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by

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SUMMARY

It is probable that there was little change in real GNP in 1983. It is impossible to be certain, because revisions currently being made to balance of payments estimates for 1983 and earlier years could seriously affect estimates of national income and expenditure. However, it is clear that there was a major turn-around in the economy during 1983, with considerable growth in the second half of the year. While buoyant exports were the prime stimulus to the economy, there was also a significant recovery in private consumption in the later months of the year. Manufacturing output grew by over 7 per cent, and even if the booming new electronics industry is excluded, the rest of manufacturing saw an increase of 2½ per cent in production, after 3 years of decline. As industrial employment fell for most of the year, the increases in output per head were dramatic — over 14 per cent for manufacturing as a whole and about 10 per cent when electronics are omitted.

The economic prospects for 1984 are generally favourable. Against the background of a world recovery which is becoming more widely based, exports should continue to grow very rapidly, aided by the improvements in productivity achieved in 1983. Private consumption is expected to continue its more sedate increase, supported by a marginal increase in real disposable incomes and a significant fall in the personal savings ratio. Despite further reductions in the volume of public current expenditure and fixed capital investment, economic activity will expand, with the growth in real GNP likely to be between 2½ and 3 per cent. Manufacturing output seems set to rise by at least another 7 per cent, and as major increases in productivity seldom occur in successive years, there is likely to be a reasonable increase in manufacturing employment during 1984. However, even allied to continuing expansion in private service employment, this is unlikely to prevent some further growth in the level of unemployment.

The principal danger facing the economy is that the present favourable conjunction of circumstances might be dissipated by excessive pay settlements, perhaps accompanied by major industrial disputes. Especially in the public service there appears to be a tendency to regard the levels of real earnings obtained at the begining of the decade as a norm towards which a rapid return should be sought. A general recognition that such standards were a temporary phenomenon, made possible only by an unsustainable level of external borrowing, would be a major contribution to the economic health of the country in 1984 and future years. Realism dictates that moderate pay increases in the competitive sector, allied to severe restraint of public sector pay, offers the best prospect for employment and progress in the rest of decade.

FORECAST NATIONAL ACCOUNTS 1984

A: Expenditure on Gross National Product

	1983	1984	Change in 1984 £m		Change in 1984 %		
	Baseline* Estimate £m	Forecast £m	Total	Volume	Total	Price	Volume
Private Consumer Expenditure ...	8010	8930	920	240	11½	8¼	3
Public Net Current Expenditure ...	2975	3210	235	−38	8	9¼	−1¼
Gross Domestic Fixed Capital Formation	3117	3272	155	−54	5	6¾	−1¾
Exports of Goods and Services (X) ...	7683	9427	1744	1000	22¾	8½	13
Physical Changes in Stocks	111	160	49	44			
Final Demand	21896	24999	3103	1192	14¼	8¼	5½
less:							
Imports of Goods and Services (M) ...	7956	9482	1526	736	19¼	9¼	9¼
GDP at market prices	13940	15517	1577	456	11¼	7¾	3¼
less:							
Net Factor Payments (F)	920	1115	195	101	21¼	9¼	11
GNP at market prices	13020	14402	1382	355	10½	7½	2¾

B: Gross National Product by Origin

	1983	1984		
	Baseline* Estimate £m	Forecast £m	Change in 1984 £m	Change in 1984 %
Agriculture, Forestry, Fishing ...	1185	1230	45	4
Non-Agricultural: Wages etc. ...	7880	8580	700	8¾
Other	1714	2084	370	21½
less:				
Net Factor Payments	920	1115	195	21¼
National Income	9859	10779	920	9¼
Depreciation	1311	1495	184	14
GNP at factor cost	11170	12274	1104	10
Taxes less subsidies	1850	2128	278	15
GNP at market prices	13020	14402	1382	10½

C: Balance of Payments on Current Account

	1983	1984	
	Baseline* Estimate £m	Forecast £m	Change in 1984 £m
X−M	−273	−55	+218
F	−920	−1115	−195
Net Transfers	600	670	+70
Balance on Current Account ...	−593	−500	+93

*See text of introduction.

COMMENTARY

Introduction

There is a temporary but difficult problem in presenting estimated National Accounts for 1983 or forecasts for 1984. Major revisions to the official figures for recent years are being undertaken, resulting chiefly from a re-appraisal of balance of payments flows. It is not known when these revisions are due to be published, nor the size of the main changes, beyond the probability that they will be large. To ignore this process of revision and to base estimates and forecasts on the existing published data is to risk some distortion of the actual condition of the economy, while to attempt to guess the extent of the changes carries an obvious danger of error.

In these circumstances, we have decided that there is little point in presenting a detailed estimate of 1983 in a National Accounts framework. The main developments in 1983 can be discussed qualitatively and illustrated with statistics for particular sectors. However, in preparing a forecast for 1984 it is valuable to preserve a National Accounts framework, if only to ensure that the different parts of the forecast are compatible.

Accordingly, to provide a base for the 1984 forecast we present a baseline position for 1983, which incorporates amendments both to 1983 itself and to earlier years. No doubt when the official revisions become available our baseline estimate will prove to have been inaccurate, but we believe it to be less misleading than estimates based on the existing official accounts. The basic changes in relation to the estimated 1983 National Accounts which we published in our January *Commentary*, are substantial increases in the level of net factor outflows and corporate profits. These represent the expectation that the official revisions will show that profits, especially in the new industries, are higher than had previously been estimated and also that a considerably higher proportion of these profits has been expatriated. As imports of services have also been revised upwards, the most obvious effect of the changes has been to raise the estimated level of the balance of payments deficit substantially.

The International Economy

Evidence continues to accumulate that the international economic recovery is more firmly based and more widespread than was at first thought. In consequence, forecasts for economic output in 1984 in several countries have been revised upwards. The most significant such revision concerns West Germany where the growth rate is now expected to approach 3 per cent rather than the 2 per cent previously forecast. Increased export prospects, especially

to the USA, have boosted business confidence and led to stronger investment intentions. Faster German growth in turn improves the outlook for other European economies. However, West European growth as a whole is forecast at only 2 per cent, which, while a considerable improvement on recent years, is still well below the rate expected in North America and Japan.

In the USA itself, the upswing continues strongly. While the deficits in the budget and in the balance of payments remain profoundly worrying in the longer term, they do not appear to be adversely affecting current economic sentiment. The increase in the prime US lending rate in three steps from 11 to 12½ per cent, while somewhat sharper and earlier than expected, likewise does not appear to have damaged confidence, and has rather been interpreted as a necessary precautionary response to the rapid first quarter growth in GNP.

Price inflation in the US is expected to increase, partly reflecting the months in which the value of the dollar was below its January peak and partly in response to the normal pressures felt at the stage of the economic cycle reached in the USA. Europe, at a much earlier stage of recovery, is expected to show further falls in inflation rates.

Despite these different expectations, and allowing both for its retreat from its January levels and for its subsequent recovery, as interest rates have risen, fears that the US dollar might suffer a severe fall during 1984 have somewhat receded.

TABLE 1: Short-term International Outlook

	GNP/GDP % Change		Consumer Prices % Change		Hourly Earnings % Change		Unemployment Rate		Budget Deficit as % of GNP/GDP		Current Account Balance as % of GNP/GDP	
Country	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
United States	3½	5	3¾	5	4	5½	9½	7¾	4	3½	−1¼	−2¼
Canada	3	5	5¾	5	6	5¼	12	11	5¾	5	½	¼
Japan	3	4¼	1½	1½	4¼	4½	2¾	2¾	3½	2½	1¾	2¼
West Germany	1¼	2¾	3	3	3¼	3½	8¾	8½	2¾	1¾	¾	¾
France	½	½	9¼	7¼	11	8	8¼	9¼	3¼	3¼	−¾	¼
UK	3	2¾	5½	5½	7½	6½	11½	11¼	2¾	2¼	¾	¼
Italy	−1½	1¾	14¾	11	14½	11	10	10½	12	12½	½	¼
Belgium	0	1	7¾	6½	4	6½	14¾	15	12¼	11	−1¼	−¼
Denmark	2	2¼	6¾	5¾	8½	5½	10¾	11¼	8¼	7½	−2¾	−2¾
Netherlands	1	1¾	2¾	3¼	3¾	1	13¾	16	8	7¾	3¼	4¾
Sweden	2	2¼	10½	6½	9	8	3½	3½	6¼	5	−1	−¼
Total (OECD)	2¼	3¾	5	5	6	5¾	9	8¾	4½	3¾	−¼	−½
Ireland	0	2¾	10½	8¼	11½*	10	14½	16	8¼**	7½**	−4½	−3½

Sources: NIESR *National Institute Economic Review* February 1984, London Business School Centre for Economic Forecasting *Economic Outlook* February 1984, OECD *Economic Outlook* December 1983.

*Provisional.

**Not comparable with OECD estimates for other countries, which are based on a wider definition.

It seems as if the market may be prepared to defer any major adjustments until the economic policy implications of the Presidential election become clearer. Even if a shift in asset preferences does lead to a fall in the value of the dollar, the shift is likely to be in favour of DM and Yen assets, with a consequent upward pressure on those currencies. Under all these circum-

stances, approximate stability in the trade weighted index of the Irish pound, for the year as a whole, is a reasonable working assumption.

In many previous cycles a sharp rise in commodity prices was experienced at about the stage of recovery now reached. In 1984 a major rise is not expected, although a few commodities might show significant price increases. For most others, large stocks and increases in output seem likely to preclude more than a modest rise. In the absence of serious political shocks, oil prices are expected to remain approximately stable throughout the year.

The main implications for Ireland of the current international context are that export markets should remain buoyant throughout 1984 and well into 1985, while external inflationary pressures are likely to be somewhat milder than in 1983, when the rise in the dollar was an important factor in raising domestic price levels. There seems little prospect of a fall in international interest rates, which will remain strongly positive in real terms. The scale of world economic recovery, although revised upwards, still appears insufficient to generate large volumes of internationally mobile industrial investment which could be attracted to Irish locations.

The Domestic Economy — General

For the reasons outlined in the Introduction to this *Commentary* we have not presented an estimate of the growth rate in 1983. The best guess is that while Gross Domestic Product probably rose by about 1 per cent, the increase in net factor outflows was such as to ensure that there was stagnation or even a slight decline in Gross National Product at constant prices.

However, it remains true, as shown in previous *Commentaries,* that 1983 marked a turning point in the economy, with the preconditions being set for a modest export-led recovery in 1984. Exports are likely to grow strongly, and the key questions are how far this is likely to stimulate the rest of the economy, and to what extent the inescapable need to control the public finances will impede the process of recovery.

Exports

With a very strong performance in December, the level of merchandise exports in 1983 was even higher than estimates made in early January assumed. Moreover, while the electronics industry was the outstanding source of increased exports in 1983 it was by no means the only sector experiencing a rising volume of exports. This pattern of rapid and broadly-based export growth has continued into the first quarter of 1984. Exports in March were exceptionally high, leaving the first quarter total almost 39 per cent above their value a year earlier. Such a high rate of growth is unlikely to be maintained, but there is every reason to expect that exports will remain strong throughout the year. World trade is expanding, with Continental Europe now showing an economic recovery. Irish competitiveness, when account is taken of currency movements and increases in productivity, is likely to remain favourable unless there is an unexpected explosion in industrial wage rates. Capacity production in some new industries has not yet been reached, so supplies of potential exports are due to increase.

TABLE 2: Exports of Goods and Services

	1982	% Change		1983	% Change		1984
	£m	Volume	Value	£m	Volume	Value	£m
Agricultural	1328	4½	10¼	1465	5	7¾	1580
Manufactured	3486	13½	24¼	4335	18	29½	5619
Other Industrial	811	21¾	31¼	1065	13	24¾	1328
Other	67	−4¾	4½	70	0	8½	76
Total	5692	12¼	21¾	6935	14¼	24	8603
Adjustments	−101			−120			−150
Merchandise Exports	5591	12½	22	6815	14¼	24	8453
Tourism*	487	½	11	541	4	12½	609
Other Current Receipts	295	¼	10¾	327	3	11½	365
Exports of Goods and Services	6373	11	20½	7683	13	22¾	9427

*Including Passenger Carrier Receipts.

As Table 2 shows, the largest rise in 1984, as in 1983, is expected in manufactured exports, which of course include the fast growing electronics sector. However, substantial increases are also expected in other industrial exports, which include the output of Alcan for a full year, and in agricultural exports, where it is expected that a slower rise in intervention stock levels will be reflected in a higher proportion of agricultural output being exported.

Invisible exports are expected to rise quite sharply in 1984, in contrast to a modest performance in 1983. Tourism in particular is expected to benefit from the improvement in the world economy, aided by the high value of the dollar, as well as by the lifting of French travel restrictions.

Investment

Some uncertainty still surrounds the level of fixed capital formation in 1983. The index of private sector building employment suggests a catastrophic fall in building and construction activity, while cement sales, which were down by 7 per cent compared with 1982 indicate a more modest fall. Taking into account the decline in public capital expenditure, together with the trend of house completions, the best estimate of building activity is of a volume fall of 8 per cent, as shown in Table 3. Similarly, the recovery in capital goods imports in the second half of the year was higher than expected, as investment intentions throughout the year appeared weak, and despite the increase in industrial output, capacity utilisation remained low.

For 1984, the further reductions in the volume of the public capital programme will be a major depressing factor, while only a modest improvement in private housebuilding is expected. Investment in plant and machinery, however, may increase under the stimuli of higher industrial output and a perceptible narrowing of the margin of spare capacity.

TABLE 3: Gross Fixed Capital Formation

	1982	% Change		1983	% Change		1984
	£m	Volume	Value	£m	Volume	Value	£m
Building and Construction	1724	−8	−2½	1680	−4	+3	1729
Machinery and Equipment	1453	−7	−1	1437	+1	+7½	1543
Total	3177	−7½	−2	3117	−1¾	+5	3272

Stocks

There was little change in 1983 in the number of livestock on farms, with a small rise in sheep numbers being offset by declines in cattle and pigs. In 1984, a rather larger fall in cattle stocks is anticipated. A further increase in sheep numbers is unlikely to compensate for the decline in cattle.

Intervention stocks rose massively in 1983 as the European surplus problems intensified. Attempts to predict movements of intervention stocks are notoriously fallible, but at present it looks probable that there will be a considerably smaller rise in the volume of intervention stocks in 1984.

From the pattern of imports in relation to output and consumption it would appear that the second half of 1983 saw a fairly emphatic reversal of the de-stocking of non-agricultural goods which has been a feature of 1982 and early 1983. A continuation of stock building can be expected in 1984 as economic recovery progresses, although the high level of real interest rates may limit the extent of the rise. Table 4 summarises expectations regarding physical stock changes.

TABLE 4: Stock Changes

	1982	Change in Rate	1983	Change in Rate	1984
	£m	£m	£m	£m	£m
Livestock on Farms	+13	−13	0	−25	−25
Irish Intervention Stocks	+116	+45	+161	−26	+135
Other Non-ag. Stocks	−135	+85	−50	+100	+50
Total	−6	+117	+111	+49	+160

Current Public Expenditure

On the basis of the Book of Estimates as amended by the Budget Statement, central government expenditure is scheduled to rise by about 11½ per cent in value, implying a small rise in volume. Assuming that local government spending changes at about the same rate as exchequer payments to local authorities, this indicates that net public expenditure on current goods and services is officially projected to rise by about 8 per cent at current, and to fall by 1¼ per cent at constant prices.

