in relation to the absolute figures used, can be large in relation to the quarter to quarter changes in the dependent variable. To some extent this difficulty is lessened if the quarterly equations are used for predicting four quarters at a time, in order to obtain annual forecasts. As the errors are reasonably random it is likely that the aggregate error from four quarters will be considerably less than four times the probable error for a single quarter. This is a further advantage of quarterly over annual models for prediction purposes, as this cancelling out of random errors is not possible in predicting a single year on an annual model.

A second drawback is that the relationship between the two main variables is itself so close that the significance and effect of the other variables tends to become obscured. An approach to dealing with this second problem might be to conduct the exercise in two stages, using the minor independent variables to explain the residuals of the simple regression between Y and X_1. This has not been attempted here but is probably well worth doing if a reliable predictive model is to be refined from this rather crude first stage analysis.

With regard to the other problem mentioned, the obvious answer is to attempt an analysis in terms of first differences. Again for reasons of time, no sophisticated analysis of first differences has yet been made. However, without recourse to a computer, two fairly simple tests have been made.

A simple linear regression of percentage first differences between manufactured exports to the UK and UK manufactured imports yields the following result:

$$Y_c = 1.81 + .731X_1 \quad R = .630 \quad T = 3.54$$
$$(.206)$$

The fit of this is not good enough to be much use for prediction. However, from the set of equations on the absolute data, it appears that both the seamen's strike and the Free Trade Agreement had significant effects on exports. Thus a simple dummy variable to represent these two events, with a value of -1 for the second quarter and $+2$ for the third quarter of 1966 has been added to the equation. The result now becomes:

$$Y_c = 1.32 + .729X_1 + 10.34X_2 \quad R = .863$$
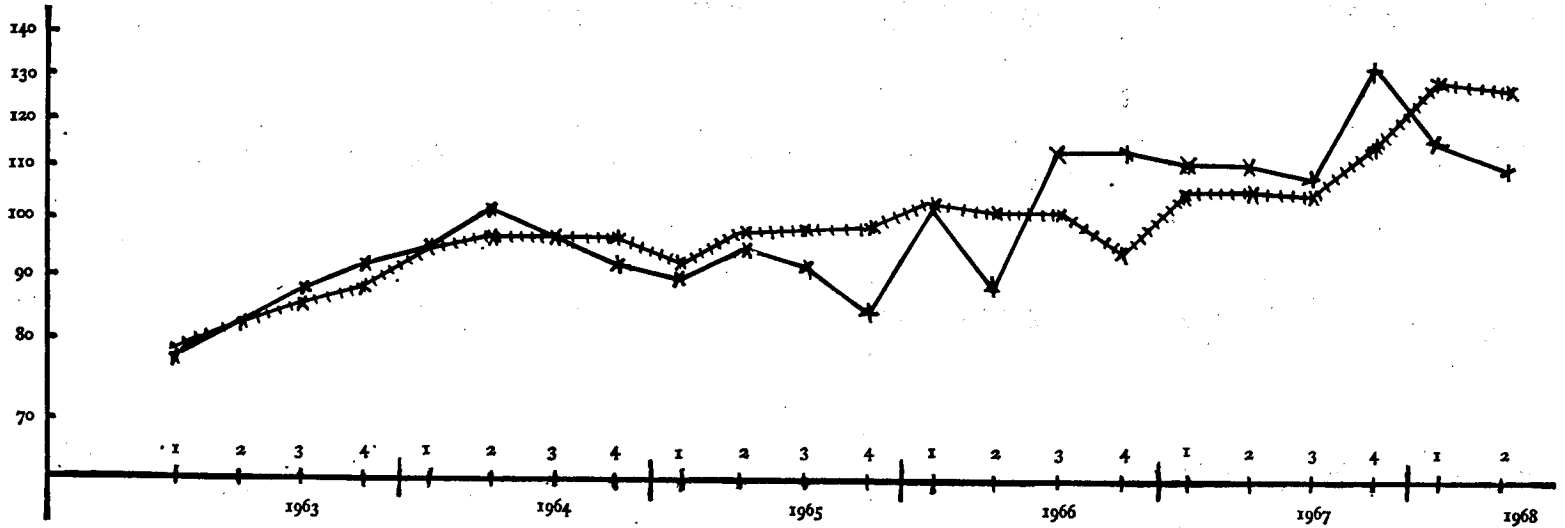$$(.138) \quad (2.09)$$

CHART 4.3: OTHER INDUSTRIAL EXPORTS TO UNITED KINGDOM OF
UNITED KINGDOM TOTAL IMPORTS

Other industrial exports to United Kingdom X————X
Total imports to United Kingdom· X—+—+—+—+—+—X
Index Mean=100
Log scale

This is much better, and strongly suggests that a properly formulated multiple regression, including lagged terms, can be found that would yield a very high degree of fit in terms of percentage first differences, and which would accordingly be of great value for prediction. From inspection it appears highly likely that the introduction of further variables, and in particular of lagged versions of X_1, would reduce the constant term considerably.

The implications of this analysis, either in absolute or difference terms, seem to be that although the Irish share of UK imports of manufactured goods is growing slowly over time, this secular movement is greatly outweighed by the importance of fluctuations in the growth of total UK manufactured imports. In absolute terms, each change of £1 million in UK imports tends to lead to a change of about £17,000 to £20,000 in Irish exports, which is sufficient to increase slowly the Irish share of the market. In terms of percentage changes it appears that Irish manufactured exports to the UK tend to increase by about 1.3% per quarter plus .73 of whatever percentage change there is in UK manufactured imports. In times of expanding trade there is not much difference between the results obtained by the two methods, but if trade is static or declining the results diverge considerably, with the first difference approach giving probably too favourable a result from the point of view of Irish exports.

More work is necessary to resolve this conflict and to develop a prediction model which can be used with confidence, although even at this stage the equations available are a valuable reinforcement for intuitive projection. However good the model devised (unless it is formulated entirely in lagged terms) the accuracy of any prediction based on it is limited by the quality and the assumptions made concerning the future values of the independent variables. In the case considered here, the important factor is clearly the accuracy of forecasts of UK manufactured imports. The National Institute of Economic and Social Research in London publishes each quarter forecasts of total UK imports for the following 12 to 18 months. On the whole the relationship between total and manufactured imports is fairly close, but any conversions which may have to be made between them can be checked periodically against direct forecasts of manufactured imports which N.I.E.S.R. are prepared to make available at irregular intervals. Of course one cannot assume that the N.I.E.S.R., forecasts will always be accurate—they were in fact seriously wrong in the early part of 1968—but most of the time they should provide a reasonably reliable external basis for our calculations.

4.5 *Other Industrial Exports to UK*

There is no obvious UK series with which to compare the miscellaneous other industrial exports to the UK. This category includes some food products, beer and spirits, and various raw materials in different stages of transformation. Comparison with internal UK National Accounts' components such as G.N.P. or Personal Consumption are vitiated both by the frequent revisions to which these series are subject and by the great importance of such import affecting factors as changing tariff and quota regulations. It has been decided that the most sensible standard of comparison for these exports, although they themselves fall into S.I.T.C. sections 0–4, is total UK imports of all Sections (excluding U.S. military planes). The relationship is shown graphically in Chart 4.3.

It appears from this that there is indeed some relationship between UK imports and Irish other industrial exports to the UK when allowance is made for the other special factors which are suggested on the chart. No computer time has been spent on the problem, which rules out complicated analysis. The following simple test has been made.

The dependent variable (exports) is smoothed by eliminating the, unexplained, kink in the final quarter of 1965 and the first quarter of 1966, and the extra effects of the seamen's strike in the second, third and fourth quarters of 1966. This adjusted dependent variable is then regressed on total UK imports (X_1) and a dummy of 1 from the third quarter of 1966 onwards for the Free Trade Agreement (X_2). The result of this equation is

$$Y_0 = 2.34 + 1.105X_1 + .667X_2 \quad R = .9039$$
$$(0.395) \quad (.146)$$

X_2 is significant at the 1% and X_1 at the 2% level.

As it stands this equation is not at all suitable for prediction purposes and can only be regarded as a first test to see whether any relationship appears to exist. However, the chart suggests that were other variables included, especially one for the UK import levy which appears to have had a disproportionate effect on this category of exports, a reasonable fit might be obtained. The divergence in the final three quarters of the period is puzzling. It could be accounted for partly by vagaries of timing, pushing into the final quarter of 1967 some of the exports which could normally have been expected in the first half of 1968, and partly by the effect of devaluation in raising the prices and consequently the value of total imports while leaving the prices of other industrial exports from Ireland unchanged.

Observation of a few more quarters is needed to resolve this problem. In the meantime there does appear to be sufficient evidence of linkage between the level of UK imports and Irish "other" industrial exports for the former to be taken into account when intuitively projecting the latter. As this category does not usually fluctuate greatly, such an approach should be reasonably satisfactory for forecasting purposes.

4.6 Manufactured Exports to the Rest of the World

As was stated previously, ships and planes, quarterly exports of which are determined by delivery schedules of the Verolme yard and the disposal policies of Aer Lingus and the Irish shipping companies rather than by external demand for their products, have been excluded from this category.

Table 4.6 shows the annual amount and the percentage changes in the category, compared with an index of the manufactured imports (S.I.T.C. Sections 5–8) of the eight most important foreign customers for Irish manufactured exports. These are crudely weighted according to the proportion of identifiable manufactured Irish exports that they take.

As the top part of the table shows there is no close correspondence between the annual percentage increases in this index (column 2) and in manufactured exports to countries other than the UK (column 4) beyond the fact that both tend to grow very rapidly. This lack of correspondence is no doubt partly due to the imperfections of the index as a standard of comparison. More important probably is the fact that manufactured exports to the rest of the world are far more narrowly based, with regard to range of products, than are manufactured exports to the UK. Thus on the one hand there is less reason why the narrow range of Irish exports should move in conjunction with the broad spectrum of these countries, manufactured imports. On the other hand the narrow base means that major developments in one or two industries in Ireland can have an overwhelming impact on total exports in this category. This is brought out in columns 5 and 6, which show that over half of the total increase in manufactured exports to the rest of the world since 1963 is due to the development of the chemical and scientific goods industries as major exporters. Even if these items are excluded, as in column 8, the fit with the "world index" in terms of annual percentage changes is not very good.

For prediction purposes the choice for this category therefore appears to lie between simple extrapolation at a high rate of growth, on the assumption that some new products will be introduced each year to maintain this growth, and obtaining direct information on new developments while assuming that the base of old products will move roughly in line with world trade. Some combination of these approaches should provide tolerably useful forecasts.

4.7 Other Industrial Exports to the Rest of the World

With mining removed for prediction by inquiry, a small category is left, which however is growing rapidly, having doubled between 1963 and 1967. No study has been made to try to relate this category to any external indicator. In spite of the fact that its growth has not been smooth, 1966 having shown no increase over 1964, the absolute errors involved in applying a simple extrapolation are likely to be small in comparison with total Irish exports, and for the present at least prediction can be left safely to this method.

TABLE 4.6: IRISH MANUFACTURED EXPORTS TO THE REST OF THE WORLD

	Manufactured Imports, Rest of World	
Year	Weighted average US, W. Germany, France, Netherlands, Canada, Japan, Italy and Belgium	
	Index 1962=100	% Increase
	1	2
1963	111.3	11.3
1964	128.8	15.8
1965	147.0	14.1
1966	174.5	18.7
1967	190.3	9.0

	Irish Manufactured Exports (excluding ships and planes)	
	£ million	% Increase
	3	4
1963	10.24	
1964	12.55	22.6
1965	17.85	42.2
1966	21.43	20.1
1967	25.92	20.9

	Irish Manufactured Exports			
	Chemicals	Scientific Goods	Other	
	£ million	£ million	£ million	% increase
	5	6	7	8
1963	.61	.18	9.43	
1964	.96	.06	11.54	22.3
1965	3.54	.46	13.85	20.1
1966	4.96	.98	15.49	11.8
1967	6.32	2.82	16.78	8.3

4.8 *Summary*

The disaggregation of Industrial exports carried out in this study, and the examination of some of the major categories isolated, should help both in the understanding of the pattern of export growth and in the short-term prediction of future exports.

With regard to structure the most interesting findings appear to be those set out below.

(i) Manufactured (S.I.T.C. Sections 5–8) exports to the UK accounted for 45% of total industrial exports in 1967 and for £22.6 million of the total increase of £60.1 million between 1963 and 1967. They are highly dependent on the behaviour of total UK imports of manufactured goods. It seems probable that the Free Trade Agreement led to a slight increase in these exports, over and above what would have been expected from the behaviour of other factors. In general however all other influences are marginal in the short run compared with that of the level of UK imports.

(ii) Other industrial exports to the UK are the most slowly growing category of industrial exports, accounting for only £7.2 million of the total £60.1 million increase over the period. These also appear to be related, although less closely, to the level of total UK imports. On this category the Free Trade Agreement appears to have had a marked favourable effect, perhaps of the order of £2½ million per year.

(iii) Industrial Exports to the rest of the world grew more rapidly than those to the UK during the period, accounting for £22.9 (38%) of the total increase. £12.8 million, or over half, of this increase came from three important new items, metal ores, chemicals and scientific goods, all of which were negligible or non-existent in 1963. Even excluding these items (as well as the rather peculiar ships and planes item), industrial exports to the rest of the world increased faster than those to the UK between 1963 and 1967, the respective increases being 85% and 64%.