At present there seems no need to diverge from these official projections of expenditure. However, it must be remembered that they are based on the assumption that there will be no new pay increases in the public service during 1984. It may be, in fact, that there is room in the estimates for a small pay rise very late in the year. What is without doubt is that there is no room for the very large increases which the public sector unions say they are seeking from the middle of the year. Were these claims to be conceded, or even a "soft" compromise reached, the value of public net current expenditure would rise by very much more than is being forecast, while the volume might fall more rapidly due to an accelerated run-down in the number employed.

Private Consumption

There was a fairly substantial recovery in consumer expenditure in the second half of 1983. While this was not sufficient to prevent the volume of

retail sales from falling by 3.8 per cent in 1983 compared with 1982, it did ensure that the fourth quarter level was some 2 per cent above the annual average. Thus, even if that level were held throughout 1984 there would be a useful annual increase in the volume of consumption. However, a rise is expected in the course of the year, with employment rising above its winter levels, earnings in the private sector at least keeping pace with price inflation during the year, and a continuation of the fall in the savings ratio which would appear to have been the main explanation of the upturn in sales during the autumn of 1983. Thus, an increase in consumption of about 3 per cent at constant prices seems a reasonable expectation, with the volume of retail sales rising slightly faster. When likely price increases are taken into account private consumption could rise by about 11½ per cent in value terms.

Agricultural Output

With the relatively favourable short-term resolution of the super-levy issue, the danger of immediate disruption of dairy farming has been averted. Whether the negotiated levy-free increase of 4.6 per cent in milk output is actually achieved depends on several unpredictable factors, including weather conditions. In as decentralised an industry as agriculture it would be remarkable if this optimum increase of output could be exactly realised, and from the point of view of negotiations for future years, it would seem preferable that the target should be slightly exceeded, even at the cost of the super-levy taking marginal effect in some cases.

Apart from the super-levy the impact of other complex price and payment charges is difficult to assess, as is the effect on European beef and dairy product markets of the run-down in the dairy herds of those countries to which the full rigour of the super-levy will apply. In these conditions of uncertainty, the most reasonable estimate is that there will be a moderate rise in the volume of both gross and net output, that there will be a small increase in effective output prices, and that a considerably faster rise in input prices will be only partly offset by reduced growth in the volume of inputs, especially feed. With other expenses also likely to rise faster than output prices, income arising in agriculture could increase by something in the order of 4 per cent, compared with an increase of over 12 per cent in 1983.

Industrial Output

In most analyses of 1983, including those in previous *Commentaries*, the importance of increased industrial output has perhaps been insufficiently stressed. After remaining virtually static from 1979 to 1982, the volume of manufacturing output rose by 7 per cent in 1983. While much of this growth was concentrated in the electronics industry, which increased its output by over 50 per cent, it is equally significant that the remainder of manufacturing industry reversed the steady decline it had shown since 1979. Although still 3½ per cent below its 1979 peak, manufacturing, excluding electronics, grew by almost 2½ per cent in 1983. This growth was concentrated in the other "new" industries within the chemical and instrument engineering sectors. If these sectors are excluded, there was a fall of just over 1½ per cent in the volume of production of the remaining "traditional" areas of manufacturing industry.

Even here, however, some sectors showed an annual increase, while there also appears to have been a slight but widespread recovery in the later months of the year.

TABLE 5: Manufacturing Production and Output per Head

Indices 1979 = 100

	Manufacturing Production				Output per head			
	Total	% Change	Excl. Electronics	% Change	Total	% Change	Excl. Electronics	% Change
1978	93.1		94.1		97.2		98.1	
1979	100	+7.4	100	+6.3	100	+2.9	100	+1.9
1980	99.1	−0.9	97.0	−3.0	99.9	−0.1	98.3	−1.7
1981	101.3	+2.2	96.3	−0.7	105.7	+5.8	101.5	+3.2
1982	100.3	−1.0	94.3	−2.1	108.4	+2.5	103.2	+1.7
1983	107.4	+7.1	96.5	+2.4	123.9	+14.4	113.6	+10.1

Sources: CSO, Monthly Production Index
Industrial Employment, Earnings and Hours Worked.

Given the sluggish state of the domestic economy for most of the year, the main demand stimulus for increased production clearly came from exports. As well as the greater buoyancy in overseas markets there would seem to have been a perceptible improvement in overall Irish competitiveness. Currency movements in 1983 were obviously an important factor in this, while the generally modest level of most pay settlements during the year prevented too much of the currency gain from being eroded. Very significant in keeping down relative costs is the fact that the increase in production was associated with a very sharp rise in manufacturing productivity, as measured by output per head.

For manufacturing industry as a whole, output per head rose by a remarkable 14.4 per cent in 1983. As in the case of output itself, the growth of the electronics industry was a major contributor to this increase. On the other hand, heavy falls in employment enabled all industrial groups, whether their output had increased or decreased over the period, to record substantial increases in output per head. As Table 5 shows, output per head excluding electronics rose by over 10 per cent, while even if chemicals and instrument engineering are also excluded, the increase remains at almost 7 per cent.

Historically, a 7 per cent rise in output per head is exceptionally high, especially when the main industrial growth sectors have been removed from the calculation. It is not altogether unprecedented at this particular stage of the economic cycle when output begins to recover as employment continues to fall. In the past, large rises in productivity have always proved short-lived, as employment has tended to follow the upturn in output after a lag of about a year. On this occasion also, it seems unlikely that such a large rise in output per head will prove sustainable. It seems more probable that either the rate of growth of output will slow, with employment remaining static, or that a continued growth of output will be associated with a substantial increase in manufacturing employment.

Given the general prospects for 1984, especially the anticipated buoyancy of exports and the modest recovery expected in consumer spending, the more optimistic of these interpretations seems also the more reasonable. A further rise of 7 or 8 per cent in manufacturing output, especially if it includes some

recovery in the more traditional industries, could lead to an increase of several thousand in the level of employment in manufacturing industry in the course of 1984. A minor contributing factor to such a development could be a significant increase in the throughput of meat factories in the Republic now that changes in MCAs and the variable premium appear to have removed the competitive advantage enjoyed by Northern Irish meat plants in the past few years.

Employment and Unemployment

Despite the improved outlook for manufacturing employment there seems little likelihood of a large rise in total employment. The marginal fall in the seasonally corrected level of the Live Register in March is likely to prove only a temporary interruption to a gradual rise in unemployment as job creation fails to keep pace with the growth of the labour force.

The principal depressant on total employment will be the continued run-down in the number of public service employees, while employment in building and construction seems set to decline further. Some increase can be expected in private service employment, as in most recent years, but no major acceleration in the provision of service jobs is foreseen.

Table 6 shows the forecast annual average levels of employment by broad sectors, together with forecasts of unemployment and the labour force. It needs to be stressed that a large part of the fall in employment between the 1983 and 1984 averages has already taken place in the course of 1983, and that the table implies a small rise in total employment between January and December 1984. Similarly, a considerable slowing down of the growth of the Live Register is anticipated, with the end-year level standing at just over 220,000 seasonally adjusted, or perhaps 225,000 unadjusted.

TABLE 6: Employment and Unemployment

A: Mid-April Estimates '000				
	1982	1983	1984	1985
Agriculture	196	191	186	182
Industry	353	325	311	315
Services	598	604	608	612
Total at work	1146	1120	1105	1109
Unemployed	137	180	208	218
Labour Force	1283	1300	1313	1327
Unemployment Rate %	10.7	13.8	15.8	16.4
Live Register	148	188	214	223

B: Annual Averages '000			
	1982	1983	1984
Agriculture	194	189	184
Industry	343	319	312
Services	600	605	609
Total at work	1137	1113	1105
Unemployed	153	190	213
Labour Force	1290	1303	1318
Unemployment Rate %	11.9	14.6	16.2
Live Register	157	193	216

Incomes

As already discussed, income arising in agriculture is expected to show only a moderate growth of about 4 per cent in 1984. Inevitably, this expectation could be confounded by the weather, with the out-turn being either better or worse according to conditions.

Even greater uncertainty surrounds some elements of non-agricultural incomes. With regard to private sector wages and salaries, it can be expected with some confidence that the state of the labour market will keep average settlements at moderate levels. A fairly wide divergence is expected between industries and between firms, and it seems probable that the eventual average will be substantially below the few early settlements which have received recent publicity. On the other hand, it does not seem at all likely that the majority of private settlements will incorporate the lengthy pay pause included in the government guidelines. The implications of this will be discussed later in the *Commentary*.

For the purpose of drawing up a forecast for 1984 it is assumed that average private sector earnings will be about 10 per cent higher in 1984 than in 1983. Given a carryover into 1984 of almost 6 per cent from 23rd round increases, this assumption implies an effective increase in the course of 1984 of about 4 per cent under the 24th round. This would be compatible with a single phase average of 8 per cent dating from the middle of the year, or a larger total increase paid in two or more phases.

There is a very large gap between the claims currently being discussed by the public service unions and the government's stated intention that there should be no 24th round increase during 1984 in the public sector. While it seems possible that some compromise might be reached towards the end of the year, the working assumption for the commentator at the present time must be that the outcome will be fairly close to the government's position. As set out in the Budget this envisages average earnings rising by almost 10 per cent, under the influence of the carryover from the 23rd round, the later phases of previous special agreements, and general salary scale drift. Such are the uncertainties of pay projections, however, that it might be possible that the official budget could accommodate some modest increases in the last month or two of the year.

When employment movements are taken into account, with a likely fall compared with 1983 of just over ¼ per cent in private non-agricultural employment and of about 1¼ per cent in public sector, then total non-agricultural wages, salaries and pensions are forecast to rise by 8¾ per cent in 1984.

A rather larger increase is forecast in other private incomes, as economic recovery boosts earnings from self-employment and from property. As in 1983, transfer incomes are likely to rise sharply, largely because of the projected 12 per cent increase in the number on the Live Register. With other classes of social welfare recipients also growing in numbers, a considerable carryover from benefit rate increases in 1983 and a steady rise in private transfers, total transfer incomes are forecast to rise by over 14 per cent. This is almost as fast a rate of increase as in 1983, in spite of the lower rise in actual benefit rates scheduled for 1984 itself.

As Table 7 shows, the effect of these various projections is a forecast increase of 9¾ per cent in gross personal income, marginally below the 10 per cent estimated to have been received in 1983. However, with the expected reduction in the rate of price inflation, the real increase is forecast at about 1½ per cent in 1984 compared with a fall of ½ per cent in 1983.

TABLE 7: Personal Disposable Income

	1982	Change		1983	Change		1984
	£m	%	£m	£m	%	£m	£m
Agriculture etc.	1,057	12	128	1,185	4	45	1,230
Non-Agricultural Wages and Salaries	7,270	8½	610	7,880	8¾	700	8,580
Other Non-Agricultural Income	1,393	9	125	1,518	12	182	1,700
Total Income Received	9,720	8¾	863	10,583	8¾	927	11,510
Current Transfers	2,263	14½	327	2,590	14¼	370	2,960
Gross Personal Income	11,983	10	1,190	13,173	9¾	1,297	14,470
Direct Personal Taxes	2,275	17½	396	2,671	14¼	379	3,050
Personal Disposable Income	9,708	8¼	794	10,502	8¾	918	11,420
Consumption	7,490	7	520	8,010	11½	920	8,930
Personal Savings	2,218	12½	274	2,492	—	−2	2,490
Savings Ratio	22.8%			23.7%			21.8%

When the lower rate of increase in direct personal taxation is taken into account, the contrast between the two years in personal disposable income is even more striking. In 1983 there was a fall in real terms of over 2 per cent, while for 1984 a small increase of about ½ per cent is forecast. Most commentators are now agreed that a significant fall in the personal savings ratio can be expected in 1984, in line with developments in other countries, and with the normal pattern at this stage of the economic cycle. The quarterly pattern of savings in the various media favoured by individual savers lends further credence to this expectation, so that it is quite reasonable to forecast that consumption could increase by 3 per cent in real terms despite the very small rise in disposable income. Such a projection would still leave the personal savings ratio of 21.8 per cent, which is fairly high by historical standards, although 2 per cent below the estimated ratio in 1983.

Public Finance

On the assumptions implicit in this forecast, it seems probable that the total current budget deficit will be fairly close to the level predicted in the Budget. The composition of tax revenue could diverge from the official projections, with income tax receipts rather lower, and expenditure tax receipts rather higher than predicted. Despite the shortfall in the early months of the year, it seems likely that VAT revenue in particular will move above the projected level as consumption expenditure increases. Total revenue should therefore at least equal, and may slightly exceed, the budgeted level. On the assumption that public current expenditure will be held close to the official estimates, the current deficit thus should be close to, or perhaps slightly below, the projected figure of £1,040 million. Public borrowing requirements are also assumed to lie close to official forecasts, although given the anticipated decline in the personal savings ratio the composition of borrowing may differ from 1983.

Consumer Prices

Among the more disappointing aspects of economic performance in 1983 was the failure of consumer prices to sustain the improvement shown in the first half of the year. Among the factors causing the setback were the marked rise in the value of the dollar, and a substantial increase in potato prices following a poor harvest throughout Europe.

There are grounds for expecting a reversal of the 1983 pattern in 1984, with a relatively modest first half improvement being followed by significant reductions in the second half of the year. The dollar peaked in January, contributing to the rise in the consumer price index in February. Since then there has been a period when it was around 5 per cent below its peak level, followed by a sharp recovery. Continual fluctuations appear inevitable, but it still seems likely that for most of the year the dollar will exchange at below its January value. Potato prices will still have a significant upward impact on the index in May, but, if there is a return to normality with the new season's crop, these could be a favourable influence in August and November. At this stage of the economic cycle, rising productivity should keep unit costs of production from increasing significantly, unless there is an unexpected pay explosion in the private sector, so that the recovery in itself should not generate strong inflationary pressures in 1984. Finally, the increase in indirect tax rates is considerably lower than in 1983, thus softening yet another pressure on consumer prices.

In the light of these factors a reduction in consumer price inflation to 7 per cent or less in the second half of 1984 is forecast, leaving the increase in the annual average of the consumer price index at about 8¼ per cent.

Imports of Goods and Services

The last five months of 1983 saw a considerable recovery in merchandise imports from the very depressed levels of the previous 15 months. This reflected the marked increase in industrial production, the modest recovery in consumer spending, a reversal of the de-stocking which was a marked feature of the first half of the year, and some upturn in investment in plant and equipment.

All these factors are likely to hold through 1984, so that a very substantial increase in imports can be expected. A rise of about 9¾ per cent in the volume of merchandise imports would be compatible with the forecast increase of 5½ per cent in the volume of final demand. With import price increases expected to be in the neighbourhood of 9¼ per cent, largely reflecting price movements in the course of 1983, this would leave the value of merchandise imports rising by about 20 per cent for the year as a whole. First quarter imports fit fairly closely to this expected pattern for, although they were 27 per cent up on the corresponding period of 1983, it must be remembered that imports were particularly depressed at that time.

Predicting imports of services is particularly hazardous at present, as this is one of the areas under review by the CSO in connection with revising the balance of payments data. The figures presented tentatively in Table 8 assume upward revisions to both tourism and other services compared with earlier estimates for 1983. In the former case it is believed that insufficient allowance

TABLE 8: Imports of Goods and Services

	1982	% Change		1983	% Change		1984
	£m	Volume	Value	£m	Volume	Value	£m
Capital Goods	944	−6	−¾	937	1	8½	1,017
Consumer Goods	1,787	−½	4¾	1,873	5	14½	2,145
Intermediate Goods:							
Agriculture	328	6½	15½	379	−1	9	413
Other	3,744	5¼	11	4,155	15	26	5,235
Other	13	−13	−7¾	12	0	8¼	13
Total Goods	6,816	2	8	7,356	9¾	20	8,823
Adjustments	−130			−137			−163
Merchandise Imports	6,686	2	8	7,219	9¾	20	8,660
Tourism[1]	410	10	21	496	2¼	11	550
Other Services[2]	214	6	12½	241	6	12¾	272
Imports of Goods and Services	7,310	2½	8¾	7,956	9¼	19¼	9,482

[1]Including allowances in all years for increased cross-border shopping.
[2]Including allowance for licence payments.

was made in previous forecasts for the upsurge in private cross-border shopping, while in the latter, some allowance has been made for an increase in licence payments abroad by high technology industries.