This faster increase may reflect the slightly greater rise in world than in UK imports over the period, but is more likely to be due to the composition of the export mix, with modern products with a high rate of growth having a greater weight in exports to the rest of the world than to the UK.

So far as prediction is concerned the position reached can be summarised as follows:

(i) The largest category, Manufactured Exports to UK at £52 million in 1967, appears amenable to statistical forecasting methods. Given the time, the present equations can be improved on, but even as they stand they provide a moderately useful guide, so long as reliance can be placed on the N.I.E.S.R. predictions of UK imports.

(ii) Three important items, petroleum products to UK, ships and planes and metal ores to the rest of the world, totalling £9 million in 1967, can be approached by means of direct inquiry to the relevant sources.

(iii) Other Industrial Exports to UK (£19.5 million) can be related to total UK imports. The relationship is rather crude at present but can no doubt be refined. In any case this category does not fluctuate very much, apart from the stimulus it appears to have gained from the Free Trade Agreement.

(iv) Manufactured Exports to the rest of the world (£26 million) can at present be approached in two ways. One is by means of more or less naive extrapolation, the other by means of direct enquiry for its most dynamic components and statistical relationship (admittedly slightly shaky) for the remainder. Use of both methods is probably advisable.

(v) Other Industrial Exports to the rest of the world (£8.2 million) can at present only be approached through naive extrapolation, unless of course relevant direct information becomes available. Given the size of this category it probably does not much matter if mistaken predictions are made.

In all, it is hoped that this disaggregated approach, with statistical methods being used when possible and appropriate, will lead to more accurate prediction for industrial exports than would be possible taking the category as an integral whole. Further work should clearly improve some parts of the prediction process, and this will be carried out as time permits. Similarly the apparent initial success of the disaggregation approach or quarterly data in this field suggests that its use should be extended to other areas, such as the other categories of exports, imports and industrial production. This also will be attempted as time permits.

SECTION 5: THE FEDERATION OF IRISH INDUSTRIES AND THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE

QUARTERLY INDUSTRIAL SURVEY

SEPTEMBER 1968

This report contains the results of the September Industrial Survey conducted jointly by the Federation of Irish Industries and the Economic and Social Research Institute. The survey covered the Third Quarter of 1968 compared with the Third Quarter of 1967 with forecasts for trends in the Fourth Quarter of 1968 compared with the corresponding period of 1967. 83% of respondents replied and the results can be taken to represent the views of a good cross-section of industry. However, the survey is still at a preliminary stage of development and it is recommended that the results be treated with caution.

FII/ESRI QUARTERLY INDUSTRIAL SURVEY

SEPTEMBER 1968

Summary

For the second quarter running the results of the latest joint Quarterly Industrial Survey conducted by the Federation of Irish Industries and the Economic and Social Research Institute indicate that expansion is continuing at an accelerated rate. The trends emerging in Table 5.1 highlight this and also the fact that manufacturers are optimistic about future trends in sales, both home and abroad, employment and investment.

Overall Findings of the Survey

Higher Production, Higher Sales, both at home and abroad, with expectations of continuing Higher Sales in the coming quarter are indicated by the results of the September Quarterly Industrial Survey. Employment continues to rise slowly and the Survey results show a small increase in the September Quarter of 1968 compared with the corresponding quarter of 1967. The Survey results also indicate that the coming quarter will show a rise on employment in the same quarter of 1967. Stocks of Finished Goods and Raw Materials Supply were considered adequate by most respondents, but a significant increase has taken place in the number of respondents reporting capacity restraints on their ability to expand production. Manufacturing investment has increased and it is expected that it will continue to do so, a factor which may help to alleviate, to some extent, the pressures now being reported on productive capacity.

Overall Results

Production in the September Quarter of 1968 showed a marked increase on that in the September Quarter of 1967. All industries registered higher production in the quarter.

Higher home sales were reported by all industries in the quarter and future expectations are that this trend of increasing sales will be maintained.

The Survey indicates that Exports continue to increase and were higher in the Third Quarter of 1968 compared with the corresponding period last year. Expectations are that the trend of increasing exports will be continued in the coming quarter.

While the Survey does indicate some increase in Employment it is not as marked as the overall rise in Production or Sales. It is, however, noticeable from the results, that, as was the case three months ago, the overall impression is that Employment in the coming quarter will be higher than in the corresponding quarter of 1968. Notwithstanding this the marked rise in Production would seem to indicate a continuing rise in Productivity.

Stocks of Raw Materials were largely considered adequate by respondents. While the majority of respondents regarded stocks of finished products adequate, the proportion (24%) finding them insufficient was the highest in the history of the Survey. An increasingly large number of respondents reported that their capacity to produce more was being hindered by pressures. Those who could not produce more indicated that insufficient capacity, insufficient labour, both skilled and unskilled, were the prime causes of this. Those respondents with the financial years ending in the September Quarter of 1968 reported that investment in the year was higher than in the previous year. This is a welcome change from previous Survey results and the expectations that investment in the coming year will be significantly higher than this year is also a welcome change in investment trends, and should, as already stated, help towards easing the productive pressures now being experienced.

Sector Results

As already mentioned, all Industry Groups reported higher Production in the quarter compared with the corresponding period of last year; productive rises being significant in all industries. Coupled with this rise in Production all Industry Groups had higher Home Sales in the Third Quarter of 1968 compared with the Third Quarter of 1967 and it is expected by all Industry Groups that this trend of Higher Home Sales will continue in the last Quarter of 1968.

With the exception of the Food and Drink and Tobacco Industries all Industry Groups reported Higher Exports in the quarter. No Industry reported lower Exports in the quarter and in the coming quarter, with the exception of Drink and Tobacco, which expects Exports to be at the same level as the previous quarter, all Industries expect that Exports will be higher than those in the corresponding quarter of 1967. No Industry Group expects Exports to be lower in the coming quarter.

The Glass Clay and Cement and Metals and Engineering Industry Groups reported that Employment was higher in the Third Quarter of 1968 compared with the Third Quarter of 1967, while the Food, Textiles, Footwear, Wood and Furniture, Paper and Printing and Chemicals Industries, reported that Employment had not changed significantly. The Drink and Tobacco and "Other Manufacturing" Industry Groups, however, reported lower Employment in the quarter compared with the corresponding quarter of 1967. For the coming quarter Textiles, Clothing and Footwear, Glass Clay and Cement and Metals and Engineering anticipate that Employment will be higher than in the same quarter of 1967. Food, Wood and Furniture, Paper and Printing and Chemicals expect it to remain at the same level and the Drink and Tobacco and "Other Manufacturing" Industry Groups anticipate Employment to be lower than in the same quarter of 1967.

While the majority of respondents in the Textiles, Clothing and Footwear, Wood and Furniture, Glass Clay and Cement, and "Other Manufacturing" Industry Groups did not feel they could produce more with their existing capacity; the other Industry Groups generally felt that more orders could have

30

been met in the quarter. It is noticeable from the Survey results that an increasing number of respondents are experiencing capacity pressures. As well as lack of capacity, insufficient labour supply, both skilled and unskilled, is also proving to be a factor contributing to the pressures on productive capacity.

Because of the small number of firms involved it is dangerous to draw hard conclusions concerning Investment in individual Industry Groups. It does, however, seem significant that no industry expects Investment to be lower in the coming year than in the year just ended. This is an important change from previous Surveys and is a most welcome sign that domestic manufacturers are preparing to meet increasing demand with domestically produced goods.

FII/ESRI QUARTERLY INDUSTRIAL SURVEY

ALL MANUFACTURING

TREND OF REPLIES

The table set out below is designed to show the trend of replies in this and the four previous surveys. In questions 1, 2, 3, 4, 8, 9, 10, 11 and 12 the difference between the positive and negative replies is taken. Where a positive sign appears before the figure in relation to these questions it indicates that the number of respondents who experienced a rise or expected one in the future quarter was that percentage higher than those who did not nor expected to experience a rise; the opposite applying where a negative sign appears.

For questions 5 and 6 the difference between the percentage of respondents reporting finished goods and raw materials was excessive and insufficient is taken. Here a positive sign before the answer arrived at indicated the number of respondents who considered that raw materials and finished goods were insufficient was that percentage higher than those who did not and a negative sign indicates that they were excessive.

To arrive at the figures given for question 7 the difference between the percentage of respondents stating that more orders could have been met in the various quarters and those replying in the negative is taken to show the trend of excessive capacity during the surveys.

TABLE 5.1

Question	October 1967	January 1968	April 1968	July 1968	October 1968
1. Total Production was	+24	+49	+49	+68	+76
2. Home Sales were	—	+54	+55	+67	+76
3. Exports were	+10	+33	+30	+22	+26
4. Labour Force was	+ 9	− 6	− 7	+ 8	+16
5. Finished Stocks were	− 4	+ 3	+ 3	+15	+21
6. Materials Stocks were	− 5	+ 2	+ 4	+ 5	− 1
7. Constraints	38	47	52	32	—
8. Home Sales will be	—	+64	+55	+68	+81
9. Exports will be	+42	+30	+20	+27	+37
10. Labour Force will be	+ 7	− 9	−10	+16	+22
11. Investment was	+ 7	+ 7	+18	+ 5	+25
12. Investment will be	+34	+26	—	+18	+51

Replies to Questions 2 and 8 are only available from January 1968 onwards.

TABLE 5.2: INDUSTRY GROUP—ALL MANUFACTURING

	Weighted Replies %			Apparent Trend
In 3rd Quarter 1968 compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	85	6	9	Higher
2. Value of Home Sales was	83	10	7	Higher
3. Value of Exports was	58	10	32	Higher
4. Wage Paid Labour Force was..	40	34	26	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	3	73	24	Adequate
6. Stocks of Materials are considered to be ..	5	91	4	Adequate
During 3rd Quarter 1968:				
7. Could more be produced with present resources	Yes .. .. .. 50 No 50			
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 50 „ Skilled Labour .. 21 „ Unskilled Labour .. 12 „ Raw Materials Supply .. 7 „ Cash and/or Credit .. 1 Any Other Reason .. 9			Insufficient Capacity
In 4th Quarter 1968 compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	83	15	2	Higher
9. Value of Exports will be	61	15	24	Higher
10. Wage Paid Labour Force will be	42	38	20	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	59	7	34	Higher
12. Capital investment in coming year compared with last year will be	63	25	12	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	76	5	19	Higher
2. Value of Home Sales was	81	12	7	Higher
3. Value of Exports was	45	8	47	Same
4. Wage Paid Labour Force was	33	47	20	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	7	78	15	Adequate
6. Stocks of Materials are considered to be	5	89	6	Adequate

During 3rd Quarter 1968:

7. Could more be produced with present resources	Yes 77			Yes
	No 23			

		Apparent Trend
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 18	Insufficient Unskilled Labour
	,, Skilled Labour .. —	
	,, Unskilled Labour .. 39	
	,, Raw Materials Supply .. 19	
	,, Cash and/or Credit .. —	
	Any Other Reason .. 24	

	Higher	Same	Lower	
In 4th Quarter 1968 Compared with 4th Quarter 1967:				
8. Value of Home Sales will be	79	16	5	Higher
9. Value of Exports will be	58	4	38	Higher
10. Wage Paid Labour Force will be	34	46	20	Same
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	75	—	25	Higher
12. Capital investment in coming year compared with last year will be	75	—	25	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	100	—	—	Higher
2. Value of Home Sales was	100	—	—	Higher
3. Value of Exports was	15	85	—	Same
4. Wage Paid Labour Force was	16	37	47	Lower
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	100	—	Adequate
6. Stocks of Materials are considered to be ..	—	100	—	Adequate
During 3rd Quarter 1968:				
7. Could more be produced with present resources	Yes 86			Yes
	No 14			
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 100			Insufficient Capacity
	„ Skilled Labour .. —			
	„ Unskilled Labour .. —			
	„ Raw Materials Supply .. —			
	„ Cash and/or Credit .. —			
	Any Other Reason .. —			
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	53	47	—	Higher
9. Value of Exports will be	15	85	—	Same
10. Wage Paid Labour Force will be	15	—	85	Lower
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. *Capital investment in past year compared with previous year was	—	—	—	
12. *Capital investment in coming year compared with last year will be	—	—	—	

*The number of replies received to this question is not sufficient to permit an estimate to be made.

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	71	14	14	Higher
2. Value of Home Sales was	58	13	29	Higher
3. Value of Exports was	76	16	8	Higher
4. Wage Paid Labour Force was	51	12	37	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	3	76	21	Adequate
6. Stocks of Materials are considered to be ..	—	95	5	Adequate

During 3rd Quarter 1968:

		Apparent Trend
7. Could more be produced with present resources	Yes .. .. .. 34 No 66	No

7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 41
	    ,, Skilled Labour .. 27
	    ,, Unskilled Labour .. 27
	    ,, Raw Materials Supply .. 5
	    ,, Cash and/or Credit .. —
	Any Other Reason .. —
		Insufficient Capacity

	Higher	Same	Lower	Apparent Trend
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	69	30	1	Higher
9. Value of Exports will be	87	13	—	Higher
10. Wage Paid Labour Force will be	57	39	4	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	46	7	47	Same
12. Capital investment in coming year compared with last year will be	65	—	35	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	92	2	6	Higher
2. Value of Home Sales was	63	17	20	Higher
3. Value of Exports was	82	15	3	Higher
4. Wage Paid Labour Force was	35	26	39	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	5	58	37	Insufficient
6. Stocks of Materials are considered to be ..	9	87	4	Adequate

During 3rd Quarter 1968:

			Apparent Trend
7. Could more be produced with present resources	Yes 10		No
	No 90		
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 48		Insufficient Capacity
	„ Skilled Labour .. 44		
	„ Unskilled Labour .. 2		
	„ Raw Materials Supply .. 1		
	„ Cash and/or Credit .. 1		
	Any Other Reason .. 4		

In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	69	30	1	Higher
9. Value of Exports will be	87	13	—	Higher
10. Wage Paid Labour Force will be	57	39	4	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	88	12	—	Higher
12. Capital investment in coming year compared with last year will be	100	—	—	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	76	16	8	Higher
2. Value of Home Sales was	72	15	13	Higher
3. Value of Exports was	49	48	3	Higher
4. Wage Paid Labour Force was	34	49	17	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	4	88	8	Adequate
6. Stocks of Materials are considered to be ..	4	88	8	Adequate
During 3rd Quarter 1968:				
7. Could more be produced with present resources	Yes 41			No
	No 59			
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 20			Insufficient Skilled Labour
	,, Skilled Labour .. 51			
	,, Unskilled Labour .. 4			
	,, Raw Materials Supply .. 20			
	,, Cash and/or Credit .. 2			
	Any Other Reason .. 3			
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	88	12	—	Higher
9. Value of Exports will be	52	47	1	Higher
10. Wage Paid Labour Force will be	33	63	4	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	—	100	—	Same
12. Capital investment in coming year compared with last year will be	50	50	—	Higher

TABLE 5.8: INDUSTRY GROUP—PAPER AND PRINTING

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	92	—	8	Higher
2. Value of Home Sales was	100	—	—	Higher
3. Value of Exports was	67	26	7	Higher
4. Wage Paid Labour Force was	36	39	25	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	100	—	Adequate
6. Stocks of Materials are considered to be ..	7	72	21	Adequate

During 3rd Quarter 1968:

7. Could more be produced with present resources	Yes 69	Yes
	No 31	

7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 100	Insufficient Capacity
	„ Skilled Labour .. —	
	„ Unskilled Labour .. —	
	„ Raw Materials Supply .. —	
	„ Cash and/or Credit .. —	
	Any Other Reason .. —	

	Higher	Same	Lower	
In 4th Quarter 1968 Compared with 4th Quarter 1967:				
8. Value of Home Sales will be	88	12	—	Higher
9. Value of Exports will be	67	26	7	Higher
10. Wage Paid Labour Force will be	37	39	24	Same
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	—	—	100	Lower
12. Capital investment in coming year compared with last year will be	—	100	—	Same

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	100	—	—	Higher
2. Value of Home Sales was	96	4	—	Higher
3. Value of Exports was	82	18	—	Higher
4. Wage Paid Labour Force was	31	30	39	Same
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	61	39	Insufficient
6. Stocks of Materials are considered to be ..	—	23	77	Insufficient

During 3rd Quarter 1968:

		Apparent Trend
7. Could more be produced with present resources	Yes .. .. .. 51 No 49	Yes
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 24 „ Skilled Labour .. 24 „ Unskilled Labour .. — „ Raw Materials Supply .. — „ Cash and/or Credit .. — Any Other Reason .. 56	Other Reasons

	Weighted Replies (%)			Apparent Trend
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	96	4	—	Higher
9. Value of Exports will be	82	18	—	Higher
10. Wage Paid Labour Force will be	31	30	39	Same
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	100	—	—	Higher
12. Capital investment in coming year compared with last year will be	100	—	—	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	92	—	8	Higher
2. Value of Home Sales was	100	—	—	Higher
3. Value of Exports was	56	13	31	Higher
4. Wage Paid Labour Force was	53	33	14	Higher
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	32	68	Insufficient
6. Stocks of Materials are considered to be	—	100	—	Adequate
During 3rd Quarter 1968:				
7. Could more be produced with present resources	Yes 22			No
	No 78			
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 60			Insufficient Capacity
	„ Skilled Labour .. 9			
	„ Unskilled Labour .. —			
	„ Raw Materials Supply .. —			
	„ Cash and/or Credit .. —			
	Any Other Reason .. 31			
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	100	—	—	Higher
9. Value of Exports will be	47	31	22	Higher
10. Wage Paid Labour Force will be	53	13	14	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	100	—	—	Higher
12. Capital investment in coming year compared with last year will be	100	—	—	Higher

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	85	15	—	Higher
2. Value of Home Sales was	85	15	—	Higher
3. Value of Exports was	80	—	20	Higher
4. Wage Paid Labour Force was	61	39	—	Higher
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	73	27	Adequate
6. Stocks of Materials are considered to be ..	5	95	—	Adequate

During 3rd Quarter 1968:

		Apparent Trend
7. Could more be produced with present resources	Yes .. .. .. 43 No 57	Yes
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 38 ,, Skilled Labour .. 34 ,, Unskilled Labour .. 13 ,, Raw Materials Supply .. 10 ,, Cash and/or Credit .. — Any Other Reason .. 5	Insufficient Capacity

	Higher	Same	Lower	Apparent Trend
In 4th Quarter 1968 Compared with 4th Quarter 1967:				
8. Value of Home Sales will be	96	4	—	Higher
9. Value of Exports will be	45	48	7	Higher
10. Wage Paid Labour Force will be	54	46	—	Higher
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. Capital investment in past year compared with previous year was	15	—	85	Lower
12. Capital investment in coming year compared with last year will be	—	100	—	Same

TABLE 5.12: INDUSTRY GROUP—OTHER MANUFACTURING

	Weighted Replies (%)			Apparent Trend
In 3rd Quarter 1968 Compared with 3rd Quarter 1967:	Higher	Same	Lower	
1. Value of Production was	100	—	—	Higher
2. Value of Home Sales was	100	—	—	Higher
3. Value of Exports was	78	—	22	Higher
4. Wage Paid Labour Force was	18	18	64	Lower
At End September 1968:	Excessive	Adequate	Insufficient	
5. Stocks of Finished Products are considered to be	—	64	36	Insufficient
6. Stocks of Materials are considered to be ..	—	100	—	Adequate
During 3rd Quarter 1968:				
7. Could more be produced with present resources	Yes .. .. .. 36 No 64			No
7a. Where firms replied No, the causes responsible were	Insufficient Capacity .. 100 „ Skilled Labour .. — „ Unskilled Labour .. — „ Raw Materials Supply .. — „ Cash and/or Credit .. — Any Other Reason .. —			Insufficient Capacity
In 4th Quarter 1968 Compared with 4th Quarter 1967:	Higher	Same	Lower	
8. Value of Home Sales will be	82	18	—	Higher
9. Value of Exports will be	78	—	22	Higher
10. Wage Paid Labour Force will be	36	—	64	Lower
For Firms whose financial year ended during 3rd Quarter 1968:	Higher	Same	Lower	
11. *Capital investment in past year compared with previous year was	—	—	—	
12. *Capital investment in coming year compared with last year will be	—	—	—	

*The number of replies to this question is not sufficient to enable an estimate to be made.

SECTION 6: SEASONALLY CORRECTED QUARTERLY SERIES

Introductory Notes

Since 1965 The Economic and Social Research Institute has undertaken the seasonal correction of certain important economic series, and made the results available to those on a restricted circulation list. Henceforth it is intended to publish these seasonally corrected series as an integral part of the *Quarterly Economic Commentry*, and they will be found in the following three tables.

Table 6.1 sets out the actual data to the latest date available. The selected series have been taken from the Central Statistics Office's "Economic Series" and "Quarterly Industrial Inquiry", published in the *Irish Statistical Bulletin*, and from the Central Bank of Ireland's *Quarterly Bulletin*, with the latest figures in each case being available in the form of stencilled supplements. Two of the series are derived, from other series in the table, Series 3 from Series 2 and 7 and Series 20 from Series 19 and 12.

Table 6.2 shows the seasonally corrected figures for the 24 out of the 35 series in Table 6.1 which analysis of variance has shown to be subject to significant seasonal fluctuations. The method used for their derivation is set out in "Seasonality in Irish Economic Statistics" by C. E. V. Leser (E.R.I. Paper No. 26). The correction factors for the current year are derived from the data for the preceding five year period. Thus the factors by which the 1968 original data must be divided (the result being multiplied by either 400 or 100) to arrive at the seasonally corrected series are based on the period 1963–1967, and are as follows:

Series No.	Quarter			
	I	II	III	IV
1	97.2	100.8	97.6	104.4
2	95.8	102.5	98.9	102.8
5	118.9	87.7	80.2	113.2
6	113.2	90.9	98.6	97.3
7	99.0	99.8	100.7	100.5
8	127.1	92.8	76.5	103.6
9	117.9	100.4	85.0	96.7
13	101.7	101.5	97.6	99.2
19	98.6	100.8	100.4	100.2
21	91.3	99.6	102.7	106.4
22	111.8	120.4	100.3	67.5
23	134.1	89.3	91.8	84.8
24	111.6	95.6	92.4	100.4
25	101.5	103.9	93.8	100.8
26	97.0	94.6	106.6	101.8
30	99.1	98.4	99.9	102.6
31	101.6	102.8	94.2	101.4
34	101.8	98.7	98.7	100.8
35	101.4	98.6	98.9	101.1

A further 5 series, Nos. 3, 20, 27, 28 and 29, are indirectly corrected through their relationship to other seasonally corrected or seasonality-free series. No regular seasonal pattern is observed in the remaining series, Nos. 4, 19, 11, 12, 14, 15, 16, 17, 18, 32 and 33, and consequently no correction is necessary.

The figures in Table 6.2 make it possible to interpret and compare changes between consecutive quarters, where otherwise comparisons would have to be confined to the corresponding quarter of the previous year or average of years. Whilst it is possible that in isolated cases, where the seasonal pattern is changing, the correction can in itself impart some instability to the trend, in general the corrected series can be used with a fair degree of confidence in drawing inferences as to short-term trends.

Table 6.3 shows all the corrected series, and three of the more important seasonality-free series, converted to the form of index numbers with 1961=100, and covering a longer period than the other two tables. The purpose is to facilitate comparison between trends in the different series. To the same end, the information given in Table 6.3 is shown in chart form in the following pages (Section 7). As a common scale is kept throughout the section, it can readily be seen how far the trends of different series have diverged from each other over the past few years.

A few points regarding specific series need to be borne in mind to avoid possibly misleading conclusions being drawn. Due to changes in definition in recent years, both of the series (Nos. 8 and 9) dealing with unemployment need to be treated with great caution. The apparent trend reflects these changes, and should not be interpreted as indicating genuine movements in the level of unemployment.

Due to the bank dispute of 1966, only average figures for the period from April to October of that year are available for Series 23, 24 and 31. These averages have been distributed between the quarters of 1966 according to the average monthly pattern observed in the period 1962–1965 and in 1967. The resulting figures are shown in the tables and used in calculating the seasonal correction factors for 1968. Naturally the figures for the period affected by the dispute must therefore be treated with some reserve, but it is felt that the seasonal corrections based in part on these figures are reliable.

Also due to the same dispute, no figures at all are available during the period for Series 30 and 34. Figures for the period were calculated by intrapolation according to the normal seasonal pattern from the known values on either side of the stoppage. Whilst it is felt justifiable to use these figures for subsequent seasonal correction, it is felt that they are not sufficiently reliable to show separately in the tables.

The UK seamen's strike of 1966 distorted the normal pattern of trade. While the actual figures are shown in the tables, their inclusion in calculation of subsequent seasonal correction factors could be misleading. Accordingly an alternative set of figures was calculated for Series 25 and 26 by distributing the aggregate figures for the last three quarters of 1966 according to the normal quarterly pattern, with the results for imports being further modified to take account of divergences from normal in the seasonal pattern of industrial production and retail sales in the course of 1966. These alternative figures have been used in calculating the seasonal correction factors for 1968, and are also shown as points joined by dotted lines on the appropriate charts.

Series 35 is the Central Bank's new series for external monetary reserves. This series has been carried back to 1963 by the ESRI and only the figures relating to 1967 and 1968 are directly based on the official Central Bank estimates. However it is felt that any discrepancies are likely to be small, as it is only in 1968 that the new series has diverged significantly from the older series of External Assets. It is intended to publish both Series 34 and 35 for a short period, and then to drop Series 34.