Although the 1983 base must be regarded as precarious, more confidence can probably be placed on the projections for 1984. The rate of increase of cross-border trade can be expected to decline sharply, and there may well be an actual volume decline in such transactions, as the indirect tax differentials between the Republic and Northern Ireland have been either held constant or reduced. On the other hand, genuine tourist expenditure abroad is likely to increase in line with the general rise in consumer spending. A further substantial increase in other service imports is assumed, in line with the growth in industrial output.

Balance of Payments

On the basis of the forecasts presented for exports and imports there should be a modest improvement in the trade balance in 1984. The deficit on visible trade is projected to fall by £197 million to £207 million, while the surplus on traded services is projected to rise £21 million to £152 million. Most of this improvement in the trade balance seems likely to be offset by a further rise in net factor payments, as interest on foreign borrowing and expatriation of industrial profits continue to increase. There should, however, also be some improvement in the inflow of transfer payments, especially from the EEC, so that a moderate reduction in the total current balance of payments deficit seems probable.

Given the difficulties outlined at the beginning of the *Commentary*, little confidence can be placed in our estimates of the level of the deficit, as distinct from the direction of likely movements in it. For the sake of completing our forecast, we assumed a 1983 deficit of just under £600 million, and our projections for 1984 suggest that this could be reduced to about £500 million.

Implications

The broad outlines of our forecast for 1984 are quite clear and reasonably

favourable in spite of the unavoidable uncertainty concerning some aspects of the economy in 1983 and earlier years. We expect GNP to rise by almost 3 per cent, non-agricultural employment to rise marginally from the nadir it reached in the past winter, the government finances to improve slightly as a proportion of GNP, the balance of payments deficit to be further reduced and the rate of price inflation to fall substantially in the second half of the year. Against this, unemployment is likely to continue to climb, albeit slowly, and foreign borrowing remains at a level where it imposes an increasing drain on the economy.

The most significant feature of 1983 is probably that the surge in exports was accompanied by a dramatic increase in industrial productivity, so that Ireland faces improving world markets in 1984 from its best competitive position for several years. The key question facing the country is whether advantage can be taken of this favourable situation, or whether it will be dissipated in undue pay increases or industrial strife.

This is only partly a policy issue for the government itself. Far more it poses a challenge to trade union leaders and members, and to a lesser degree to employers. With regard to the private sector, employers' self-interest, combined with the state of the labour market, will probably ensure that pay settlements do not get totally out of hand. With rising output per head, some firms are in the position to pay substantial increases, but it would be very much better for these firms, for the country, and ultimately for their workforces, if even their settlements can be restricted to moderate levels, certainly within single figures unless phased over a period well exceeding a year. Increased output and employment in the short-run, and higher re-investment in the medium term can reasonably be expected to result, given the existing circumstances when markets are growing. Many other firms remain unable to pay large increases without endangering their existence, and in these cases it is imperative that unions do not push too hard for equality of treatment with employees of more successful firms, if unnecessary job losses are to be avoided.

The role of the government's pay guidelines and proposed methods of enforcement in private sector pay bargaining is interesting. Even moderate private sector settlements seem unlikely to incorporate the lengthy pay pause proposed in the guidelines. In many cases this is unlikely to incur any official disapprobation either because the firm involved is engaged in export trade where price controls do not apply, or because rising output will enable pay increases to be absorbed without seeking permission to raise prices on the domestic market. In the relatively few cases where increases could only be paid if permission can be obtained from the Prices Commission for a compensating rise in prices, it will be interesting to see whether or not the guidelines stiffen employer resistence to pay claims, and if so, whether such resistance proves effective. If the situation does lead to industrial conflict, the government could be faced with a difficult dilemma in how far to insist on adherence to its published guidelines. In many ways it might be preferable to make these guidelines a little less severe and rigid before any challenge becomes manifest. A private sector pay explosion needs to be avoided, but so does industrial conflict over relatively modest private sector pay increases.

In the public sector itself the situation is much more clear-cut. The govern-

ment is certainly correct in economic terms to seek a lengthy pause in public sector pay. The public service unions' claims for single-phase double-figure increases with no pause are quite unrealistic, and if conceded would negate most of the progress so far achieved in checking the deterioration in the public finances. One major difficulty is that levels of staffing and real take-home pay achieved around the turn of the decade on the back of unsustainable borrowing have come to be regarded as the norm, to which an early return must be sought. An acceptance on the unions' side that any such return is not feasible, and that in the national interest a compromise solution much closer to the government's position should be sought, would be a major contribution towards lasting economic recovery and towards long-term public sector employment. The dangers of intransigence include not only the direct consequences of any major industrial disputes in the public sector, which, according to where they occur, could seriously damage the economic recovery itself. They also include the possibility of serious damage to such basic institutions of industrial relations as the Labour Court and arbitration boards, which could suffer from a loss of credibility, either through accepting too readily official instructions on pay limits or through having findings which ignore such guidelines rejected by the government.

For its part, while adhering to its general stance of ruling out any large public sector increases in 1984, the government might need to show some flexibility with regard to details and to timing, if it appears that a reasonably acceptable compromise could be reached.

At best, therefore, 1984 could see the optimum evolution, where private sector pay rose modestly without seriously eroding competitiveness, while public sector pay remained at a virtual standstill for most of the year. This would offer hope, both of long-term employment growth and of obtaining a significant improvement in the chronic malaise of the public finances. At worst, 1984 could see serious industrial strife alongside rates of nominal pay increases which would seriously impede industrial recovery and would return the public finances to a condition in which really drastic cuts in employment and services became inevitable.

The forecast in this *Commentary* is based on the assumption that common-sense will determine that the choice lies nearer to the better than the worse. However, if this assumption is to prove justified then skill and pragmatism will need to be exercised both by government and by the leaders of organised labour.

RECENT CHANGES IN IRISH FERTILITY

J. J. Sexton and Michele Dillon*

I. Introduction

The main purpose of this paper is to provide a broad description of fertility trends in Ireland over the last two decades. The analysis investigates in particular whether there are regional (i.e., county) differences in relation to the levels of fertility and how these have changed. In the final part of the paper we discuss the likely future pattern of fertility trends and consider some economic and social implications arising therefrom. The last-mentioned aspect is now a matter of considerable significance since there are indications (from the annual births total) that the general decline in fertility has escalated to such an extent in recent years that the effects may be quite substantial and materialise within a relatively short period of time.

Before we proceed to present any analysis it is necessary to describe what we perceive by "fertility" in the sense used in this paper. Conventional methods of measuring fertility relate essentially to the propensity of the female population to reproduce. Generally these methods take the form of relating numbers of births to the numbers of women in the child-bearing or reproductive age group between 15 and 49 years. Clearly, within this range, actual age is a factor which has to be taken into account since the incidence of childbirth decreases with the woman's age. Therefore, many analyses are based on what are termed "age-specific fertility rates" (ASFR) which are, in effect, the ratios of the numbers of births to the female population in specific age groups. These might be calculated for single years of age, or, for example, for five-year age bands (such as those given in Table 4). A further distinction which may be made is to concentrate on marital fertility or births to married women only. This can be important as the proportion of married women in the population can, for example, vary between regions, or over time, and this can significantly influence derived fertility trends if the calculations are based on total numbers of women (both single and married). While it is important to make this distinction in Ireland, in international comparisons of fertility however this subdivision is now seldom used as in many countries a significant and increasing proportion of total births relate to informal relationships which are not marriages in the legal sense. Basically, the approach adopted in other countries in measuring changes in fertility at the aggregate level is to consider fertility in terms of the propensity of the total female population to reproduce, irrespective as to whether those changes may be due to shifts in the pattern of marriage behaviour, movements in the actual level of fertility as such, or due to any other social factors.

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The calculation of ratios in the manner described obviously requires comprehensive information on births (particularly by age of mother) and on the marital status and age distribution of the female population. While fairly detailed information on births is published each year in the Annual Report on Vital Statistics, an accurate age by marital status profile of the Irish female population is available only from Censuses of Population. Basically, therefore, in this type of analysis one is confined to observing the relevant fertility measures for particular years, i.e., the years in which Censuses were held. In this paper we shall base our analysis on data relating to the years 1961, 1971, 1979 and 1981.

II. Fertility in Ireland in Relation to Other Countries

Before we attempt to analyse fertility in Ireland in any depth let us first describe the situation here in the context of fertility levels and trends in other Western countries. It is, of course, a matter of well-established fact that the levels of fertility in Ireland are high by international standards. This is reflected even in terms of crude birth rate figures, despite the imperfections of this indicator as a measure of fertility (which is significantly influenced by the age structure of the total population and the proportion who are married). Table 1 shows crude birth rates for 15 selected countries for the years 1961, 1971 and 1981. For the most recent year indicated the figure for Ireland is so much in excess of those for other developed countries in the Western hemisphere that it leaves little room for doubt that fertility is the primary reason involved. In 1981 Ireland had a crude birth rate of 21.0 per thousand of the population, the next highest figures being for Portugal and New Zealand with figures of 16.3 and 16.1, respectively. The 1981 rates for many of the other countries listed are considerably lower, the figure for West Germany being as low as 10. It is of interest to note, however, that Ireland has not always headed the international league table in terms of this indicator. The figures for 1961 show that the birth rate for Ireland in that year was much the same as it was twenty years later (just over 21) but the rates for all other countries were then higher, some of them substantially higher — such as those for New Zealand and Canada which exceeded 25 per thousand of the population at that time.

The reasons underlying the change in these relative relationships are rather complex. In Ireland, as we shall see, there was a significant fall in marital fertility levels over the period under discussion but there was, simultaneously, a rapid rise in the proportion married. The net result of these counter-balancing trends was a sort of equilibrium in the crude birth rate which is, in arithmetic terms, based solely on numbers of births and the total population. However, other countries experienced changes in marriage patterns which were radically different from those which emerged in Ireland during this time. Appendix Table A shows the proportion of the female population which was ever-married (i.e., either currently married, widowed or divorced) in 1960, 1970 and 1980 for four age groups between 20 and 44 years for Ireland and for nine other selected countries in the Western hemisphere. In Ireland the proportion married grew significantly in all age groups over this period, quite rapidly during the 1960s and at a somewhat slower rate between 1970 and 1980. For

the other countries shown, while there was a general (though not universal) upward movement of modest proportions in the proportion married in the younger age groups during the 1960s, there was a sharp fall in this proportion between 1970 and 1980. For some countries these decreases were quite dramatic — in Denmark, for example, in the 20 to 24 year age category, the proportion ever-married fell from 55 per cent in 1970 to 19 per cent in 1980; in the United States over the same time span the proportion fell from 63 per cent to 50 per cent and in Britain the percentage ever married in this age group fell from 63 per cent to 46 per cent. In the 25 to 29 year age group the rate of decline in the proportion married for the other countries shown was somewhat less, but it was still of quite significant proportions, particularly in Denmark. For the older age groups shown the ratios in question remained fairly stable over the period under discussion even though there was, again, a tendency for these ratios to fall slightly in the 30 to 34 year age category; in Ireland, on the other hand, the proportion rose in this age group.

TABLE 1: Crude Birth Rate, EEC Countries, 1961, 1971 and 1981

Country	Total Number of Births per 1,000 Total Population			Percentage decline 1961-1981
	1961	1971	1981	%
West Germany	18.0	12.7	10.1	43.9
France	18.2	17.2	14.9	18.1
Italy	18.4	16.8	11.5	37.5
Netherlands	21.3	17.2	12.8	39.9
Belgium	17.3	14.6	12.7	26.6
Luxembourg	16.0	12.9	11.5	28.1
United Kingdom	17.9	16.2	13.5	24.6
Ireland	21.2	22.7	21.0	1.0
Denmark	16.6	15.2	11.1	33.1
Spain	21.3	19.7	15.1	29.1
Portugal	24.3	20.2	16.3	32.9
United States	22.6	16.2	15.8	30.1
Canada	25.3	18.6	15.4	39.1
Australia	21.9	21.0	15.4	29.7
New Zealand	25.9	22.3	16.1	37.8

Sources: Eurostat (1983) — Demographic Statistics, 1981
United Nations (1980) — Selected Demographic Indicators by Country, 1950-2000.
OECD (1982) — Labour Force Statistics.

The figures given in Appendix Table A for the different countries reflect the growing tendency towards cohabitation without going through the legal formalities of marriage. This is a trend which has been evolving in other countries over quite a number of years, particularly in Scandinavia. In Denmark, for example, if one is to accept the 1970 figure for the proportion married as representing a "norm" subsequently covering both formal and informal relationships, then one can speculate that in 1980 about two-thirds of "marriages" in the 20 to 24 year age group were of the latter kind. The fact that the proportion legally married increases with age suggests that, eventually, many informal arrangements are transformed into legal marriages, but it must also be kept in mind that the differences between age groups would also reflect changing attitudes among successive cohorts in the population.

TABLE 2: Total Fertility Rates, EEC Countries, Spain and Portugal, 1961, 1971 and 1979

Country	Total Fertility Rate (TFR) (per woman)			Percentage Decline in TFR
	1961	1971	1979	1961-1979
West Germany	2.457	1.921	1.379	43.9
France	2.807	2.535	1.867	33.5
Italy	2.407	2.411	1.738	27.8
Netherlands	3.207	2.381	1.567	51.1
Belgium*	2.644	2.208	1.978	37.7
Luxembourg	—	1.920	1.470	—
United Kingdom	2.784	2.407	1.859	33.2
Ireland	3.791	3.978	3.229	14.8
Denmark	2.547	2.043	1.602	37.1
Spain	2.765	2.860	2.303	16.7
Portugal	3.183	2.799	2.112	33.6

Source: Demographic Statistics, 1981. Eurostat (1983).
*The most recent TFR for Belgium relates to 1978 but the percentage decline for 1961/78 has been converted to an 18 year equivalent rate.

Since the levels of fertility would be generally lower for informal liaisons the overall trend indicated by the figures in Appendix Table A would tend progressively to depress the birth rates for the countries indicated. In Ireland, as we have already mentioned, the changing marriage pattern since the early 1960s has tended to raise the birth rate. In earlier times, of course, the situation in this country was quite different. For generations the Irish social scene was characterised by a late average age at marriage and a low propensity to marry in that many never married at all. Furthermore, the high level of emigration depleted the young adult population which had the effect of further reducing the overall number of births. These influences acted as an implicit but extremely effective form of birth control even though they were not perceived as such at that time. The situation changed after the early 1960s when the level of emigration began to taper off, the average age at marriage started to fall and the overall propensity to marry began to rise.

It will be noted that there was a marked slowing down in the rate of increase in the proportions married in different age groups in Ireland during the 1970s. Of further interest is the fact that a comparison of the 1979 and 1981 Census figures indicates that these increases ceased altogether during this short period — in fact, there is evidence of a slight fall in these proportions for the younger age groups. It is rather early yet to say whether this is a first indication of a significant behavioural change similar to that which occurred in other Western countries, or whether it may be a reflection of the difficult economic circumstances which emerged during this period.

Before we conclude this overview of fertility in an international context it is of interest to examine further the situation using an indicator somewhat more appropriate than the overall crude birth rate. One frequently used method involves the compilation of what is called a "total fertility rate" which is essentially the sum of the age specific fertility rates for individual years of age in the reproductive age span. This purports to represent, in average terms, the total number of children born per woman during this reproductive age

interval. In this context a calculated value slightly in excess of 2 is termed a "replacement" level in that in terms of current fertility patterns the population is replacing itself. The small excess over the value of 2 is necessary to take account of the deaths of offspring; usually the actual replacement value of the total fertility rate is about 2.1. If the total fertility rate is greater than this level the reproductive mechanism in the population is operating at more than replacement level while a value of 2 or less implies the reverse. If the latter situation were sustained for a long enough period the population could ultimately begin to fall.

Table 2 shows total fertility rates for EEC countries, as well as for Spain and Portugal, for the years 1961, 1971 and 1979. For the most recent year shown Ireland has by far the highest total fertility rate, 3.2 followed by Spain and Portugal each with a value just over the replacement level. For France, Belgium and the United Kingdom the values are somewhat less than replacement but in the case of the other countries the levels are significantly lower, that for West Germany being less than 1.4. If such trends persist a number of European countries could ultimately begin to experience declines in population and, in fact, this situation is already reflected in some official population projections. It must be remembered, of course, that other factors (such as external migration) influence future population changes and, indeed, fertility trends may change. It will be noted from work by Calot and Thompson (1981) that there was evidence of a more or less simultaneous, if shortlived, recovery in fertility (as measured by the total fertility rate) in Britain, France and West Germany in the late 1970s. However, even if actual population declines do not materialise, the current fertility patterns in Western Europe will inevitably give rise to significant imbalances in the age structure in many countries towards the end of this century. This will have far-reaching social and economic implications and is an issue which has already engaged the attention of researchers and policy makers in the social and economic sphere; as far back as 1976 the Council of Europe organised a wide ranging seminar on the implications of an ageing and declining population.

It will be noted from Table 2 that in terms of the total fertility rate, Ireland experienced the smallest decline over the period between 1961 and 1979 — 15 per cent. Apart from Spain, where the decline was 17 per cent, in virtually all of the other European countries listed the decreases exceeded 30 per cent and the decrease for the Netherlands was as high as 51 per cent. It must be borne in mind, however, that the total fertility rate is essentially a measure of the propensity of the whole female population in the fertile age band (both ever-married and single) to reproduce and in the case of Ireland the relatively slow decline in fertility would be partly due to the significantly increasing proportion of married persons in the childbearing age span. Conversely, in many other countries, as we have noted from our earlier discussion, the behavioural trend in regard to marriage was quite the reverse and this has tended to accelerate the decline in fertility when measured in this way.

III. Recent Fertility Patterns in Ireland

Let us now move on to a more detailed consideration of fertility in Ireland, involving particularly analyses of inter-county differences. We will in the first

instance examine the actual levels of fertility in different counties for the most recent year for which this is possible — 1979. We will then look at the changing national trend in fertility over the period from 1961 to 1981 and analyse inter-county variations in this trend. It should be mentioned that in recent years other studies have dealt with the fertility issue in Ireland such as those of Keating (1976) and NESC Report No. 63 (1982); therefore, in national terms, the evidence presented here is essentially a recapitulation of familiar information even though it does represent an updating on the basis of the most recent 1981 Census data. The main concentration in our subsequent analysis will be on the regional or county aspects (which were dealt with briefly in Herlihy (1981)) and on how fertility trends are likely to behave in the years ahead.

Current Fertility Levels in Different Irish Counties

In assessing the fertility situation in Ireland in relation to other countries we have used as measures the rather crude overall birth rate and the total fertility rate. Neither was seen to be particularly ideal because of differences in the underlying social structures between countries and in fact the same problems manifest themselves when one attempts to make inter-regional comparisons within a country. In Ireland, for example, the proportion of women who are married in different age groups may vary from county to county, and as we have already noted, it has certainly varied over time. Therefore, in investigating inter-county fertility we will restrict our analysis to considering births to married women only, i.e., legitimate births. The exclusion of births to single women will not materially affect the type of overall assessment in which we are engaged. Even though the number of illegitimate births has been increasing fairly rapidly over the years, the overall number involved is still relatively small, some 4,400 out of 70,900 births in 1982, or just over 6 per cent of the total. It should be borne in mind, however, that illegitimate births are relatively more important in the younger age groups of the fertile span; they are heavily concentrated among single women aged between 15 and 24 years and in fact account for about a third of all births to women in this age group.

Even if one restricts the analysis in this way, further steps are necessary in order to obtain a true picture of differences in fertility levels between counties. The age structure of the population of married women is a factor which must be taken into account. If, for example, a county has a population of married women which is older than average, then indicators based on the total number of legitimate births and the numbers of married women will tend to understate the level of fertility in that county since the age specific birth rates are substantially lower in the older age categories of the reproductive span. It is necessary, therefore, to make adjustments to cater for this factor. There are a number of ways in which this can be done; in this study we have taken the age specific legitimate fertility rates for each county (using five year age spans from 15 to 49 years) and reweighted these on the basis of the age distribution of married women in the State as a whole. This is essentially a form of standardisation similar to that used in compiling the standardised death rates contained in the Annual Report on Vital Statistics. Aggregate legitimate fertility rates for

1979[1] covering the entire fertile age span from 15 to 49 years, based on the reweighting procedure as described above, are given in Table 3 following, which also contains the unadjusted overall rates, (i.e., without the application of any correction for differences in age structure between counties).

TABLE 3: Weighted Marital Fertility Levels by County, 1979

County	Fertility Level		*Adjusted County Fertility Levels as % of National Level
	Unadjusted	Adjusted*	
	per 1,000 married women		%
	(1)	(2)	(3)
Wicklow	155.9	145.8	90.2
Dublin	147.1	147.6	91.3
Waterford	158.0	155.4	96.1
Laois	154.6	156.5	96.8
Kildare	174.6	158.5	98.0
Clare	161.4	160.6	99.3
Kilkenny	161.2	160.6	99.3
Louth	170.1	161.5	99.9
Meath	171.5	164.8	101.9
Cork	160.6	165.5	102.4
Limerick	169.2	166.6	103.0
Offaly	169.4	167.2	103.4
Roscommon	153.9	171.7	106.2
Monaghan	175.8	171.8	106.2
Tipperary	159.3	172.9	106.9
Donegal	178.4	175.9	108.8
Wexford	181.7	176.6	109.2
Longford	179.9	178.6	110.5
Sligo	173.4	179.0	110.7
Kerry	174.6	180.9	111.9
Cavan	172.1	181.3	112.1
Mayo	170.9	181.9	112.5
Westmeath	186.1	183.2	113.3
Galway	176.6	183.2	113.3
Carlow	194.1	184.1	113.9
Leitrim	164.4	187.2	115.8
State	161.7	161.7	100.0

*The age specific legitimate fertility rates for each county were reweighted on the basis of the age distribution of the number of married women in the State as a whole. The figures for each county in Col. (2) are the aggregates of these reweighted rates.

It will be immediately noted that the adjustment procedure used makes quite a difference in interpreting variations between counties. As a result of the correction for the age structure of married women, the rates (which are expressed in the form of births per 1,000 married women) for many of the western counties, where there is a higher concentration of persons in the older age groups, have been significantly increased and those in a number of eastern counties reduced. The overall State level for marital fertility in 1979 was 161.7 per thousand married women but the data indicate quite substantial variations about this figure among the counties. The lowest levels (after adjustment) were

[1]The year 1979 is the most recent for which this cross-sectional inter-county analysis of fertility levels can be carried out. It requires for each county both data on legitimate births classified by age of mother and, simultaneously, information on the numbers of married women by age. The ASFR for individual counties are not given in this paper but are available on request from the authors.

for the counties of Wicklow and Dublin with levels of 145.8 and 147.6, respectively; the highest figures were for Leitrim and Carlow with levels of 187.2 and 184.1, respectively. The counties in this table are, in fact, ranked in order of ascending (adjusted) fertility levels, and it will be noted that there is a marked tendency towards higher fertility levels in the western counties and to relatively low levels in the eastern half of the country. There are some exceptions to this general pattern, however, notably Carlow as referred to already which had a significantly higher fertility level than other adjoining counties in Leinster and, on the other hand, Clare which exhibited an uncharacteristically low level of fertility when compared with other counties along the western seaboard. Those counties ranked highest had fertility levels some 25 per cent above those with the lowest levels.

Even though there is a limit to the extent to which we can pursue detailed analyses in the context of this short paper, it is of interest to probe further and to try to identify some of the reasons behind the inter-county variations in the fertility levels. Aspects which immediately come to mind and which would tend to influence fertility are the social group structure, religion, and the proportion of the population resident in rural areas and so on. The only source which provides information on fertility classified according to such characteristics are the Censuses of Population and in this regard, unfortunately, the most recent information relates to 1971 (Volume X — Fertility of Marriage). Similar information was also collected in the 1981 Census but data under this heading are unlikely to be issued for quite some time yet. Even though the 1971 figures are now rather out of date, it is of interest to examine them from these points of view and, in fact, as we shall see, some interesting features emerge. Two aspects in particular appear to have a strong influence on fertility, namely, social status and religion. Appendix Table B shows information from the 1971 Census giving data on the numbers of children born per 100 families classified by socio-economic group and religion. Looking at the figures for social groups, it will be noted that there is quite a divergence of fertility levels ranging from 380 or more for farmers and unskilled manual workers down to about 300 for employers and managers, salaried and higher professional workers. The second set of figures shows that the average fertility for Catholic families, at 352, was substantially higher than that for families of other (mainly Protestant) denominations, for whom the level was about 230. It may be argued, however, that some of this difference could be due to variations in the social group structure in that a greater proportion of persons in the Protestant community would be in the higher social groups. However, a closer examination of the 1971 Census data shows similar differences in fertility levels between religious denominations within social groups, suggesting that religion is, not surprisingly, a primary causative influence. However, since Catholics form an overwhelming proportion of the population of the State the religious aspect would not have a significant influence on inter-county differences in the level of fertility, except in some counties where the Protestant community is relatively sizeable, e.g., Wicklow and in some of the border counties.

The foregoing information suggests that the relatively high fertility levels evident for western counties are due to the influence of the large numbers of persons with agricultural occupations resident in these counties. On the other

hand, the more urbanised eastern and southern counties contain a very high proportion of persons with professional and managerial occupations, for whom fertility tends to be low. However, these latter counties also contain high proportions of unskilled workers in the industrial and building sectors (for whom fertility is high) so that one cannot adopt too firm a stance in maintaining that differences in social group structures is the dominant factor giving rise to inter-county variations in fertility. Some of the differences may be due to purely regional aspects, such as differences in the extent of access to family planning facilities. However, in trying to determine whether there is a purely regional influence (whatever the underlying reason) it would be necessary to take account of the many other factors indicated — average duration of marriage, average age of wife at marriage, social group, religion, etc. — using a detailed standardisation procedure or some other means such as a cross-sectional multiple regression analysis. Such a study should be possible when the detailed fertility data from the 1981 Census become available.

Changes in Fertility over the Period 1961-1981

Let us now consider how fertility in Ireland has changed over the period since the early 1960s. Table 4 shows national Age Specific Fertility Rates (ASFRs) for married women for the years 1961, 1971 and 1981 as well as percentage changes in these rates over the two decades concerned. The most notable feature of the trend in the 1960s was a substantial fall in fertility among older women. The rate for married women aged 35 years and over fell by as much as 25 per cent. There was a smaller but still significant fall of between 10 and 20 per cent for women aged between 25 and 34 years. There was a marginal decrease in the level of fertility for young married women aged between 20 and 24 years and fertility actually rose (by 14 per cent) for the 15 to 19 year age band but, of course, the number of married women in the last mentioned category is quite small (about 3,000 in 1971) and therefore the impact on the overall level of fertility was of negligible proportions. During the 1970s the age pattern of fertility changes was somewhat similar; the greatest decreases took place among older women but in this latter decade the scale of the decline was much greater for all age categories. Between 1971 and 1981 the ASFRs for women aged over 35 years declined by over 30 per cent (and by nearly 50 per cent for women aged between 40 and 44 years) and by between 20 and 30 per cent for younger married women. The very substantial decreases evident for the older age group may be indicative not only of a fall in fertility as such, but also of a "moving forward" of births with regard to the age of the mother according as women began to marry younger.

It is clearly of interest to try to express these changes in a composite or overall manner embracing all age groups. However, in attempting to do this one must again take account of variations in the age structure of the population of married women aged between 15 and 49 years, which changed significantly over the period under discussion. One means of deriving an overall measure of the change in fertility is to apply age specific fertility rates for a retrospective period to the current stock of married women and then compare the projected number of births thus obtained with the actual number which occurred. If, for example, we apply the 1961 ASFRs given in Table 4 to

the numbers of married women of different ages in 1971 we obtain a projected number of births for 1971 equal to 74,453, while in fact only 65,709 births actually occurred in that year. On this basis it can be held that legitimate fertility fell by 12 per cent over the 10 year interval concerned. If we repeat the exercise for 1971/81 (i.e., apply 1971 legitimate ASFRs to the numbers of married women in 1981) then we obtain a projected births total of 93,661 while the actual number was 68,453, implying a fall of 27 per cent in fertility among married women between 1971 and 1981. These proportionate decreases indicate that legitimate fertility declined by 36 per cent between 1961 and 1981[2]

TABLE 4: Legitimate Age Specific Fertility Rates 1961-81

Age	1961	1971	1981	Change 1961/71	Change 1971/81
	Births per 1,000 Married Women			%	
15-19	608.6	692.8	550.0	+13.8	−20.6
20-24	475.0	457.4	324.8	−3.7	−28.9
25-29	394.5	349.0	261.7	−11.4	−24.9
30-34	296.5	248.0	187.1	−16.4	−24.6
35-39	207.7	160.0	105.1	−23.0	−34.4
40-44	76.8	58.2	30.0	−24.2	−48.5
45-49	5.8	4.3	2.9	−25.9	−30.2

Sources: Censuses of Population. Vital Statistics Reports.

At this point it is of interest to refer back to our earlier discussion of fertility trends in other countries. In the course of those comparisons we emphasised that the rate of decline for Ireland could be deemed to be understated (in terms of the measures used) due to the rising proportion of married women in our population. In other countries the changing marriage pattern had the opposite effect — it tended to accelerate the measured decrease in fertility. However, the size of the above-mentioned decrease in marital fertility in Ireland over the period 1961/81 (36 per cent) suggests that, were these varying social influences taken into account, the decline in fertility here during the two recent decades was not materially different from that in other Western countries. Indeed, since any adjustment made on this basis would, if anything, tend to reduce the rates of decline in other countries, the range of figures indicated in Table 2 relating to total fertility rates, suggests that the fall in fertility in Ireland may have been more rapid than in some other States.

Let us now try to determine whether the above-mentioned national or global changes conceal any regional differences in the manner in which fertility has declined over the past 20 years. It is actually possible to compile projected numbers of births for different counties for 1971 and 1981 in the manner described above and to compare these with the actual county birth totals. The data requirements involve figures for the numbers of married women by age in each county for 1961, 1971 and 1981 and the numbers of legitimate births by

[2]This method of assessing the relative change in fertility is not, of course, unique. One could, for example, apply the 1981 ASFRs to the 1961 stock of married women and compare the results with the actual 1961 births. In fact this variation in the method yields a somewhat greater decline (of some 40 per cent) over the 20 year period involved.

age of mother in each county for 1961 and 1971. It is not necessary to have detailed analyses of births for 1981 (other than the county totals) since the method involves applying ASFRs *for 1971* to the 1981 county aggregates for married women. The results of the relevant calculations are given in Table 5 which shows the actual numbers of births by county for 1961 and actual and expected county birth totals for 1971 and 1981, along with the relative changes in fertility over each decade.