QUARTERLY SERIES

Number	Series	Unit	1966		
			I	II	III
	PRODUCTION				
1	Manuf. Industry: Production Volume	1953=100	166.5	169.7	176.4
2	Tr. Goods Industries: Production Volume	1953=100	168.0	176.5	185.8
3	Tr. Goods Industries: Prod. per Worker	1953=100	138.6	144.6	148.9
4	New Houses Built	No.	2,228	2,560	2,135
5	Electricity Output	Mill. Kw.h.	1,068.8	812.4	753.8
	MANPOWER				
6	Sales of Insurance Stamps	'000	7,633	5,884	6,806
7	No. in Tr. Goods Industries	'000	182.6	183.8	187.9
8	Benefit Claims Current	'000	37.8	29.7	23.4
9	Live Register as Prop. of Insured	%	6.9	6.3	5.2
10	Net Passengers Outward—Sea and Air (Moving Annual Total)	'000	29.4	36.7	30.8
	PRICES				
11	Wholesale	1953=100	133.0	135.7	134.3
12	Consumer	1953=100	144.9	147.6	150.0
13	Agricultural	1953=100	117.2	119.1	112.6
14	Import (Unit Value)	1953=100	114.1	115.1	113.6
15	Export (Unit Value)	1953=100	111.7	114.8	113.7
16	Terms of Trade	1953=100	97.9	99.8	100.1
17	Stocks and Shares—Ordinary	1953=100	306.2	303.9	294.2
	WAGES, EARNINGS				
18	Agricultural Minimum Wages	shs.	160.8	164.2	173.5
19	Tr. Goods Inds.: av. Weekly Money Earnings	1953=100	193.9	206.2	215.9
	av. Weekly Real Earnings	1953=100	133.8	139.7	143.9
	CONSUMPTION				
21	Retail Sales	1961=100	120	130	142
22	New Cars Registered	No.	12,410	9,840	11,165
	GOVERNMENT				
23	Revenue Receipts (weekly av.)	£'000	6,295	4,379(a)	4,681(a)
24	Exchequer Expenditure (weekly av.)	£'000	6,027	5,130(a)	5,020(a)
	EXTERNAL TRADE				
25	Import Value	£ Mill.	90.42	85.65	97.00
26	Export Value	£ Mill.	57.34	50.87	66.09
27	Import Excess Value	£ Mill.	33.08	34.63	31.28
28	Import Volume	1953=100	171.1	160.5	184.2
29	Export Volume	1953=100	179.1	154.8	201.4
	BANKING, FINANCE				
30	Money Supply (Unadjusted)	£ Mill.	318.2	(b)	(b)
31	Bank debits—non govt. (daily av.)	£ Mill.	17.98	17.22(a)	16.49(a)
32	Bills, Loans, Advances (within State)	£ Mill.	320.2	(b)	(b)
33	Investments (within State)	£ Mill.	32.3	(b)	(b)
34	External Assets—Bank system and Dep. Funds	£ Mill.	232.8	(b)	(b)
35	External Monetary Reserves	£ Mill.	231.7	(b)	(b)

See Notes to Table 6.2.

IV	1967				1968			
	I	II	III	IV	I	II	III	IV
187.8	179.5	192.8	184.7	201.7	193.7	212.6		
190.7	183.1	204.2	193.6	204.8	197.7	226.0		
153.2	150.1	165.2	154.9	163.4	160.9	179.2		
2,520	3,015	2,817	2,640	3,063	2,897	2,777	2,891	
1,124.9	1,164.4	933.4	846.7	1,216.4	1,265.4	1,017.9	947.2	
6,707	7,511	←13,323→		6,567	7,598	6,417		
187.8	184.2	186.7	188.6	189.0	185.5	189.9		
33.2	40.2	29.1	24.8	32.5	40.5	34.6	30.7	
6.0	7.7	6.5	6.0	6.6	7.7	6.8	6.0	
26.3	13.5	10.2	20.5	49.1	38.2	22.96		
134.0	136.3	138.4	137.0	139.0	143.6	145.9		
150.4	150.6	153.2	153.3	154.3	157.5	160.0	160.3	
114.2	118.8	118.9	114.9	124.1	132.2	131.1	128.7	
114.3	113.4	113.2	112.6	113.0	120.5	122.5		
110.8	114.3	114.2	112.6	114.4	121.0	122.6		
96.9	100.8	100.9	99.9	101.3	100.5	100.1		
275.9	272.2	284.6	300.4	320.9	357.6	410.6	449.3	
180.5	180.5	180.5	180.5	180.5	180.5	195.75	195.75	
219.8	217.6	222.1	224.0	231.6	230.2	240.9		
146.1	144.5	145.0	146.1	150.1	146.2	150.6		
147	127	138	144	153	135	150.6		
5,949	10,369	12,476	9,281	7,346	13,240	14,983	11,938	
4,709(a)	7,149	5,349	5,407	5,025	7,544	5,691	6,273	
6,353(a)	6,394	5,714	6,306	6,670	7,247	6,716	7,463	
99.81	100.31	98.47	92.91	98.92	115.30	124.15	116.5	
68.86	64.37	67.27	76.38	75.43	74.53	80.12	87.6	
30.96	35.94	31.20	16.53	23.49	40.77	44.03	28.9	
188.2	190.8	187.6	177.9	188.8	206.5	218.7		
217.0	196.7	205.6	236.9	230.5	214.9	228.2		
351.0	339.4	339.5	357.5	372.9	373.1	370.3	390.5	
19.26(a)	20.21	22.36	20.22	22.19	21.90	22.36	23.69	
339.3	339.5	335.1	346.4	363.6	379.0	394.0	405.2	
51.8	49.6	49.0	48.3	47.5	49.2	49.2	62.5	
244.4	254.4	262.0	275.6	291.2	284.3	250.1	239.9	
244.0	254.1	261.7	275.7	292.0	292.2	280.1	281.0	

Number	Series	Unit	1966		
			I	II	III
5	Electricity output	Mill. Kw.h.	3,545	3,731	3,741
6	Sales of insurance stamps	'000	26,424	25,751	27,922
22	New cars registered	No.	46,048	31,816	46,715
25	Value of imports	£ Mill.	358.5	328.8	415.9
26	Value of exports	£ Mill.	236.7	218.6	247.1
27	Import excess	£ Mill.	121.8	110.2	168.8
7	Employment tr. goods inds.	'000	184.4	184.1	186.6
8	Benefit claims current	'000	29.3	31.8	30.7
9	Live register prop. of insured	%	5.8	6.3	6.2
23	Weekly revenue receipts	£'000	4,598	5,028(a)	5,150(a)
24	Weekly exchequer expenditure	£'000	5,278	5,278(a)	5,510(a)
30	Money supply	£ Mill.	320.4	(b)	(b)
31	Daily bank debits - non-govt.	£ Mill.	17.7	17.0(a)	17.2(a)
34	External assets	£ Mill.	229.8	(b)	(b)
35	External monetary reserves	£ Mill.	228.5	(b)	(b)
1	Prod. Volume - manuf. inds.	1953=100	170.3	168.4	180.7
2	Prod. Volume - tr. goods inds.	,,	175.1	172.4	187.4
3	Production per worker	,,	143.1	141.1	151.3
13	Agricultural prices	,,	115.2	118.0	114.9
19	Money Earnings - tr. goods inds.	,,	195.9	204.8	216.3
20	Real Earnings - tr. goods inds.	,,	135.2	138.7	144.2
28	Volume of imports	,,	169.6	154.0	200.3
29	Volume of exports	,,	184.8	166.3	193.6
21	Retail Sales	1961=100	130.4	130.4	139.8

NOTES. a—Average figures April–October 1966 allocated according to normal seasonal pattern.
b—Figures unavailable due to bank dispute.

IV	1967				1968			
	I	II	III	IV	I	II	III	IV
Equivalent Annual Aggregates								
4,000	3,878	4,282	4,223	4,325	4,257	4,643	4,724	
27,917	26,080	28,242	28,242	27,334	26,848	28,236		
34,587	34,592	41,866	37,087	42,709	47,370	49,777	47,608	
393.0	397.7	378.0	398.3	389.5	454.4	477.3	496.8	
267.4	265.7	289.0	285.5	292.9	307.3	338.7	328.7	
125.5	132.0	89.0	112.8	96.6	147.1	138.6	172.4	
Average Value During Quarter								
186.6	185.6	186.6	186.9	187.8	186.9	190.3		
32.7	31.1	31.1	32.8	32.0	31.8	37.3	40.1	
6.3	6.5	6.4	7.1	6.9	6.5	6.8	7.1	
5,533(a)	5,229	6,141	5,948	5,905	5,625	6,373	6,833	
6,516(a)	5,599	5,879	6,922	6,841	6,494	7,025	8,076	
342.0	341.8	343.3	360.7	363.1	376.4	376.3	390.8	
19.1(a)	19.9	22.1	21.1	21.9	21.6	21.8	25.1	
240.0	251.1	266.0	280.7	285.5	279.3	253.4	243.0	
241.3	250.6	265.4	278.7	288.8	288.2	284.0	284.1	
Index Numbers 1953=100								
179.9	184.7	191.3	189.2	193.2	199.3	210.9		
185.9	190.9	199.4	195.3	199.6	201.9	207.6		
150.0	155.0	160.9	157.4	160.1	162.7	164.2		
114.9	117.3	117.4	117.0	125.1	129.9	129.2		
218.7	221.1	220.3	222.7	231.1	233.5	239.0		
145.4	146.8	143.8	145.3	149.8	148.3	149.4		
185.2	189.1	180.0	190.7	185.8	203.4	210.5		
210.7	203.0	220.8	221.4	223.8	221.5	241.2		
Index Numbers 1961=100								
138.7	139.3	138.1	140.9	143.6	147.9	151.3		

Number	Series	1963				1964				
		I	II	III	IV	I	II	III	IV	I
	PRODUCTION:									
1	Manuf. Ind. Prod. Vol.	107.4	108.4	112.3	115.4	117.2	120.7	120.3	121.1	123.8
2	Tr. Goods Inds. Prod. Vol.	108.0	108.4	114.9	117.4	118.9	119.8	121.8	123.0	121.9
3	Tr. Goods Inds. Prod. per Head	103.9	104.0	107.8	109.7	109.7	110.1	111.6	113.3	112.3
5	Electricity Output	122.1	120.1	120.0	121.3	125.6	132.2	130.3	136.9	143.8
	MANPOWER:									
6	Sales of Insurance Stamps	107.8	101.9	99.6	103.6	106.0	109.7	104.5	108.0	100.6
7	No. in Tr. Goods Inds.	104.0	104.3	106.8	107.7	108.5	108.9	109.2	108.7	108.7
8	Benefit Claims	113.5	108.2	103.3	105.7	102.2	103.0	106.9	103.2	101.4
9	Live Register/Insured	110.4	106.2	103.5	101.7	98.1	100.0	100.2	105.2	96.3
	PRICES:									
11	Wholesale (not corrected)	103.9	104.4	104.4	104.7	107.6	110.9	111.6	112.1	113.9
12	Consumer (not corrected)	106.2	105.9	105.8	109.1	109.6	113.9	115.4	116.6	117.9
13	Agricultural	100.3	101.1	103.7	103.7	106.2	111.5	116.7	117.8	118.6
	EARNINGS:									
19	Tr. Goods Inds.: Money Earnings	111.1	113.5	115.5	115.7	124.1	129.9	129.5	128.5	129.3
20	Real Earnings	104.5	107.2	109.1	106.0	113.1	113.9	113.8	110.1	109.7
	CONSUMPTION:									
21	Retail Sales	108.8	112.5	114.4	117.6	117.9	122.5	127.2	127.4	129.7
22	New Cars Registered	119.3	126.4	136.9	140.9	127.6	147.5	151.6	156.3	166.6
	GOVERNMENT:									
23	Revenue Receipts	115.5	122.3	117.9	119.7	133.3	145.3	144.9	150.7	153.6
24	Exchequer Expenditure	115.2	122.3	123.8	128.2	132.2	142.5	157.3	152.5	164.7
	EXTERNAL TRADE:									
25	Import Value	101.8	119.5	116.3	132.1	131.2	135.1	134.8	132.1	140.3
26	Export Value	97.9	113.6	110.9	111.0	126.6	127.4	121.2	119.1	112.9
27	Import Excess	110.4	132.6	128.1	178.9	141.3	152.0	164.9	160.9	201.4
28	Import Volume	103.1	120.8	116.6	131.9	130.2	133.6	132.9	129.8	137.4
29	Export Volume	97.1	111.8	108.7	108.2	120.6	116.3	110.3	109.7	102.6
	BANKING, FINANCE:									
30	Money Supply	112.0	115.8	121.4	121.6	130.2	130.5	136.3	137.6	136.8
31	Bank Debits—Non-Govt.	114.8	120.9	123.9	127.0	140.2	135.2	137.2	144.3	143.3
32	Bills, Loans, Advances (not corrected)	114.8	117.1	123.5	125.0	128.3	134.1	139.4	143.9	145.9
34	External Assets	106.9	106.3	109.4	107.7	108.6	108.7	112.5	110.3	106.9
35	External Monetary Reserves	107.5	107.9	108.2	108.4	109.4	110.3	112.0	111.3	107.9

See Notes to Table 6.2.