TABLE 5: Legitimate Births. Actual and Expected Totals by County 1961-81

County	1961	1971		1981		Percentage Decline in Legitimate Fertility		
	Actual	Actual	Expected Legitimate Births based on 1961 ASFRs	Actual	Expected Legitimate Births based on 1971 ASFRs	1961-1971	1971-1981	1961-1981
						%		
Carlow	761	865	913	945	1,324	5.3	28.6	32.2
Dublin	17,160	20,408	23,538	18,829	25,245	13.3	25.4	38.1
Kildare	1,470	2,027	2,129	2,657	3,920	4.8	32.2	34.8
Kilkenny	1,153	1,266	1,361	1,386	2,006	7.0	30.9	36.8
Laois	968	911	1,082	1,035	1,365	15.8	24.2	36.7
Longford	576	554	572	626	909	3.1	31.1	33.4
Louth	1,542	1,876	2,197	1,903	2,624	14.6	27.5	38.3
Meath	1,277	1,680	1,739	2,196	3,035	3.4	27.6	31.0
Offaly	1,149	1,145	1,333	1,169	1,612	14.1	27.5	38.3
Westmeath	1,202	1,146	1,362	1,346	1,782	15.9	24.5	36.2
Wexford	1,726	1,963	2,232	2,152	2,861	12.1	24.8	33.9
Wicklow	1,233	1,609	1,835	1,956	2,636	12.3	25.8	35.3
Clare	1,292	1,548	1,792	1,826	2,478	13.6	26.3	36.7
Cork	6,927	7,990	9,114	7,770	10,894	12.3	28.7	38.6
Kerry	2,081	2,070	2,293	2,312	2,991	9.7	22.7	33.7
Limerick	2,940	3,284	3,883	3,451	4,699	15.4	26.6	38.0
Waterford	1,559	1,722	2,095	1,673	2,330	17.8	28.2	41.0
Tipperary	2,668	2,566	3,115	2,801	3,688	17.6	24.1	36.8
Galway	2,804	3,197	3,279	3,326	4,958	2.5	32.9	34.9
Leitrim	539	456	481	517	657	5.2	21.3	23.9
Mayo	2,053	1,838	1,956	2,200	2,848	6.0	22.8	27.4
Roscommon	973	797	926	891	1,260	13.9	29.3	30.8
Sligo	960	933	1,006	1,014	1,471	7.3	31.1	35.7
Cavan	1,076	934	1,063	1,065	1,353	12.1	21.3	30.0
Donegal	1,871	2,054	2,153	2,431	3,324	4.6	26.9	36.2
Monaghan	890	870	1,004	976	1,391	13.3	29.8	38.5
State	58,850	65,709	74,453	68,453	93,661	11.7	26.9	36.4

Looking first at the trend indicators for the 1960s the data show that there was a fall in fertility in all counties but this varied from a small decline of less than 3 per cent in Co. Galway to nearly 18 per cent in Waterford and Tipperary. Here again one can observe a broad (but by no means total) divergence between the western counties and those in the east and south. Apart from Galway there were quite small decreases in legitimate fertility in Mayo, Sligo, Leitrim, Longford and Donegal (all in the three per cent to seven per cent range) compared with much larger decreases in other counties, many of which were in excess of 12 per cent. However, it should be noted that some eastern counties also experienced quite small declines in fertility, notably

Carlow and Kildare (both 5 per cent) and Meath which showed a fall of only 3 per cent. The fertility decline in Dublin County (including City) was over 13 per cent.

Moving on to consider the 1970s there were, of course, greater decreases in all counties consistent with the much larger decline in fertility generally. However, an unusual feature of the results in this later decade is that quite a number of counties which showed quite small decreases in fertility in the 1960s experienced very substantial declines between 1971 and 1981. In Galway, for example, where, as we have already noted, there was a very small decrease of less than 3 per cent between 1961 and 1971 there was a very large drop of 35 per cent during the 1970s; a similar trend pattern over the two decades is evident in Co. Longford, and in a number of other counties as well. This may be described as a sort of "catching up" phenomenon. In fact, if one considers the relative declines in fertility by county over the whole 20 year period between 1961 and 1981 (as shown in the final column of Table 5) there is not a great deal of inter-county variation, with the exception of the counties of Mayo and Leitrim for which the decreases were significantly below average. The extent of the greater variation in the earlier decade is indicated by the coefficients of variation for the percentage decreases among counties. For the earlier 10 year span from 1961 to 1971 this is 0.456, much greater than in the following decade for which it is 0.119. The corresponding coefficient relating to the percentage decreases over the full 20 year period is 0.109.

With regard to possible reasons behind the past fertility trends which we have identified the period under discussion saw very considerable changes in attitudes in Ireland which involved, in particular, a significant decline in the influence of religions on social behaviour. Family planning and the use of contraceptives became widespread. While one cannot quantify precisely the extent to which these aspects influenced the decline in fertility in Ireland, few would dispute that they were major contributing factors. We have noted, in particular, the more regionally widespread nature of the fertility decline between 1971 and 1981 and it is likely that this reflects a gradual change in attitudes which began in the more urbanised centres and then spread throughout the country generally.

Another relevant aspect was the changing situation with regard to women in employment. During the period under consideration (and in particular during the 1970s) many restrictive employment practices in so far as they related to women were removed and the whole concept of women's position in the labour force (*vis-à-vis* their traditionally held role in the home)changed significantly. However, in this regard it is difficult to distinguish between cause and effect. One cannot be too specific as to whether the improved opportunties for female employment contributed to the decline in fertility or whether falling fertility led to more women remaining in the labour force. We will comment further on this aspect later in the paper.

IV. National Fertility Trends since 1981

Finally, let us assess, in so far as we can from the available data, how the overall national pattern of fertility has been behaving in recent years. A

summary examination of the current births statistics suggests that quite significant changes have been taking place. The number of births has been falling rapidly, declining from a peak level of 74,400 in 1980 to 66,800 in 1983. The decrease was particularly rapid between 1982 and 1983 when the total fell by over 4,000. As a result the annual number of births has reverted to the level which prevailed during the late 1960s. This indicates a continuing and even more rapid fall in fertility but, as we have already indicated, it is necessary to look at the situation in more detail as other factors (such as a changing population structure for married women) may have influenced the situation to some extent. It is of interest, therefore, to follow through our previous estimates and to try to determine whether, in fact, these current figures do reflect a more rapid fertility decline.

TABLE 6: Estimates of the female married population aged 15 to 49 years and the number of legitimate births, 1983

Age	Female Population			Proportion Married 1981	Estimated No. Married 1983 [(4) × (5)]	1981 Legitimate ASFR's (births per woman)	Expected No. Legitimate births in 1983 [(6) × (7)]
	1981	1986 (proj)[1]	1983 (est)[2]				
	000			%	000		000
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
15-19	159.8	160.0	160.0	2.3	3.7	0.550	2.0
20-24	135.7	137.4	136.4	32.3	44.1	0.325	14.3
25-29	121.7	128.6	124.5	71.0	88.4	0.262	23.2
30-34	113.7	126.1	118.7	84.9	100.8	0.187	18.8
35-39	94.5	117.2	103.6	87.7	90.9	0.105	9.5
40-44	80.6	95.8	86.7	85.8	74.4	0.030	2.2
45-49	74.1	80.2	76.5	81.5	62.3	0.003	0.2
Total	780.1	845.3	806.4	—	464.6	—	70.2

Notes: (1) The 1986 projection is based on assumptions relating to external migration and mortality as given in Population Projection No. II (p.25) in the ESRI study (Conniffe and Kennedy (eds) *Employment and Unemployment Policy for Ireland* (1984). The migration assumption involves an overall net external outflow of 20,000 between 1981 and 1986.

(2) The 1983 estimate of the female population aged 15 to 49 years has been obtained by simple linear interpolation, within age groups, between 1981 and 1986.

Using basically the same approach as adopted in the previous section of this paper, one way to proceed is to compile estimates of the number of married women in different age groups in 1983 and apply 1981 Age Specific Fertility Rates to these totals to derive an "expected" number of legitimate births for 1983. This sequence of calculations is shown in Table 6. Before, however, we proceed to discuss the outcome in terms of expected and actual number of births it is relevant to comment on the ratios used in deriving the numbers of married women in different age categories in 1983. This was done by applying proportions for the numbers married (excluding widows) in 1981 to the estimated 1983 female populations in different age groups. These proportions had been rising for many years but a comparison of the 1979 and 1981 Census results appears to indicate a stabilisation in these percentages; in fact the rates fell slightly for women in the younger age groups (less than 29 years). On this

basis, therefore, it was considered appropriate to apply unchanged 1981 rates to the 1983 female population estimates and not to use higher rates which one would have tended to do on the basis of pre-1979 trends.

The expected number of legitimate births for 1983 calculated in the manner described is given in the final column of Table 6. This number, in excess of 70,000, exceeds the actual number of legitimate births by about 7,500. On the basis of an overall aggregate of 66,800 births if we assume the proportion of illegitimate births to be 6½ per cent this suggests a 1983 total of about 62,500 legitimate births. Therefore, the estimated fall in legitimate fertility between 1981 and 1983 was 10.7 per cent, or 5.5 per cent on an annual average basis. The corresponding annual average decline was 3.1 per cent over 1971/81 and 1.2 per cent between 1961 and 1971. Therefore, the indications are that fertility in Ireland is continuing to fall at a rapidly increasing pace.

It is necessary, however, to sound a word of caution here in view of the tentative nature of the estimates. Changes in the marriage pattern could have affected the issue — if, for example, the proportions married continued to fall in the younger age groups as they did between 1979 and 1981. Increased emigration is another factor which could have contributed to the decline. However, in the short interval involved here, it would require really dramatic, and therefore unlikely, changes in relation to these aspects to reduce the national births total to the extent which has actually occurred.

A question of particular importance is whether the current strong downward trend in fertility will continue for an extended period of time. There are a number of considerations which caution against the assumption that we are in the throes of a long-term downward movement. The economically depressed conditions of the last few years must be borne in mind as these may have temporarily influenced both the propensity to marry and the fertility levels of those already married. There may have been a tendency to postpone marriages and births which could result in an upsurge and a reversal of the current trends when economic conditions ease. On the other hand it can be argued that the length and severity of the current recession, which has involved for many a substantial reduction in real income, may have left a more lasting impression, with consequently more long-term affects on social behaviour. One must also keep in mind the radically different marriage trends which have emerged in other Western countries in recent years; one might well ask whether the apparent stabilisation of the marriage ratios in the younger age groups which occurred in the period 1979-81 is the first sign of a similar trend developing here. If this is so, then we can expect an even more pronounced and sustained decline in overall fertility (i.e., relating to both married and single women) leading to a substantial reduction in the annual number of births and to a signficantly reduced child population by the end of the decade. Taking all aspects of the situation into account we are of the view that this latter scenario is the more likely outcome. If one carries forward the basic estimation procedure used in Table 6 in calculating the number of births in 1983, and applies this to the projected female population for 1986 it suggests a national births total (covering both legitimate and illegitimate births) of just over 60,000 in that year (the details of this estimation are given in Appendix Table C). This would result in a crude birth rate figure of less than 17 per 1,000

population and a Total Fertility Rate of about 2.35. Indeed if one were to carry forward this estimation procedure further into the future to 1991 it suggests an annual births total in the region of 50,000 in that year and a child population total at least 50,000 below the 1981 level (which was 1,038,000).

Summary of our Results and Some Implications arising therefrom

To recapitulate, therefore, our findings highlight again the relatively high level of fertility in Ireland compared with those currently prevailing in other countries in the Western hemisphere. However, fertility has been falling in Ireland but one can obtain different perceptions of the rate of decline, depending on which fertility measure is used. If one relies solely on the crude birth rate this did not up to recently reflect any change in the Irish situation because of the off-setting effects on the births total of a fall in fertility as such and a rising proportion of married persons in the population. If the total fertility rate is used, this indicator reflects a decline in fertility in Ireland but at a much lower rate than in other developed countries, again because of the influence of the marriage pattern in the population which heretofore has been changing here in a very different manner from that in other countries. However, if we confine our analysis to marital fertility (and here we present data for Ireland only) a substantial fall is evident, the decline in fertility being of the order of 36 per cent over the twenty-year period from 1961 to 1981. The greater part of this decline took place during the 1970s when the decrease amounted to almost 27 per cent. If one allows for inter-country differences in the distribution of the population according to marital status the indications are that the decline in fertility in Ireland over the last two decades has been similar to that recorded elsewhere in the Western hemisphere.

Current national birth totals suggest that the rate of fertility decline has accelerated further in recent years even though changes in the proportions of married women and increased emigration may have also influenced the situation. On the basis of admittedly rough estimates, the indications are that marital fertility has fallen by nearly 11 per cent between 1981 and 1983, or 5½ per cent on an annual average basis compared with just over 3 per cent between 1971 and 1981, and over 1 per cent during the 1961/1971 period. The most likely outcome over the coming years is one involving further declines in fertility and significantly lower numbers of births.

Our analysis indicates fairly significant differences in the level of fertility between Irish counties (the reference date in this regard being 1979). The general pattern appears to be one of higher fertility in the western counties when compared with the more urban eastern and southern counties. The indications are that differences in social group structures are an important influence giving rise to these variations but purely regional aspects may also be a factor. It will be possible to investigate these issues in more depth when the detailed fertility data from the 1981 Census are available. There were quite significant differences between counties in regared to the rate of decline in fertility during the 1960s with generally smaller decreases evident for the western counties. However, in the 1970s, when there was a more rapid overall fall in fertility, many of those counties which experienced higher than average decreases were those where quite low declines prevailed in the preceding

decade (1961/1971). Generally, over the full 20 year period under study there was not a great deal of difference between the counties in regard to the rate of decline in fertility, except in the case of Counties Mayo and Leitrim where the decreases in fertility were significantly below average.

The likely future scenario portrayed clearly raises important implications for key aspects of social and economic policy. Issues which immediately come to mind are the size and composition of the future female labour force and the policy and expenditure implications in areas such as Education, Health, etc. Indeed, some of these areas have already been the subject of detailed study from the point of view of demographic change as a whole. The National Economic and Social Council has just issued three reports on the implications of future population changes for Education and Health Services and for Social Welfare along with, significantly, a fourth document which refers to the further implications of the more recent trends relating to fertility and marriage.[3] It is not possible, in the context of this paper, to consider these policy and other implications in detail and the following is merely a summary indication of some of the principal issues involved.

(a) The relationship between falling fertility and the involement of women in the labour force. Participation by married women in working life increased substantially in Ireland during the 1970s and existing projections[4] embody the view that this will continue even if the rate of increase is predicted to decline somewhat over the coming years. However, current fertility movements suggest that women will have considerably fewer constraints (in the form of child or domestic responsibilities) to deter them from entering the labour market in the years ahead. This raises the possibility that these projections, which already involve quite substantial increases in the labour force, may even be on the low side, even though one must bear in mind that there may be offsetting influences, such as the possibility of increased emigration. If the above-mentioned trends lead to a larger female labour force this may, in turn, lead to higher numbers of unemployed women and consequently increased expenditure on unemployment compensation which would tend to partially offset other Exchequer savings which would accrue from lower fertility levels. There is evidence to suggest, however, that attitudinal factors rather than expected family size exert greater influence on married women's decisions to enter the labour force. Fine-Davis (1979) found that the perceived approval of the husband and other close relatives, and a more positive attitude towards employment, were considered to be more important in this regard than the expectation of a smaller family size. Research in the United States (cited in Baldwin, 1982) indicates that the greatest increases in labour participation by married women have occurred for those women for

[3]The full titles for all four documents are given in the list of references.

[4]The female labour force projections contained in the 1984 ESRI Study (Conniffe and Kennedy, eds.) *Employment and Unemployment Policy for Ireland* are generally based on the assumption that the rate of increase in female participation in the 1980s will be one half of the rate of increase which occurred during the 1970s. However, the projection contained in the NESC Report No. 63 *Population and Labour Force Projections by County 1979-1991* involves assumptions with lower participation rates (maintained at a more or less constant level throughout the 1980s) and consequently lower labour force estimates.

whom employment is most difficult (i.e., those with pre-school children).

(b) With regard to the educational sector, allowance would have to be made for significantly smaller numbers at primary level. Indeed, the existing trends in births imply such a fall is inevitable anyway; the crucial question is by how much further the number will decline, and for how long this decrease will continue.

(c) There are also implications for the supply of maternity and child health services, the demand for which will diminish. While this may give rise to an urge to curtail the extent of services, it might be more beneficial in the long run to maintain the same overall level of support and improve the quality of existing services in this area.

(d) On the social welfare side the level of expenditure on Children's Allowances would obviously be affected and even in the more general social welfare area there would be relative savings since virtually all forms of benefits and assistance involve additional incremental payments for child dependants. With regard to the former one can put an approximate order of magnitude on the extent of the annual saving in expenditure in current terms on the basis of a net fall of 50,000 in the child population by 1991; this would amount to about £7 million in current terms.

(e) There would also be some savings in the income tax revenue area since fewer dependants would mean fewer claims for allowances to be set off against tax liability.

(f) There would also be implications in regard to certain aspects of policy on housing. A substantial fall in fertility would lead to a significant reduction in the average completed family size which would have to be taken into account in the context of future planning related to the size of dwellings.

Some of the above-mentioned aspects are of significance, others less so. However, we would venture to say that the combined effects of these and other changes which are likely to arise in Irish society from a smaller births total and a declining child population could be considerable, particularly if the trends which we have illustrated intensify.

References

BALDWIN, W. H., 1982. Introduction to Chapter on "Women and Work", in P. W. Berman and E. R. Ramey, (eds) *Women: A Developmental Perspective*. National Institute of Health Publication No. 82-2298. Washington DC, US.

CALOT, G. and G. THOMPSON, 1981. "The Recent Upturn in Fertility in England and Wales, France and West Germany", *Population Trends*, No. 24, London: HMSO.

CENTRAL STATISTICS OFFICE, Dublin.

Censuses of Population 1961, 1971, 1979, 1981 — various volumes.

Annual Report on Vital Statistics — various issues.

Quarterly Report on Births, Deaths and Marriages and on certain Infectious Diseases — various issues.

EUROSTAT, 1983. *Demographic Statistics, 1981,* Luxembourg.
FINE-DAVIS, M., 1979, "Social—Psychological Predictors of Employment Status of Married Women in Ireland", *Journal of Marriage and the Family*, Vol. 41, No. 1.
HERLIHY, B., 1981. "The Changing Pattern of Reproduction — data for 1971 and 1979", *Irish Medical Journal*, Volume 74, No. 4.
KEATING, W., 1976. "An analysis of Recent Demographic Trends with Population Projections for the Years 1981 and 1986", *Journal of the Statistical and Social Inquiry Society of Ireland*, Volume XIII, Part IV.
CONNIFFE, D. and K. A. KENNEDY, (eds.) 1984. *Employment and Unemployment Policy for Ireland,* Dublin: ESRI.
NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1982. *Population and Labour Force Projections by County and Region 1979-1991* (by J. Blackwell and J. McGregor). Report No. 63.
NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1984. *Education: The Implications of Demographic Change* (by Dennis Murphy). Report No. 71.
NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1984. *Social Welfare: The Implications of Demographic Change* (by Damien Courtney and Anthony Cashin). Report No. 72.
NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1984. *Health Services: The Implications of Demographic Change* (by James Raftery). Report No. 73.
NATIONAL ECONOMIC AND SOCIAL COUNCIL, 1984. *A Review of the Implications of Recent Demographic Changes for Education, Social Welfare and the Health Services.* Background Paper, April.
UNITED NATIONS, New York.
Demographic Yearbook — various issues.
Selected Demographic Indicators by Country 1950-2000 (1980).
OECD, 1982. *Labour Force Statistics*, Paris.

TABLE A: The Proportion of the Female Population in Certain Age Groups who were Ever-Married[1] for Selected Countries in the Years 1960, 1970 and 1980[2]

Country	20-24 years			25-29 years			30-34 years			35-44 years		
	1960	1970	1980	1960	1970	1980	1960	1970	1980	1960	1970	1980
United States	71.6	63.2	49.8	89.5	88.0	79.2	93.1	93.1	90.5	93.9	94.8	94.4
Canada	59.5	56.5	49.0	84.6	84.6	80.0	89.5	90.9	89.5	90.9	92.9	93.2
New Zealand	59.5	64.8	50.8	87.5	89.3	83.6	91.9	94.1	92.4	92.6	95.0	95.2
Germany, FR	45.4	58.4	38.5	79.2	85.8	77.7	86.7	91.1	90.6	88.2	91.2	94.3
France	44.3	49.6	39.9	80.2	81.8	75.6	87.7	89.2	87.7	90.2	91.4	92.4
Belgium	56.5	59.9	52.8	85.5	88.3	84.7	90.1	92.7	92.2	90.8	93.2	94.4
Netherlands	40.6	54.8	41.7	79.5	86.0	79.1	87.9	92.0	90.4	89.7	92.6	94.1
Denmark	54.1	54.6	19.0	85.4	86.2	58.4	90.7	92.7	82.9	91.8	93.7	93.3
Great Britain	58.3	62.9	46.4	86.3	87.3	80.8	90.9	92.2	91.3	89.1	92.6	94.2
Ireland	21.8	31.5	32.3	54.9	68.8	71.2	70.4	80.6	85.4	77.3	82.5	88.6

[1]i.e. currently married, widowed, divorced or separated.
[2]The years are not necessarily those indicated in the headings in each case, but may be adjacent years, i.e., 1971 for 1970 etc.

Sources: (a) United Nations — *Demographic Yearbook* (various issues).
(b) National Sources (Censuses, Current Demographic Series, etc.).

TABLE B*: 1971 Census of Population. Average Number of Children Born per 100 Families Classified by (a) Socio-Economic Group and (b) Religion

Socio-economic group	All durations
Farmers, farmers' relatives and farm managers	387
Other agricultural occupations and fishermen	367
Higher professional	299
Lower professional	323
Employers and Managers	304
Salaried employees	305
Intermediate non-manual workers	315
Other non-manual workers	339
Skilled manual workers	347
Semi-skilled manual workers	340
Unskilled manual workers	380
Unknown	288
Total	345

Religious Denomination	All durations
Catholic	352
Church of Ireland	229
Other stated religions	233
Others	315
Total	345

*These data have been standardised for age of wife at marriage. Duration of marriage is clearly another factor which influences the number of children born to a family at any one point in time. No correction has been made for the effect of this as between categories but reference to the detailed classified data shows that it does not materially affect the comparative relationships indicated above.

TABLE C: Projected Number of Births in 1986

Age	Proj. Female[1] Population 1986 000	Proportion Married 1981	Est. No. Married Females 1986 (2) × (3) 000	Proj. 1986[2] ASFRs for married women (per woman)	Proj. Legitimate Births 1986 (4) × (5) 000	Projected single or widowed Females 1986 (2) − (4) 000	Proj. 1986[3] ASFRs for single etc. women (per woman)	Proj. illegitimate Births 1986 (7) × (8) 000
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15-19	160.0	0.023	3.7	0.4323	1.6	156.3	0.1372	2.1
20-24	137.4	0.323	44.4	0.2417	10.7	93.0	0.0215	2.0
25-29	128.6	0.710	91.3	0.2003	18.3	37.3	0.0156	0.6
30-34	126.1	0.849	107.1	0.1432	15.3	19.0	0.0145	0.3
35-39	117.2	0.877	102.8	0.0750	7.7	14.4	0.0083	0.1
40-44	95.8	0.858	82.2	0.0189	1.6	13.6	0.0012	—
45-49	80.2	0.815	65.4	0.0022		14.8		—
Total	845.3	—	496.9	—	55.3	348.4	—	5.1

Total projected births in 1986 = 60,400

[1]The 1986 projections are as indicated in Table 6.

[2]The projected 1986 ASFR's for married women were obtained by first extrapolating the 1971/81 trends for each age group. The ratios obtained in this way were then further reduced to take account of the estimated overall faster rate of decline in fertility since 1981, estimated at 5.5 per cent per year compared with 3.1 per cent between 1971 and 1981. The reduction factor was $0.882 = \left(\frac{0.945}{0.969}\right)^5$

[3]The 1986 projectd ASFR's for single etc. women were obtained by extrapolating the 1971/81 trends for each age group.

THE EVOLUTION OF THE RATE OF UNEMPLOYMENT IN IRELAND 1962 - 1983

Patrick Honohan*

I. Introduction

For decades an objective of policy in Ireland has been to lower the rate of unemployment — indeed to achieve full employment. Yet instead of falling, the rate of unemployment has increased rather dramatically to record levels. Many possible explanations for this state of affairs have been advanced.

One view looks at the demand for labour and points to the slow growth in the world economy and to a failure of real wages to respond sufficiently to the energy price shocks of the 1970s. Job losses in the 1970s and 1980s have been the key source of unemployment according to this view.

An alternative interpretation notes the sharp reversal of net emigration during the last decade and a half and attributes the growth in unemployment to a corresponding surge in labour supply at home.

According to a third, less plausible perspective, the increase in unemployment is largely a function of an increase in the propensity of those not genuinely seeking work to apply for (increasingly generous) unemployment assistance or benefits or in an increase in the time spent searching for suitable jobs.

Probably each of the three factors has played a part in governing the evolution of the rate of unemployment in Ireland over the past two decades, though their relative importance is the subject of much dispute.

In other larger countries, unemployment has also increased sharply. The role of migration there is obviously small, and the explanation is usually shared between the other two factors. For Ireland, however, migration may be a dominant element in the long run providing the link with unemployment conditions in other countries.

As labour market conditions improve at home or deteriorate abroad Irish workers who might otherwise have emigrated are slower to do so. Also Irish participants in foreign labour markets, especially in Britain, look homeward for job opportunities. This puts upward pressure on the unemployment rate here. When unemployment has worsened sufficiently at home, further net

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immigration will be discouraged. The reverse process can be envisaged following an improvement in labour market conditions abroad, with increased net emigration leading to a reduction in unemployment at home.

There can also be booms and slumps in the demand for labour at home. While these can result in temporary changes in the unemployment position at home, the response of migration will tend, eventually, to eliminate this change, except to the extent that the initial change in unemployment at home has been accompanied by simultaneous and corresponding changes abroad.

The migration theory just outlined is not new. It has been embodied in most of the work which applied econometricians have conducted in the field of aggregate labour market statistics in Ireland over the past few years. In this paper we present a sharper and more conclusive version of this model than has previously been derived. We argue that the Irish unemployment rate, while it can deviate from its average differential *vis-à-vis* the UK unemployment rate, has, in the last 20 years, had a tendency, after reaching abnormal differentials, to converge back towards the average differential. On the basis of past experience, substantial changes in the international unemployment differential can perhaps be expected to be transitory.[1]

Of course it can be argued that the past may be a poor guide to the future in this case. A protracted period of net immigration in the 1970s has depleted the pool of persons abroad likely to return in future years, and has weakened the network of contacts which made it so easy for would-be emigrants to get established abroad. That may be so, but this line of reasoning tends to neglect the continued high level of international mobility of Irish people. Even in those years of high immigration, 1971-76, the level of emigration of young persons was consistent with almost a tenth of each cohort of school-leavers having emigrated.

However, we do not wish to place too much emphasis on the migration theory, as our methodology is not specifically designed to test this theory. There could be other reasons for the international convergence in unemployment rates which we document. Our statistical results can be interpreted in the context of the migration theory, but are of independent interest.

The paper reports on a statistical exploration of the quarterly unemployment rate. We find that an equation consistent with the migration theory — but not exclusively bound to that theory — fits the data rather well. The key explanatory variable is unemployment in the UK. (Previous models have also taken account of relative wages and relative social security benefits as additional indicators of the push and pull factors which influence migration. While we do not disagree with this, we find that our simpler approach using only unemployment rates gives good results. Our account of the determinants of migration takes unemployment rates to be an indicator of job availability, but this is not inconsistent with a role of labour supply behaviour in influencing unemployment).

We examine a list of additional explanatory variables and find that they only have at most a transitory effect on unemployment (although they can have

[1]It is interesting to note that regional unemployment rate differentials within Ireland have also remained roughly constant, cf. Geary and Hughes (1970), Walsh (1974).

an enduring effect on the level of employment). These variables include the Government deficit, real wages, employment in manufacturing and GNP. Our list of explanatory variables could be augmented, and it is hoped to pursue further work along these lines.

The main message which the data seem to reveal is that movements in the Irish unemployment rate are correlated with those in the UK rate, with a tendency for the Irish rate, if disturbed, to return eventually from abnormally high, or low, levels by reference to the UK rate.

II. Methodology

It has not been customary in Ireland to regard unemployment as a variable which should be modelled in a single stochastic equation. The usual methodology, going back to Geary and McCarthy (1976), Walsh (1977), and employed in the various versions of the macromodel (Bradley *et al.*, 1981) is to model unemployment as the difference of labour supply and labour demand functions which are estimated independently. Labour supply is influenced by demographic variables, particularly migration, which in turn are affected by economic variables such as relative labour market conditions at home and abroad as measured by cross-channel differentials in wages, unemployment rates and social benefits. Labour demand is influenced by planned economic activity and by wage rates.

These models use the published data on migration. The quality of these data is thought to be extremely poor (Keenan, 1981) and this mars the empirical implementation of the approaches adopted to date.

The present work pursues an alternative reduced form type of approach which bypasses the migration data problems and explores the determination of the unemployment rate in terms of its own dynamics and possible forcing variables such as unemployment conditions abroad and economic activity at home.

A caveat must be entered with regard to the data. It is well known that the figures on unemployment are subject to a number of uncertainties and difficulties of interpretation. In particular, it has been suggested that they may be affected by registration bias related to the precise conditions governing unemployment benefits. This study stops short of an analysis of this problem, which may not be fully answerable in the context of an aggregate employment equation (see footnote 4). Our results must, therefore, be read with the possibility of specification bias borne in mind.

III. The Basic Dynamics of Irish Unemployment

The unemployment rate[2] in Ireland (U) has had a mean value of 8.8 per cent (1960:3—1983:2) and a standard deviation of 3.5 per cent. It is plotted in

[2]We are here modelling the seasonally adjusted insured unemployment series, i.e., the number of persons who are insured and who register themselves as unemployed at local employment exchanges expressed as a percentage of the insured population (excluding Agriculture, Fishing and Private Domestic Service). Like all of the unemployment series this is marred by changes in definitions and questions about its relevance to economic concepts of unemployment. Some other series were explored in a limited way. The only qualitative difference to be noted was that, when normalised by interpolated labour force instead of insured population, the relative magnitude of the coefficients on A and A(−1) in the equation corresponding to (3) below were reversed, implying a possible, though small, permanent negative impact of A. However, almost all of the estimated effect of A was still transitory.