1965			1966				1967				1968			
II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
126.6	125.4	127.0	126.0	123.8	132.9	132.3	135.8	140.7	139.1	142.1	146.5	155.1		
122.7	126.7	129.8	126.7	124.7	135.6	134.5	138.1	144.3	141.3	144.4	146.1	150.2		
112.7	115.8	119.1	115.6	114.0	122.2	121.2	125.2	129.9	127.1	129.3	131.4	132.6		
142.9	147.5	154.1	149.9	158.2	158.2	169.1	163.9	181.0	178.9	182.9	180.0	196.3	214.1	
110.1	101.2	110.7	104.5	101.8	110.5	110.4	103.2	111.7	111.7	108.1	106.2	111.7		
109.1	109.6	109.1	109.8	109.6	111.2	111.2	110.5	111.2	111.3	111.8	111.3	113.3		
100.5	105.9	116.5	111.9	121.7	117.3	125.0	118.8	118.8	125.3	122.3	121.7	142.5	153.3	
95.9	97.9	103.4	101.9	110.4	107.9	110.1	113.5	112.9	122.7	121.0	114.5	119.2	124.5	
115.7	114.7	114.4	115.9	118.3	117.1	116.8	118.8	120.7	119.4	121.2	125.2	127.2		
119.9	120.4	120.4	120.4	122.7	124.7	125.0	125.2	127.3	127.4	128.3	130.9	133.0	133.3	
118.6	116.6	115.7	115.2	118.0	114.9	114.9	117.3	117.4	117.0	125.1	129.9	129.2	131.8	
130.7	132.9	134.2	134.6	140.8	148.7	150.3	151.9	151.4	153.1	158.8	160.4	164.3		
108.8	110.3	111.5	111.7	114.6	119.2	120.2	121.3	118.8	120.1	123.8	122.6	123.5		
131.8	133.8	131.8	130.4	130.4	139.8	138.7	139.3	138.1	140.9	143.6	147.9	151.3		
158.6	155.9	110.2	161.2	111.4	163.6	121.1	121.1	146.6	129.8	149.5	165.9	174.3	166.7	
170.9	155.6	165.8	164.6	180.0a	184.4a	198.1a	187.2	219.9	212.9	211.4	201.4	228.2	244.6	
165.3	164.3	177.6	169.7	169.7a	177.3a	209.5a	180.1	189.1	222.6	220.0	208.9	225.9	259.7	
147.7	147.2	135.8	137.3	125.9	159.3	150.5	152.4	144.8	152.6	147.2	174.1	183.1	190.4	
115.2	133.5	132.5	131.4	121.4	137.2	148.5	147.6	160.5	158.6	162.7	170.6	188.1	182.5	
220.1	177.8	142.8	150.3	135.9	208.3	154.9	162.9	109.8	139.2	119.2	181.7	171.6	212.7	
143.3	143.0	131.9	133.3	121.1	157.5	145.6	148.7	141.5	149.9	146.1	159.9	165.5		
104.1	113.9	121.2	120.7	108.6	126.5	137.6	132.6	144.2	144.6	146.2	144.7	157.5		
141.0	142.9	142.6	145.7	(b)	(b)	155.5	155.4	156.1	163.9	165.1	171.1	171.1	177.7	
181.9	179.9	176.8	179.9	172.7a	174.8a	194.1a	202.3	224.6	214.5	222.6	219.0	221.5	254.9	
155.3	156.5	156.5	156.7	(b)	(b)	166.1	166.2	164.0	169.6	178.0	185.5	192.9	198.3	
100.5	100.2	103.0	107.4	(b)	(b)	112.1	117.3	124.2	131.1	133.4	130.5	118.3	113.4	
102.5	100.6	104.2	104.9	(b)	(b)	110.8	115.1	121.9	127.9	132.6	132.2	130.4	130.4	

SECTION 7: CHARTS OF ECONOMIC SERIES, SEASONALLY CORRECTED

SERIES 1: MANUFACTURING INDUSTRY PRODUCTION VOLUME
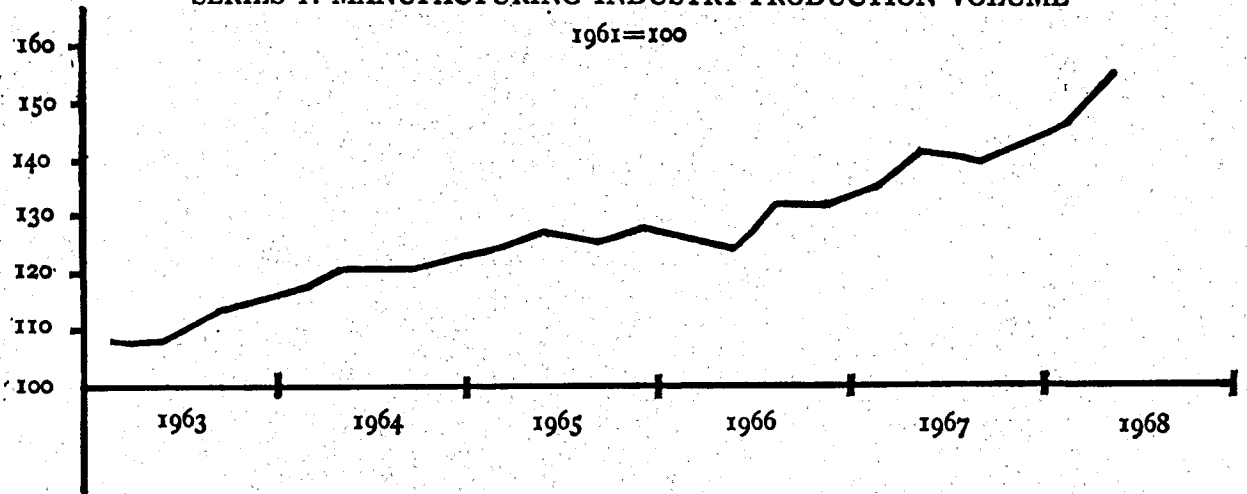
1961=100

SERIES 5: ELECTRICITY OUTPUT

1961=100
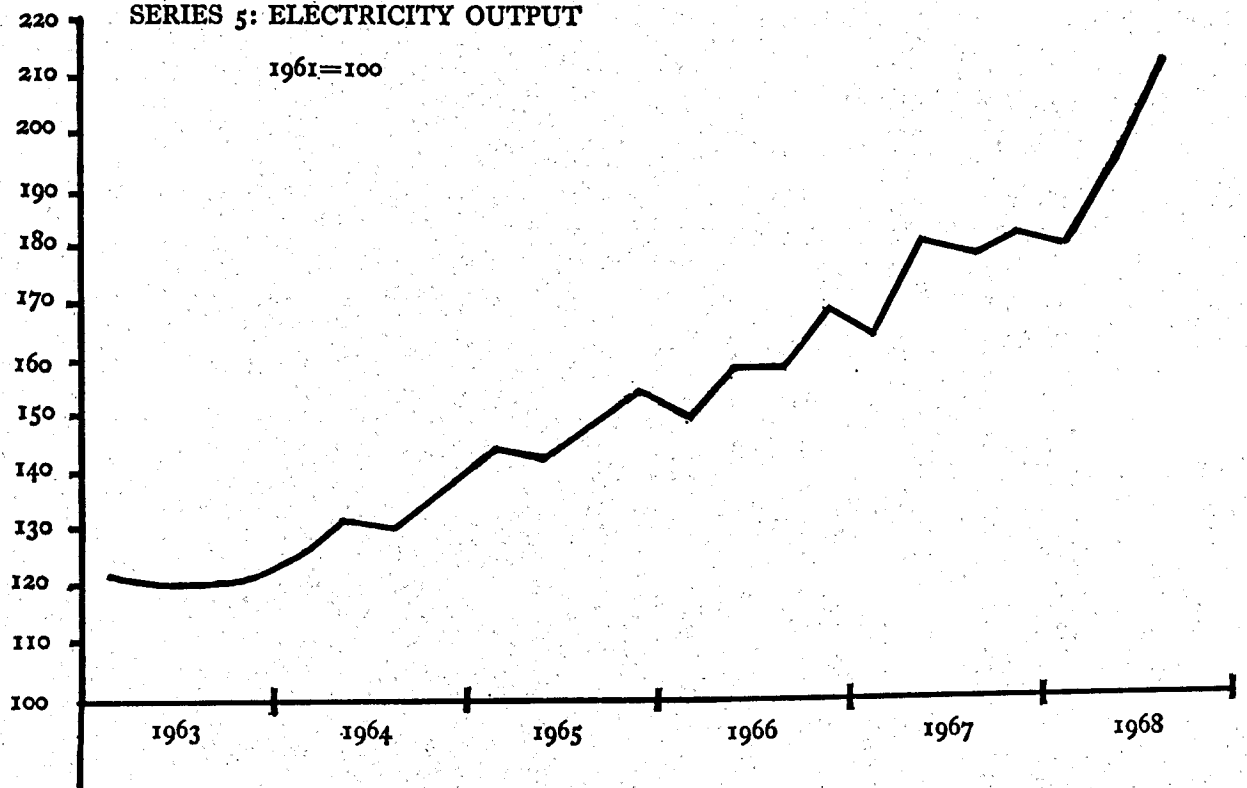
SERIES 2: TRANSPORTABLE GOODS INDUSTRIES PRODUCTION VOLUME
1961=100
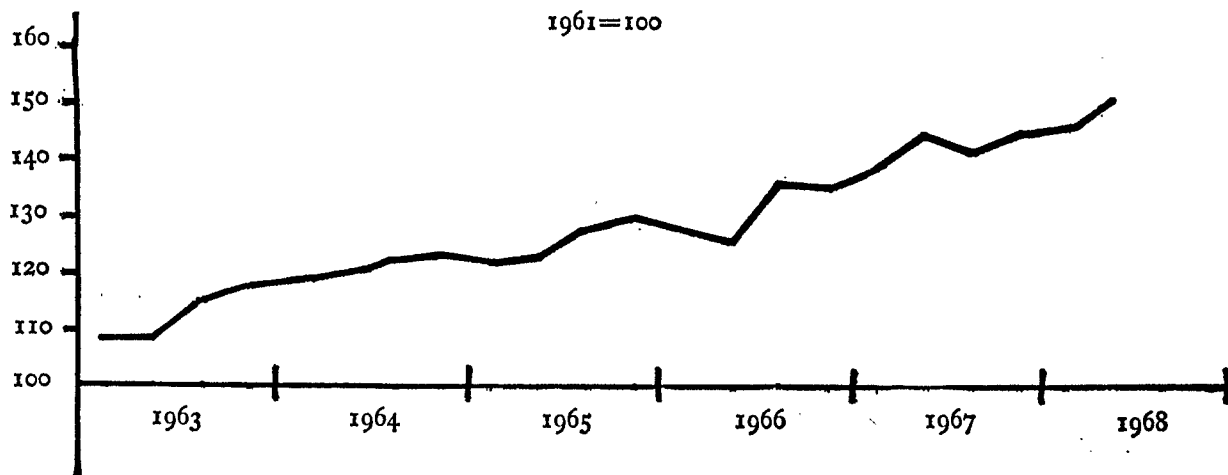
SERIES 3: TRANSPORTABLE GOODS INDUSTRIES PRODUCTION PER WORKER
1961=100
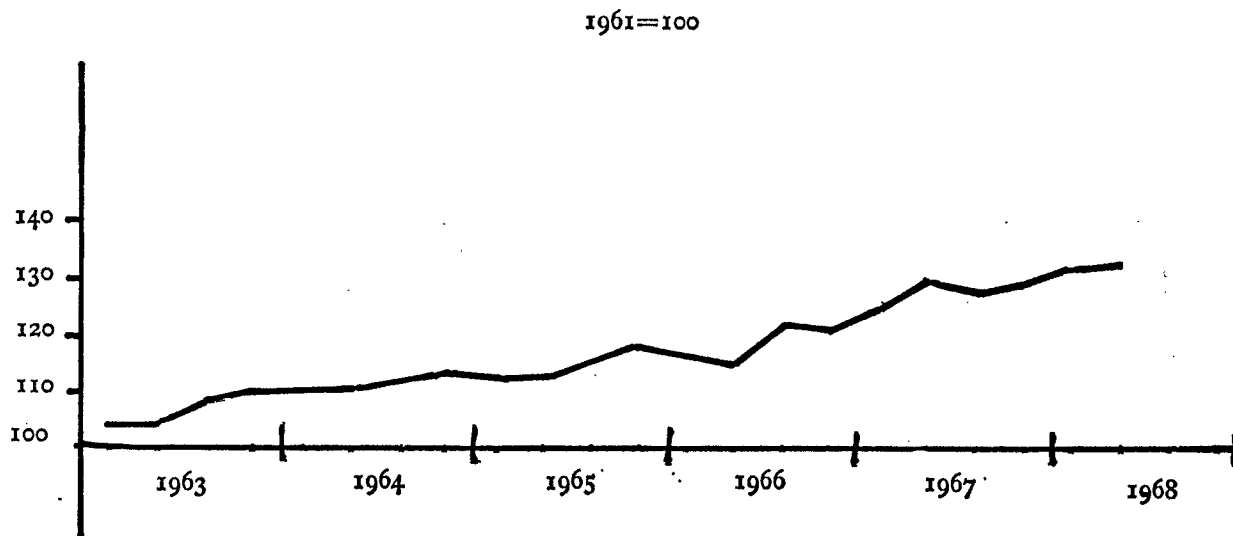
SERIES 6: SALES OF INSURANCE STAMPS