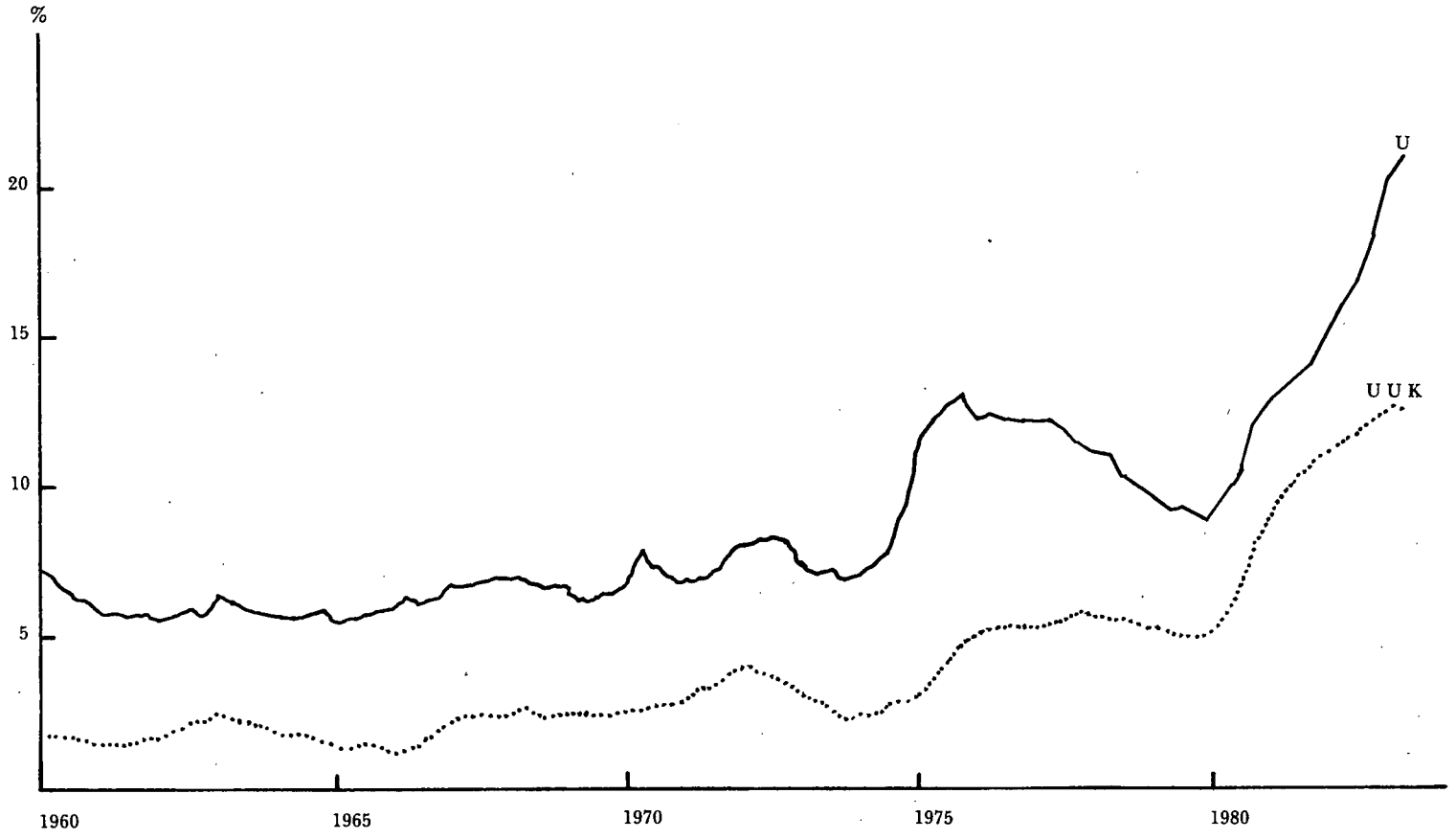


FIGURE 1: Unemployment Rates 1960-83
Ireland = U
United Kingdom = UUK

Figure 1. The pronounced upward drift is confirmed by the following simple but satisfactory autoregression, i.e. (with t-statistics in parentheses)

$$\underset{}{U} = \underset{(63.34)}{1.026U(-1)} + \underset{(4.96)}{0.496(U(-1) - U(-2))} - \underset{(1.04)}{0.149} + \underset{(3.52)}{1.515D751} \quad (1)$$

$R^2 = 0.985$ SER $= 0.416$ Durbin h $= 0.42$ 62:1 — 83:1

We have included an intercept shift dummy (D751) for the biggest outlier: the first quarter of 1975. Definitional changes in the unemployment series may have had a part in making this an exceptional observation[3], and it seems desirable in any case on statistical grounds to prevent its interfering with our estimates.

The coefficient on $U(-1)$ being greater than one (albeit not significantly so) indicates that the Irish unemployment rate has shown no tendency to settle down at, or about, a given level. This suggests that some forcing variable might be postulated to explain the upward drift. In line with existing theory we are inclined to use the unemployment rate in the United Kingdom as a forcing variable. There are good empirical as well as theoretical reasons for doing this. A visual examination of the two series (Figure 1) reveals common features, especially the sharp upturn after 1973:4. Furthermore, the difference between Irish and UK rates, which has a mean of 4.87 per cent, has a standard deviation of only 1.24 per cent, little over one-third that of the Irish rate, illustrating a strong positive correlation between the two series. The difference, U*, is plotted in Figure 2.

A satisfactory autoregression for the cross-channel difference in unemployment U* is

$$\underset{}{U^*} = \underset{(26.37)}{0.915U^*(-1)} + \underset{(3.49)}{0.360(U^*(-1) - U^*(-2))} + \underset{(2.47)}{0.414} + \underset{(4.13)}{1.625D751} \quad (2)$$

$R^2 = 0.912$ SER $= 0.373$ Durbin h $= 0.49$ 62:1 — 83:1

The estimated deterministic process for U* is stable, and the coefficient on $U^*(-1)$ is significantly different from unity. The standard error of estimate is substantially lower than that for U.

It may be noted that the fit of Equation (2) is comparable (in fact better) in terms of residual standard error to that obtained in the only other quarterly study known to the author (i.e., O'Casaide, 1983).

Rewriting Equation (2) (and ignoring the dummy) we have

$$(U^* - 4.87) = 0.915\,(U^*(-1) - 4.87) + 0.360\,(U^*(-1) - U^*(-2))$$

According to this simple mechanical scheme, each quarter sees a tendency towards closing the gap between the cross-channel difference in unemployment rates and its "normal" level (4.87), with a shrinking factor of 0.915; at the same time there is a partial persistence of last period's change to the extent of 0.36 times the previous change. Movements in the difference in

[3]What we have in mind here is the abolition of the upper income limit for eligibility about one year previously but in view of the many changes in definition over the years not too much should be made of this. Actually our main conclusion concerning the conservative properties of the cross-channel unemployment differential is not at all influenced by the decision to include this dummy.

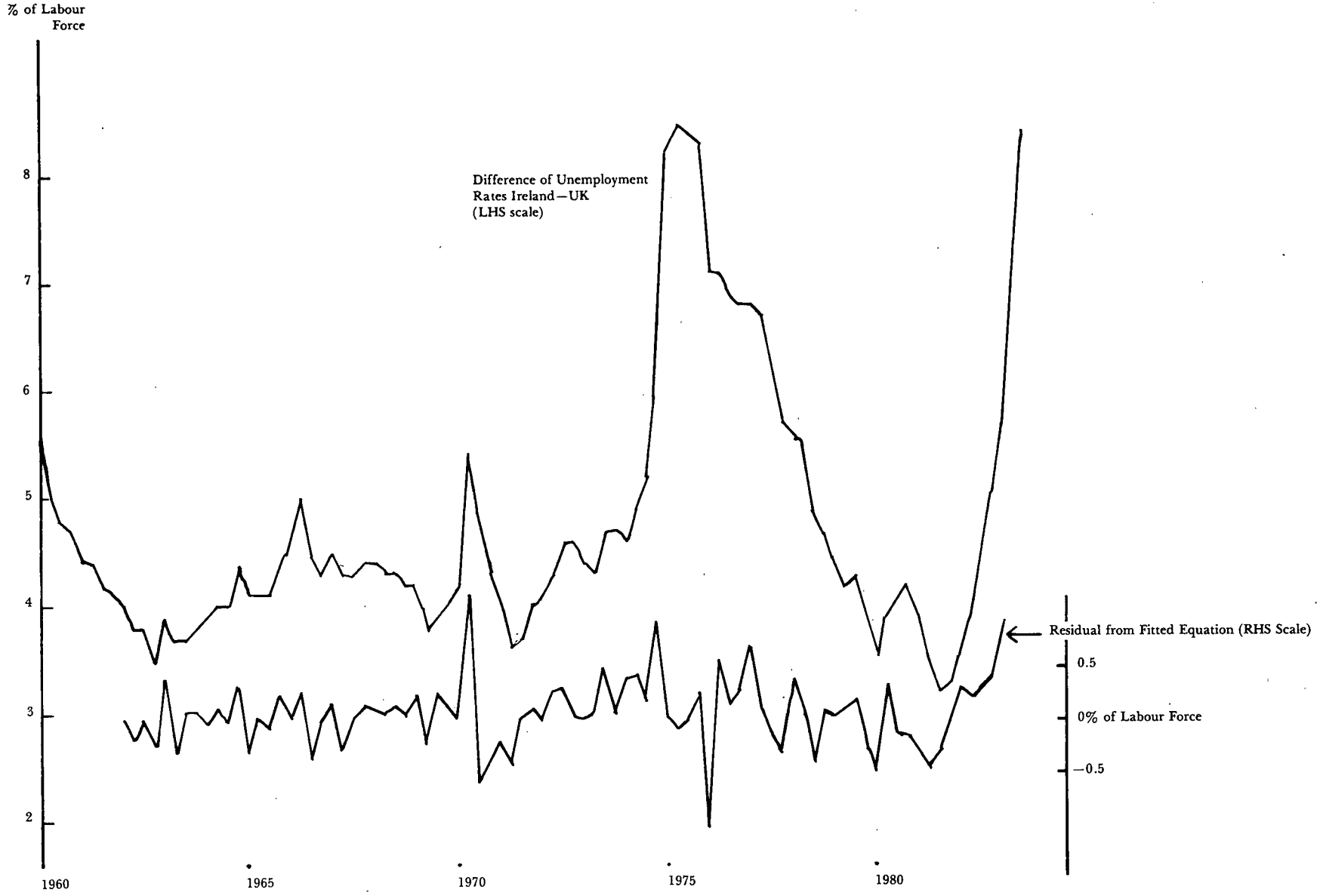


FIGURE 2: Difference of Unemployment Rates Ireland — UK 1960-1983, U* (LHS scale) Residual from Fitted Equation (RHS scale)

unemployment rates have a momentum: any movement once started tends to continue to some extent, but there is also the tendency towards equilibrium.

We can compute how the difference in unemployment rates would react to a once for all disturbance, according to this model, and an example is plotted in Figure 3. This shows how, while the Irish unemployment rate may vary independently of the UK rate, there is, according to the equation, a tendency to restore the "normal" differential.

As with all statistical models, there is a range of uncertainty about the parameters. Accordingly, it should not be thought that a constant "normal" differential has been ascertained with precision. The fact of convergence from abnormal differentials is not altered by the consideration that the exact focus of convergence is not known precisely, nor that it may change gradually over time. In the next section we address the question of influences on this "normal" differential in a preliminary way.

We do not look at unemployment in the 1950s in this paper, but it should be noted that the average cross-channel unemployment differential in that decade was significantly higher than in our sample period.

The speed of adjustment is also subject to uncertainty, and the fact that adjustment in our model seems to take several years is another reason for noting that our sample extends over only two decades.

IV. Transitory and Permanent Influences in the Cross-Channel Unemployment Differential

The autoregressive model outlined in the previous section does not allow any scope for permanent changes in the cross-channel differential. According to these equations, this differential always tends towards a fixed amount. But the equations do have residual errors which might conceal other, possibly permanent, influences on unemployment.

In order to examine this possibility we chose four potentially exogenous influences on unemployment. These were: two concepts of the Government deficit A and B (B excludes National Debt Interest), real wages in manufacturing C, employment in manufacturing industry E, and GNP growth F. In all cases but E we used smoothed, interpolated annual data. Apart from avoiding data lacunae, this should have served to help identify permanent influences.

We began by adding both current and lagged values of each of these variables in turn to Equation (2). The results are shown in Appendix Tables 1 and 2. These tables explore the possibility that, in addition to a transitory effect of these variables on unemployment there might be a permanent effect. Appendix Table 1 allows for both permanent and transitory effects by including both current and lagged values of these variables without restricting the value of their coefficients. We found that, notably, in each case current and lagged values have coefficients of approximately equal absolute magnitudes, but opposite signs. For instance, in the case of the Government deficit variable A, we estimated:

$$\underset{}{U^*} = \underset{(25.33)}{0.886\, U^*(-1)} + \underset{(3.28)}{0.33(U^*(-1) - U^*(-2))} + \underset{(2.34)}{0.40} + \underset{(4.43)}{1.70D751} - \underset{(2.00)}{1.27A} + \underset{(2.31)}{1.48A(-1)} \qquad (3)$$

$$R^2 = 0.920 \qquad SER = 0.360 \qquad DW = 2.03$$

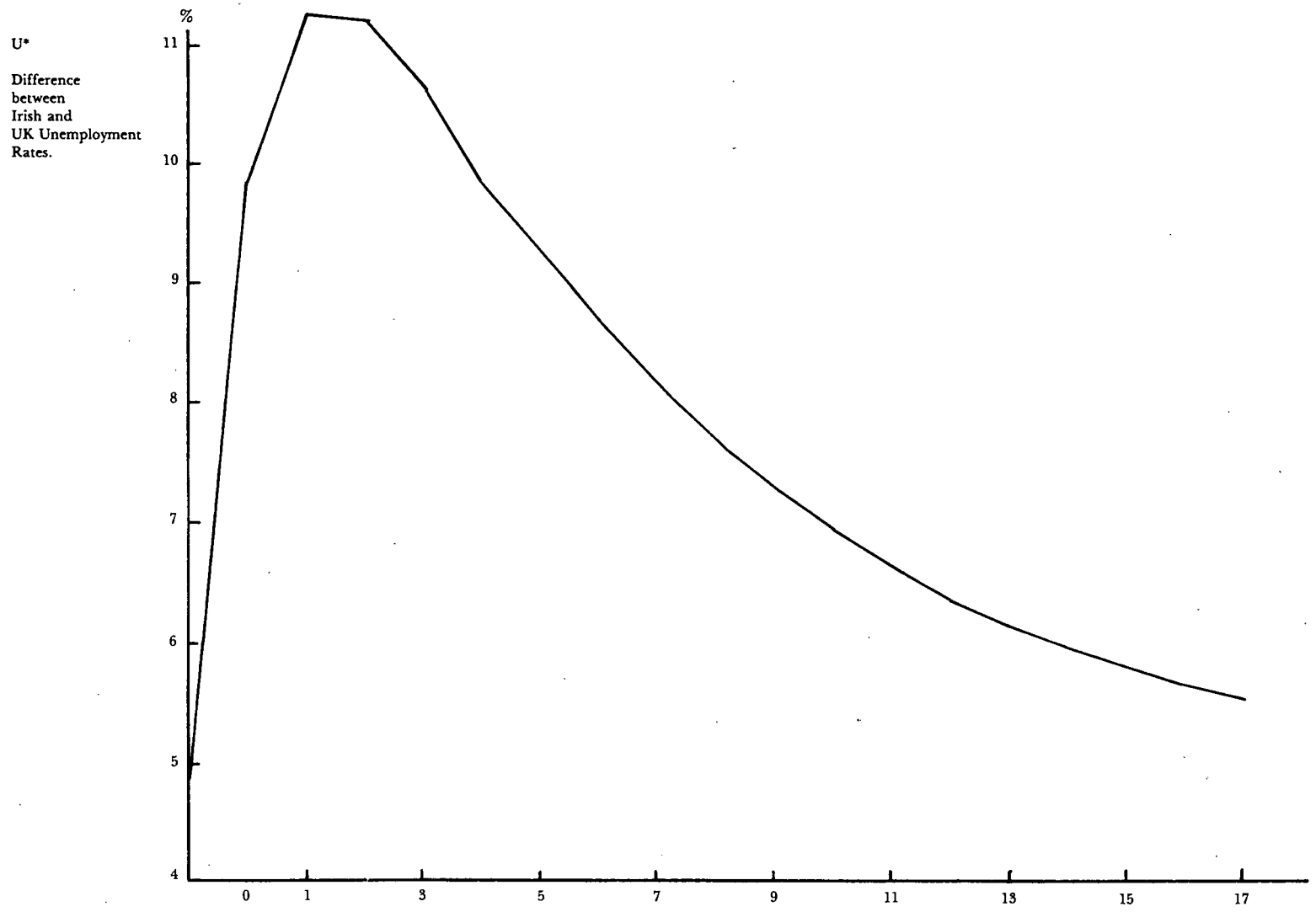


FIGURE 3: Response of Cross-Channel Unemployment Difference to Five Percentage Point Shock.
(Based on EQN 2').