1961=100
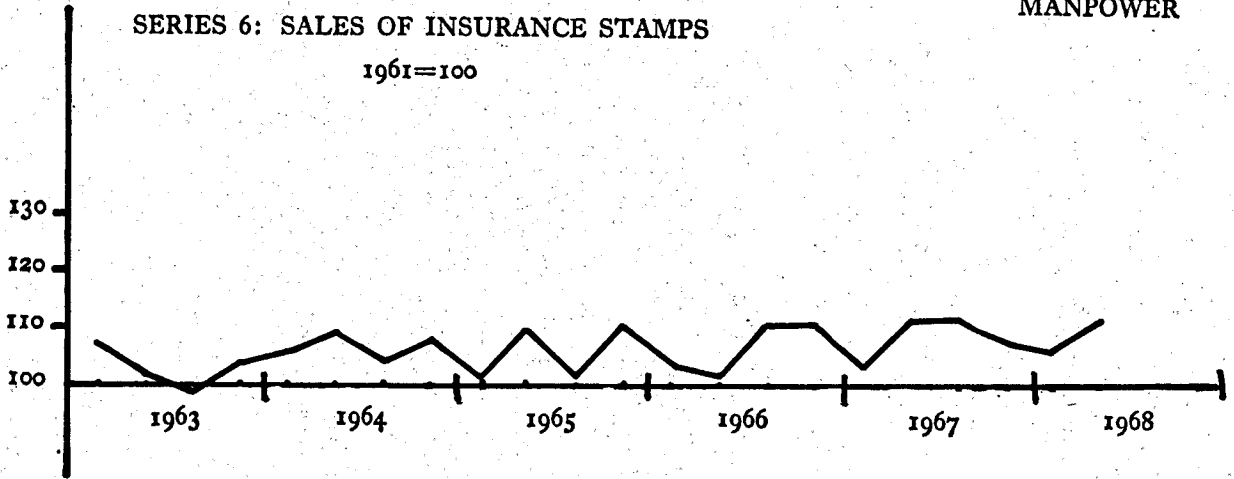
SERIES 7: NUMBERS EMPLOYED, TRANSPORTABLE GOODS INDUSTRIES
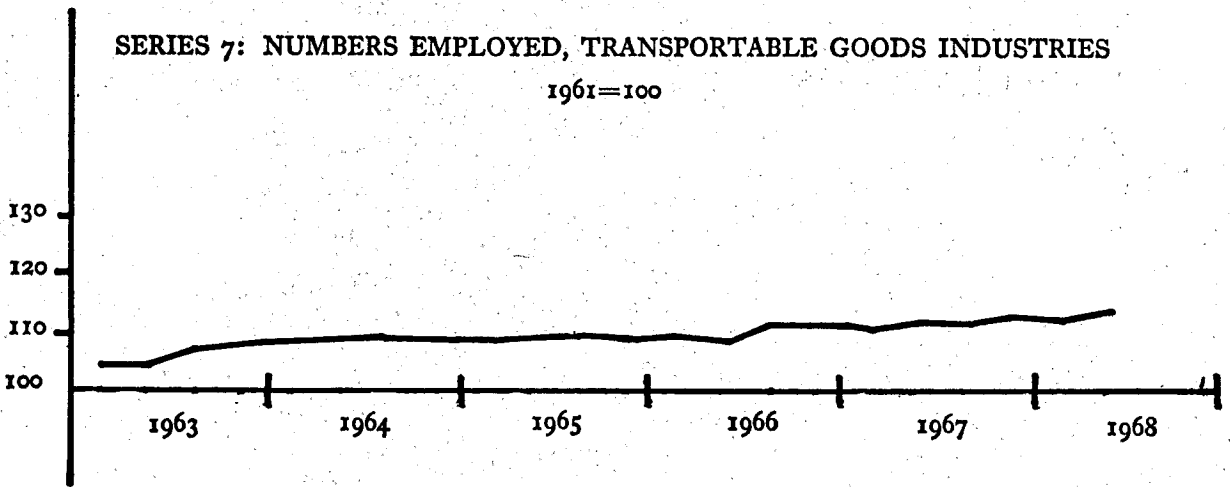
1961=100

SERIES 8: BENEFIT CLAIMS CURRENT   MANPOWER

1961=100
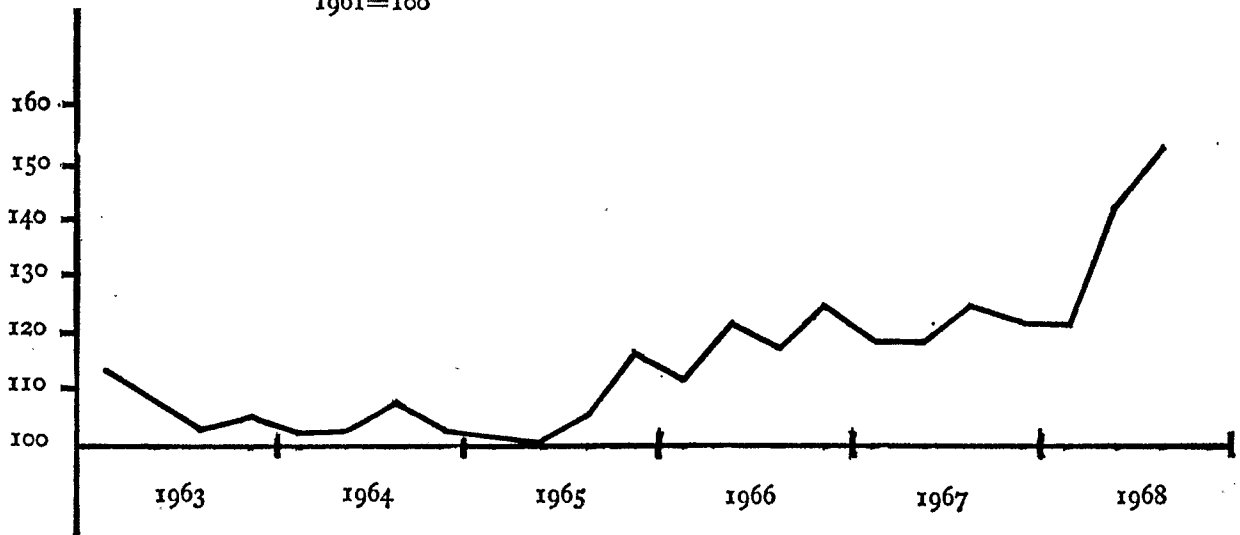
SERIES 9: LIVE REGISTER AS PROPORTION OF INSURED

1961=100
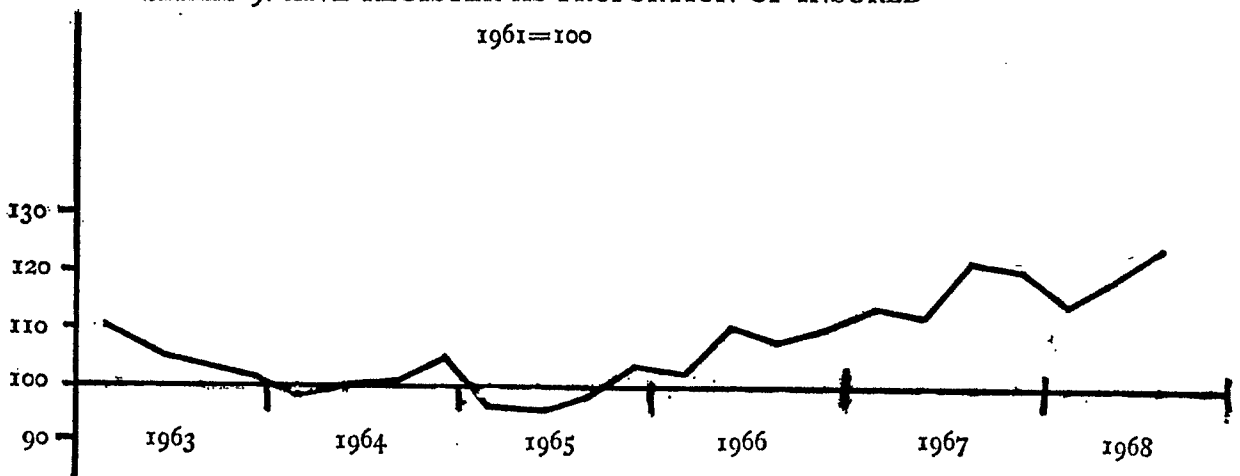
SERIES 11: WHOLESALE PRICE INDEX

1961=100
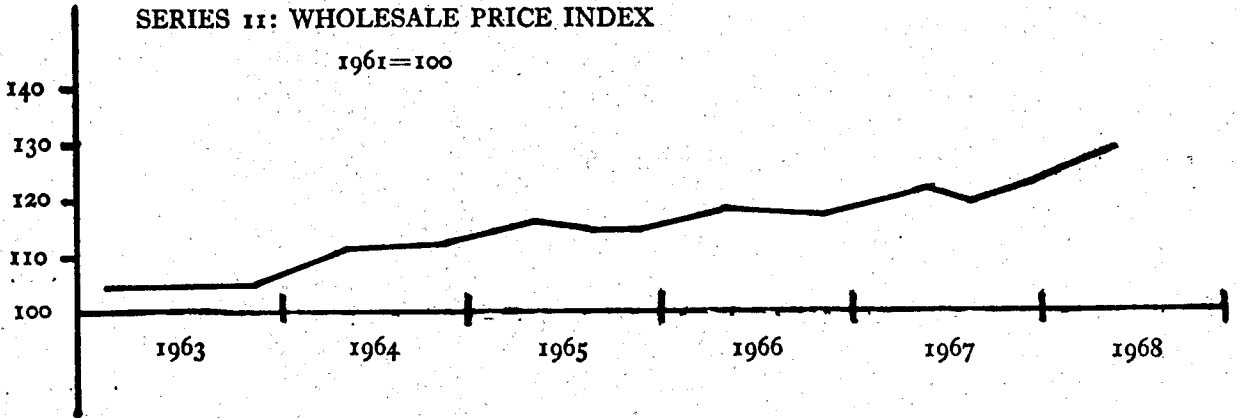
SERIES 12: CONSUMER PRICE INDEX

1961=100
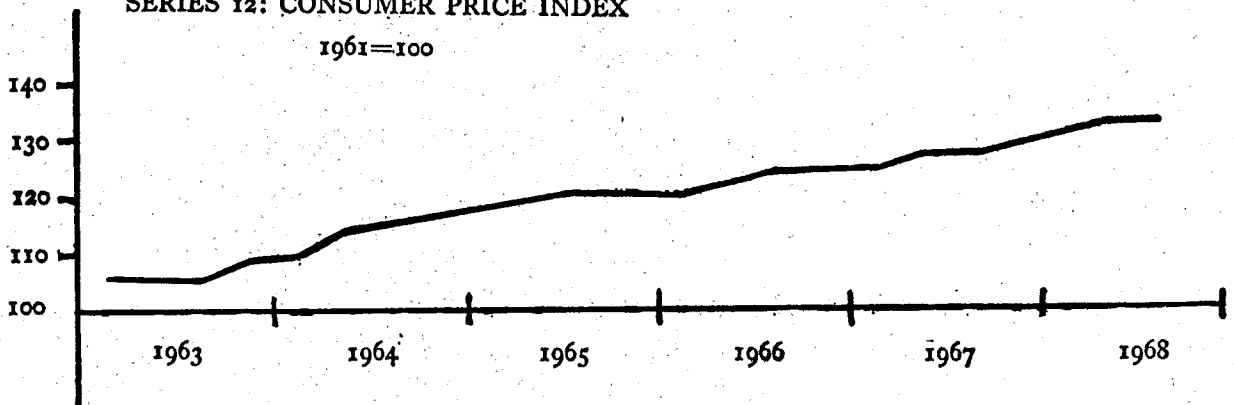
SERIES 13: AGRICULTURAL PRICE INDEX

1961=100

56
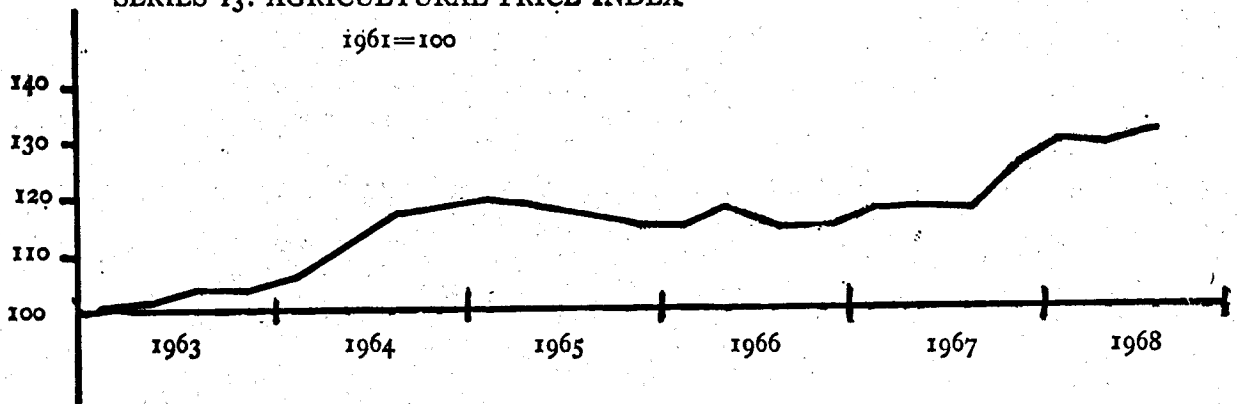
SERIES 19: MONEY EARNINGS, TRANSPORTABLE GOODS INDUSTRIES
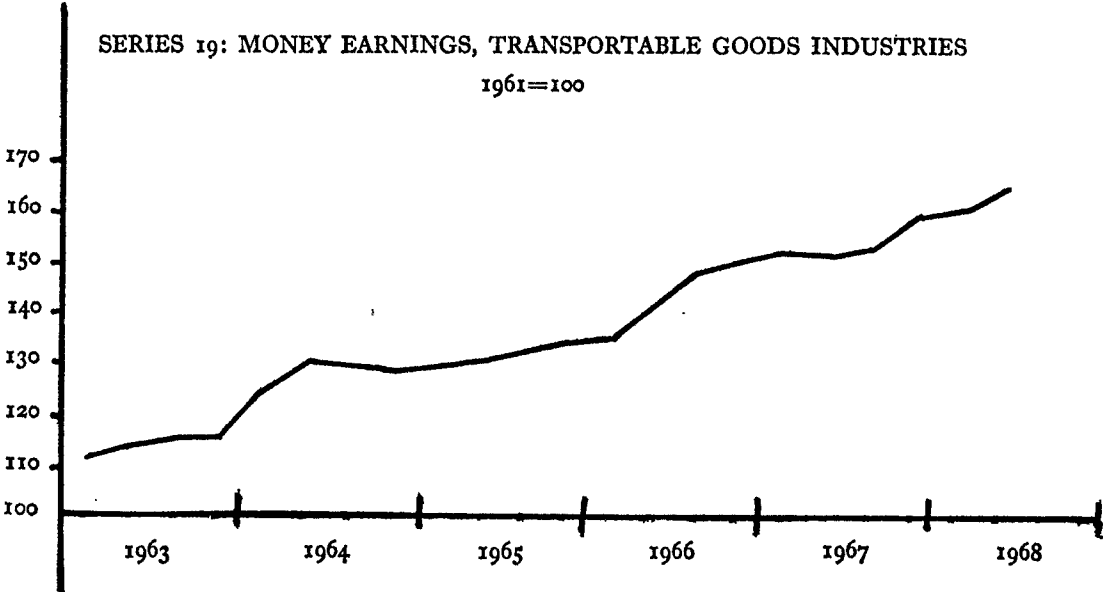
1961=100

SERIES 20: REAL EARNINGS, TRANSPORTABLE GOODS INDUSTRIES

1961=100

SERIES 21: RETAIL SALES INDEX

1961=100

SERIES 22: NEW CARS REGISTERED
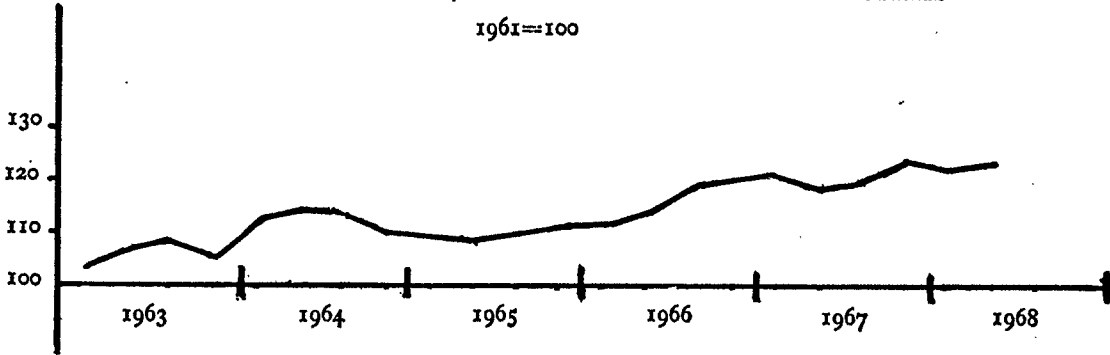
1961=100

CONSUMPTION AND GOVERNMENT

SERIES 23: REVENUE RECEIPTS

1961=100

SERIES 24: EXCHEQUER EXPENDITURE

1961=100

EXTERNAL TRADE

SERIES 25: IMPORT VALUE
1961=100

SERIES 26: EXPORT VALUE
1961=100
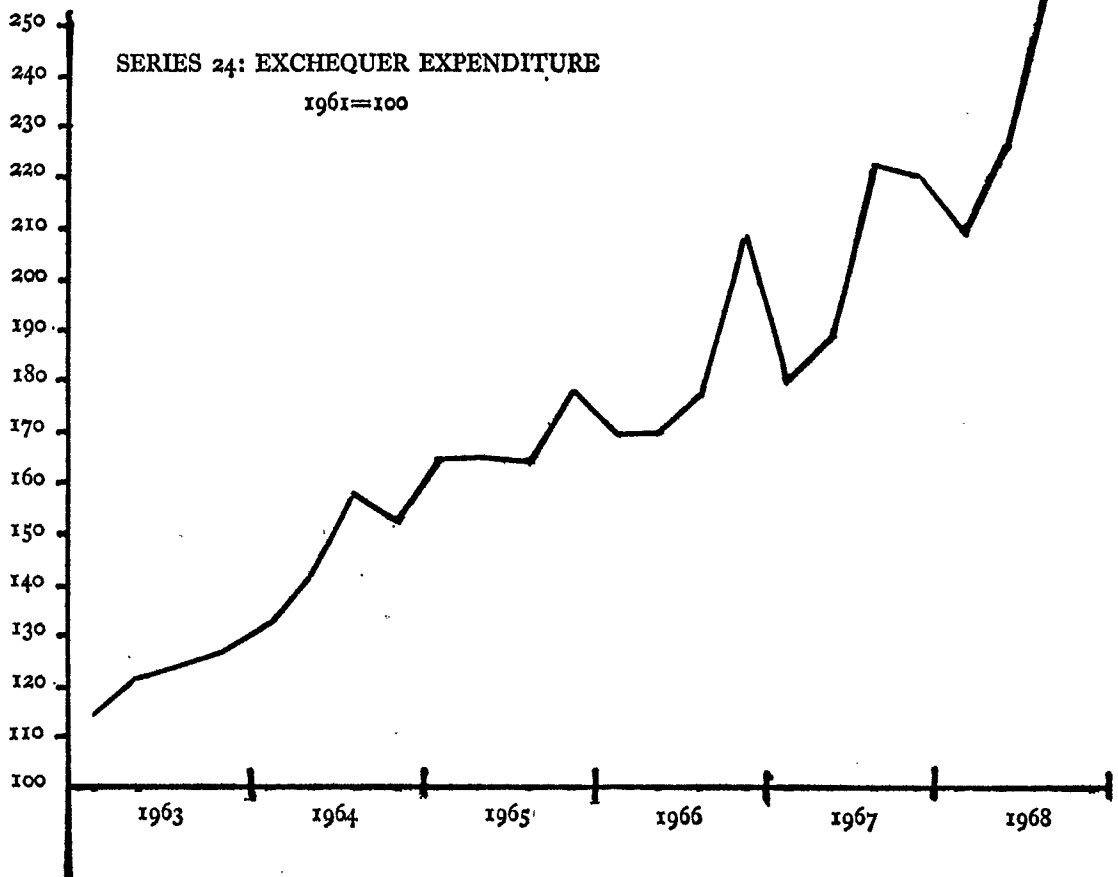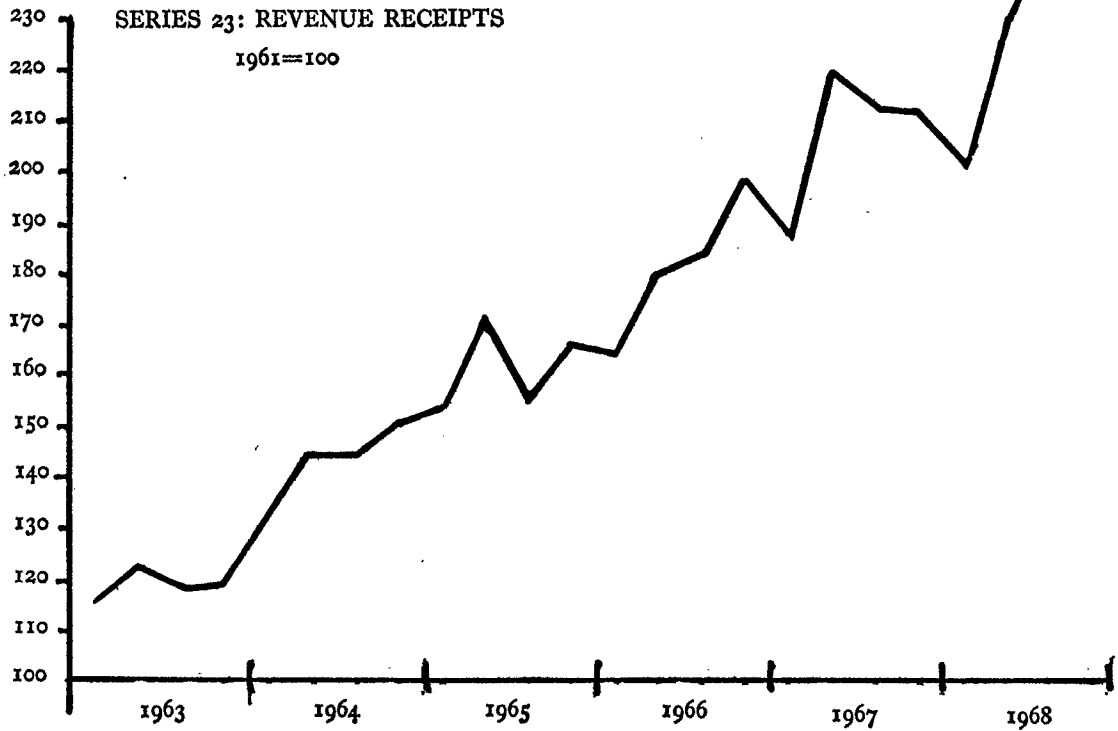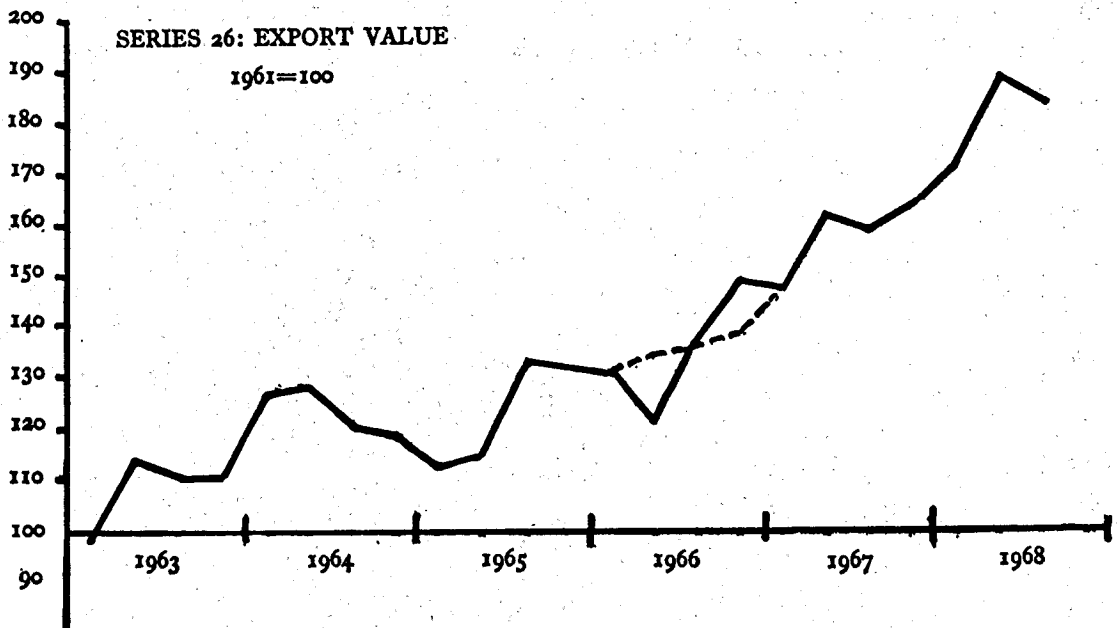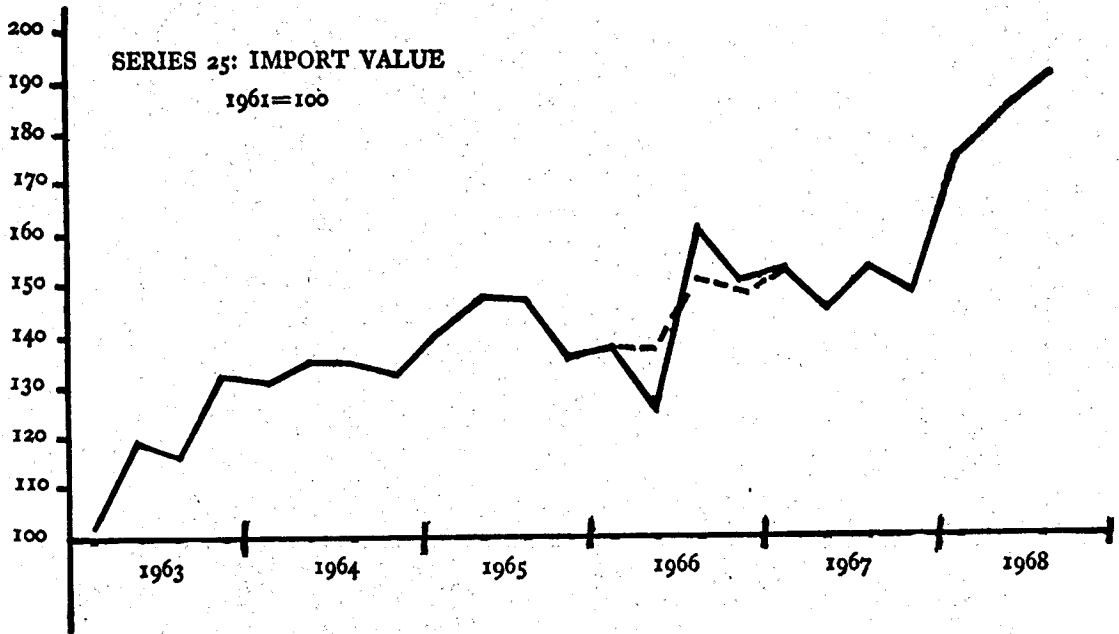
SERIES 27: IMPORT EXCESS VALUE
1961=100

SERIES 28: IMPORT VOLUME
1961=100

SERIES 29: EXPORT VOLUME
1961=100

SERIES 30: MONEY SUPPLY

1961=100

180
170
160
150
140
130
120
110
100

1963   1964   1965   1966   1967   1968

SERIES 31: BANK DEBITS—NON-GOVERNMENT

1961=100

250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100

1963   1964   1965   1966   1967   1968

SERIES 32: BILLS, LOANS, ADVANCES, WITHIN STATE
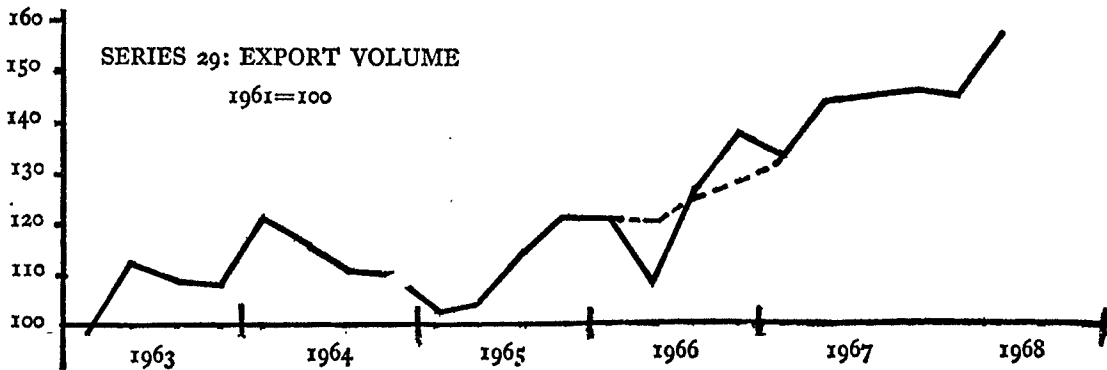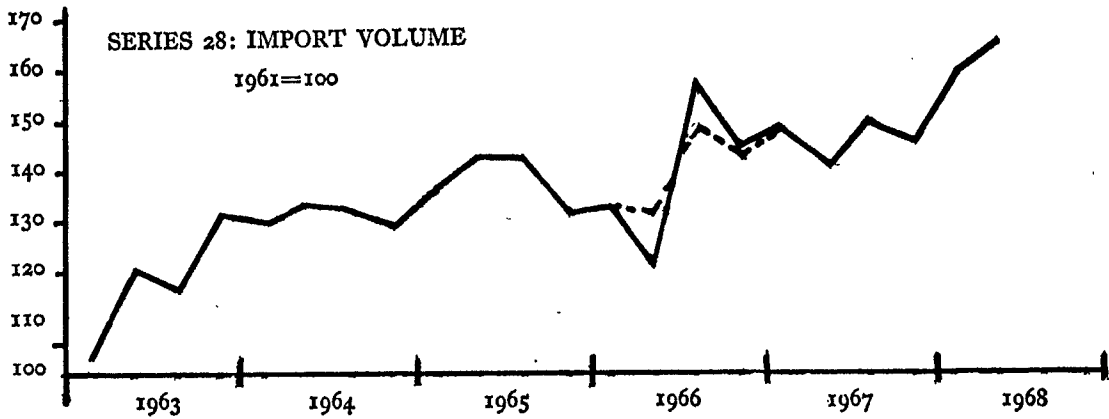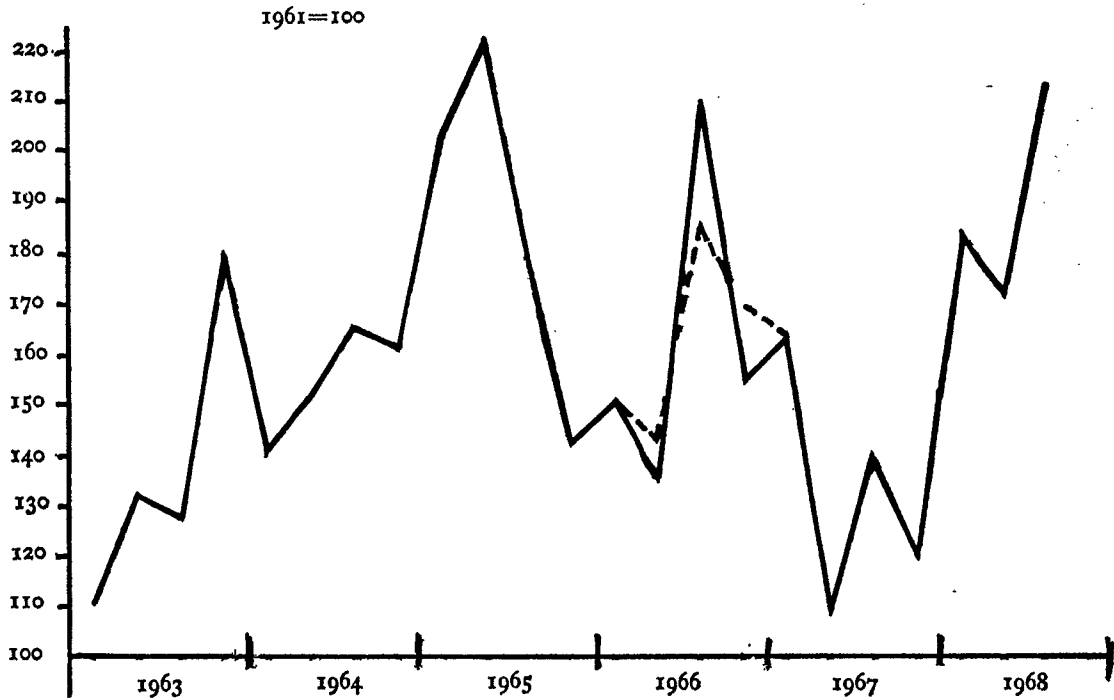
1961=100

BANKING, FINANCE
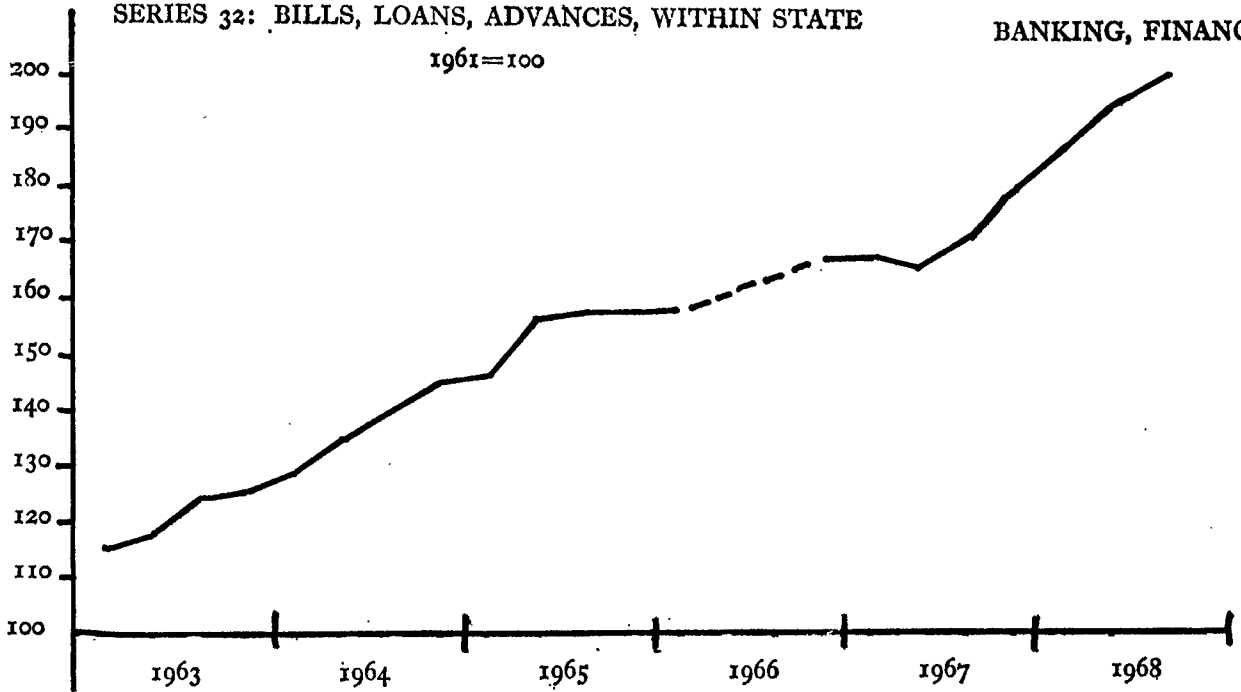
SERIES 34: EXTERNAL ASSETS, BANKING SYSTEM AND DEPARTMENTAL FUNDS

1961=100
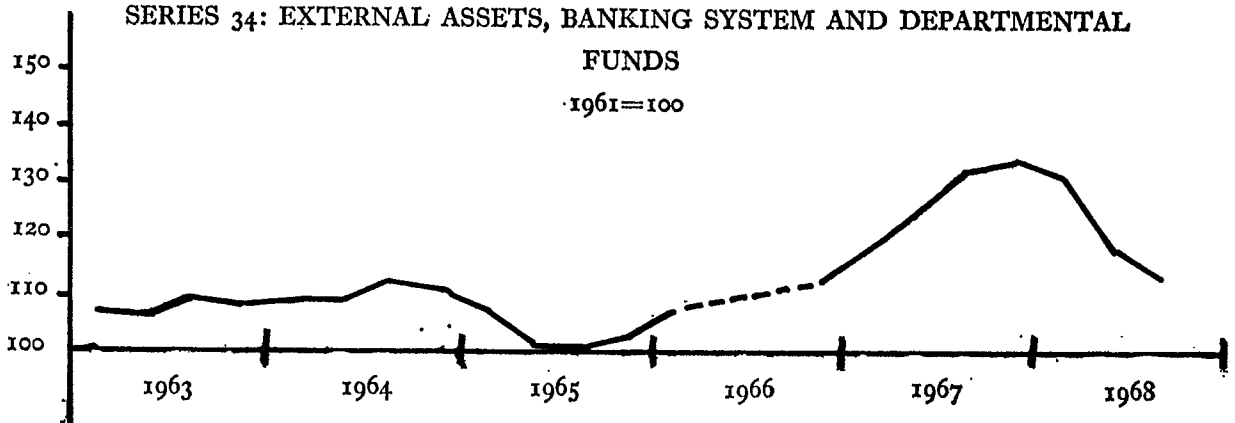
SERIES 35: EXTERNAL MONETARY RESERVES

1961=100
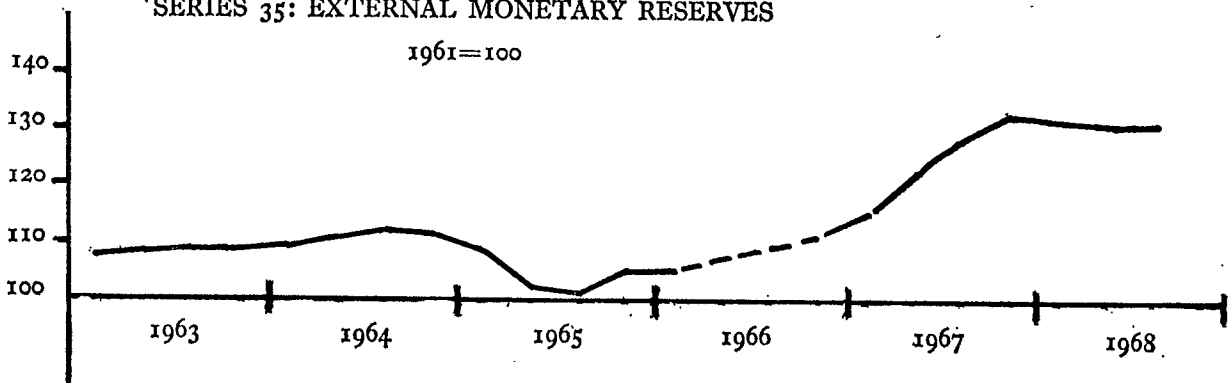
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