The mathematical implication of equal but opposite-signed coefficients on the current and lagged values is that the impact of these variables on the unemployment differential is only a transitory one. The initial effect, even though it may be spread out over many quarters, is almost exactly offset, with a lag. The pattern of impact is along the lines of Figure 3 above.

To verify that the differences in the absolute magnitude of current and lagged effects were statistically insignificant we re-estimated the equations with the first difference (current minus lagged) of each of the extra explanatory variables instead of the current and lagged separately. The results are shown in Appendix Table 2: there is hardly any deterioration in fit, and the "marginal F-test" for the hypothesis that the deterioration in fit is not significant is failed only for Equation (3′). For each of the explanatory variables other than A, therefore, we cannot reject the hypothesis that there is no permanent effect. Consulting Equation (3), we find that, even if there is a small permanent effect for A it is in the direction of having an expansion in the deficit A *increase*, rather than reduce, unemployment.

So far as the variables we have examined are concerned, therefore, it seems from these estimates that changes in them will only have a transitory effect. That is in line with the assumptions of the theoretical framework of Geary and McCarthy (1976), (cf. McCarthy, 1979; Honohan, 1982). This is the first time that that hypothesis has been subjected to a satisfactory test. Nevertheless, the results should be treated with caution, especially since interpolated data were used. Even though we believe that interpolation has not in any way helped to produce the effects we have found — on the contrary, it probably made them less evident — nevertheless the data series cannot be considered ideal. All the same, as indicated above, relatively smooth series such as we have used reflecting long-run expected or "permanent" movements are to be preferred in this context to series dominated by transitory movements. (The alternative, available for A, of using cash figures for Exchequer returns seemed, on limited investigation, to yield comparable results.)

Reviewing Appendix Table 2, we see that the wage variable C and the GNP variable F are not significant in first differences. Furthermore, C has what might be regarded as an unexpected sign: an increase in wages seems to be associated with lower unemployment. This procyclical evolution of wages is familiar from other countries; actually it does not capture a causal path from wages but is due to a simultaneous equations bias. To see this we first estimate Equation (8), as in Appendix Table 3, and then, using instruments for ΔC, (8′). The significance of ΔC and ΔF falls dramatically between the two regressions[4].

[4]It is possible that cross-channel wage differentials could play a role on the side of labour supply, as has been suggested by many authors. This was not explored here in view of the particular difficulty of placing reliance on available data as truly representing expected cross-channel wage differentials applicable to any given segment of the labour force.

Another possibility is that unemployment benefits could be a relevant variable. O'Casaide (1983) examined this question and concluded that the magnitude of the effect of unemployment benefits was considerable. In an extended version of this paper (available from the author) it is shown that much of this effect hinges on the rather special functional form used by O'Casaide. When his variables (which he kindly made available) are added to our best equation, the estimated impact is small, largely transitory and depends heavily on one observation: 1974:4. The role of benefits needs further exploration, and is unlikely to be revealed by an aggregative approach such as the present one; cf. Hughes and Walsh (1983).

We are left with the Government deficit ΔA (or ΔB) and manufacturing employment growth ΔE as variables to be included. Our best equations so far are thus (6′) and (9):

$$U^* = \underset{(27.68)}{0.908}\, U^*(-1) + \underset{(2.18)}{0.224}\,(U^*(-1) - U^*(-2)) + \underset{(3.03)}{0.483} + \underset{(3.73)}{1.421}\, D751 - \underset{(1.72)}{1.053}\,\Delta A - \underset{(3.27)}{0.648}\,\Delta E \qquad (9)$$

$$R^2 = 0.926 \qquad SER = 0.347 \qquad \text{Durbin h} = 0.19$$

The residuals from (9) are plotted in Figure 2 (right-hand scale)[5]. It is clear that we are still not capturing several of the high frequency fluctuations: especially at 1970:2 and implicitly in the post-sample observation 1983:2. (Coefficient estimates seem generally robust to inclusion of an intercept dummy for 1970:2.)

To give an impression of the magnitude of the estimated effects of ΔA and ΔE, we may note that ΔE is scaled by the labour force, so that, by (9), an increase in manufacturing employment equivalent to 10 per cent of the labour force reduces the unemployment rate by 6.48 percentage points at first. ΔA is expressed as a fraction of GNP, so an increase in the Government's deficit equivalent to 10 per cent of GNP will lower the unemployment rate by 10.53 percentage points at first.

V. Refining the Dynamic Structure

It remains to test the proposed dynamic structure against more general hypotheses and to examine alternative structures. Two alternatives suggested themselves. The first is a simple error correction model, the second a first-order autocorrelation in the residuals in lieu of the second lag on U. The estimated equations for these, and for a rather general linear lag structure, are reported in Appendix Table 4.

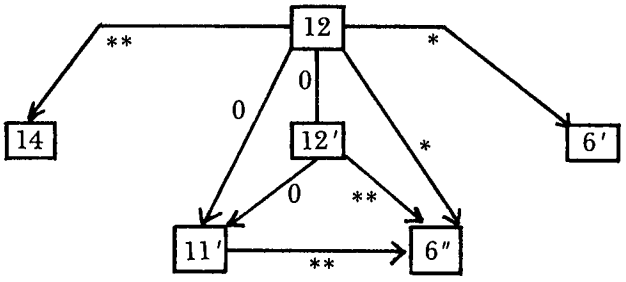
It would be possible to test formally each of the equations in Appendix Table 4 against the others. We have simplified slightly by confining attention to six equations which can be placed in a nested structure as shown in Figure 4.

The sequence of F-tests reveals a preference for the error correction model (11′). Either this equation or (11) should probably be taken as the best representation of the dynamic structure, though comparison of the standard errors indicates that the margin of advantage is small[6]. The error correction model essentially weakens the assumption that the immediate response of Irish unemployment to shocks in British unemployment tends to be one hundred per cent, while retaining the assumption that the ultimate response will be so. Equation (11) indicates that a change in the UK unemployment rate tends to be associated with a contemporaneous change in the Irish rate of about one half the magnitude. This reduced contemporaneous effect is the main difference between (11) and (6′):

[5]This seems much to be preferred to the usual practice of plotting actual against fitted — a procedure which often deceives the eye.

[6]In the error correction model equation (11) the variable ΔA is not quite significant at five per cent. Including it does not alter the other coefficients by much.

FIGURE 4: Nested Hypothesis Testing
(*denotes significant at 5%, **at 1%, 0 not significant at 5%).



This figure indicates whether or not the various nested hypothesis tests were satisfied. The numbers denote equations. An arrow indicates a test of a more restricted equation (at the head of the arrow) against a less restricted (at the end of the arrow). Asterisks denote significant F-statistics (*: 5% **: 1%) indicating failure of the restriction. A zero means that the restriction could not be rejected at 5%.

$$\Delta U = \underset{(3.27)}{0.501} + \underset{(3.86)}{0.586}\,\Delta UUK - \underset{(2.55)}{0.83}U^*(-4) + \underset{(3.50)}{1.28}D751 - \underset{(4.57)}{1.037}\,\Delta E \qquad (11)$$

$$R^2 = 0.633 \qquad SER = 0.339 \qquad DW = 1.77 \qquad Q(12) = 12.2$$

(The Box-Ljung Q-statistic indicates no rejection of serial independence in the residuals.) As seen from comparison of (11) and (11′), the choice of lag length for U* does not really alter things much. In practice, the dynamic response of the two systems (6′ and 11) to shocks is little different, as can be seen from Figure 5.

For Equation (11), the estimated focus or "normal" differential is 6.04 per cent — higher than for Equation (2) because of the inclusion of ΔE. To check for structural stability of the equation over time, we split the sample in two halves. The Chow test was significant at 5 per cent but not at 1 per cent implying some evidence of instability. The estimated "normal" differentials in the two subperiods were 4.67 and 6.53 per cent. This gives an idea of the somewhat imprecise nature of this number.

A byproduct of these tests is the statistical confirmation (by the comparison of (14) with (12)), that UK unemployment is a relevant variable in the determination of Irish unemployment.

As for the autocorrelated errors model 13, an approximate F-test on the restriction $\rho = 0$ is not rejected, thus providing further indirect support for the error correction model.

VI. Conclusion

Although the Irish unemployment rate is unusually high by comparison with

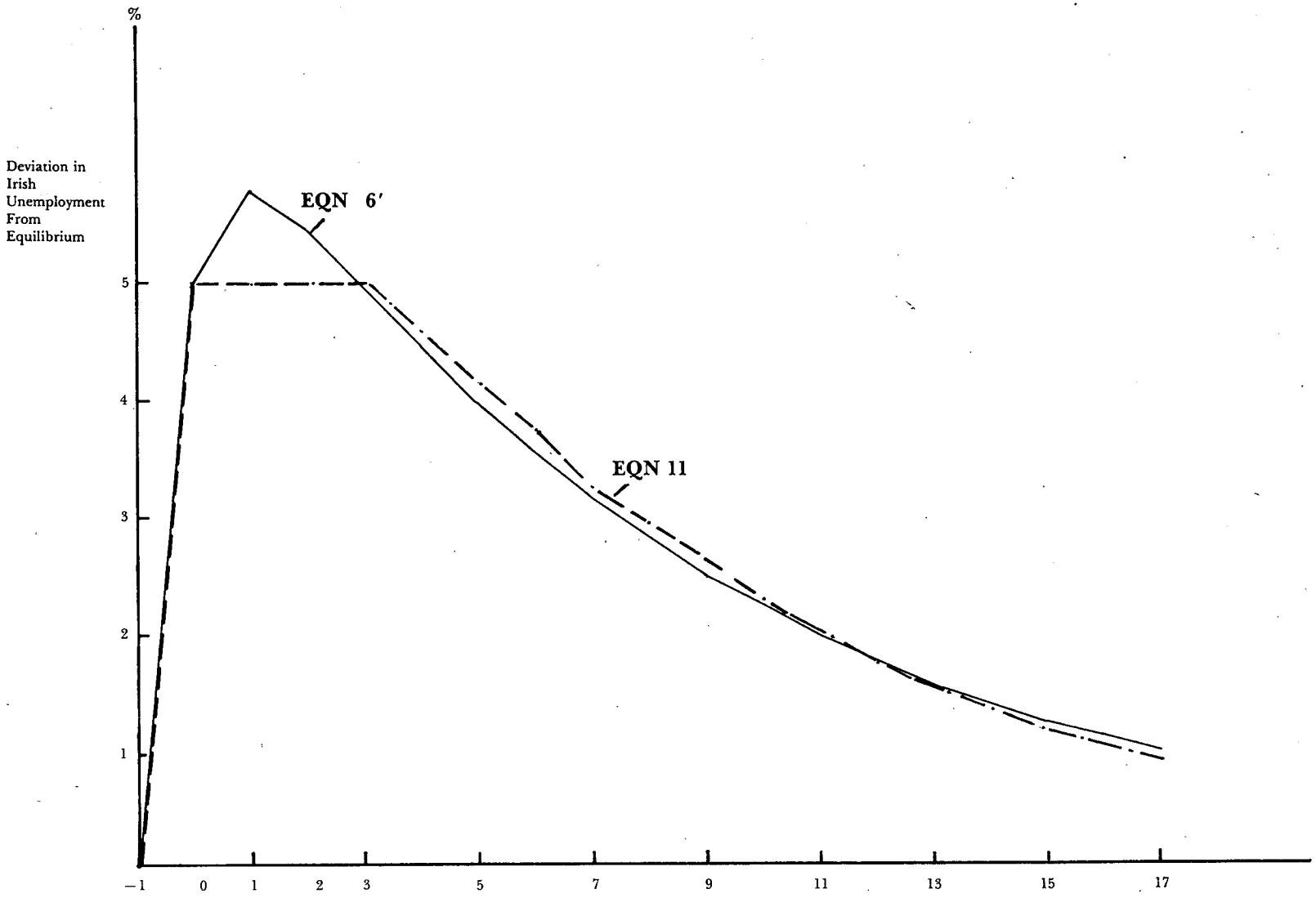


FIGURE 5: Response of Irish Unemployment to Five Percentage Point Disturbance (From Equilibrium)

that in the UK at the time of writing, we believe the past pattern of a closing of unusually large gaps between the two rates may reassert itself in the future.

This closing of the gap has sometimes in the past been facilitated by an upsurge in the demand for labour, as in the late 1970s. To that extent the convergence may have been merely coincidental. Furthermore, there have been substantial and broadly parallel changes in the level of social security benefits over the past two decades, and also in social attitudes. However, if there is a response of migration to unemployment differentials, then the convergence of evolution in unemployment rates here and in the UK may not be purely fortuitous.

While we are inclined to think that this is the case, and that the migration story outlined in the introduction is the chief explanation for the conservative properties of the cross-channel unemployment differential, it has to be admitted that our results need not necessarily be interpreted in this way.

After all, a weakening demand for labour could have occurred simultaneously in both countries, due to a common external cause. And a greater tendency to spend longer on the dole voluntarily could have arisen due to internationally correlated changes in attitudes and in the levels of benefit. But the relatively long lags which we encounter in the response of Irish to UK unemployment would seem to be somewhat more in keeping with the migration story.

The low level of unemployment in the UK in the 1960s may have facilitated migration flows to be more responsive to labour market conditions at home than could be expected now. And a weakening of the traditional channels of communication with the UK labour market, resulting from the sharply reduced emigration of the 1970s, could also modify migration behaviour in the future. Only time will tell whether our description of the past two decades will have relevance for the years ahead.

Finally, we would caution against drawing unduly strong policy conclusions from the simple model presented above. The full story about unemployment is much more complex and the objective here has been to highlight some salient features. In particular, it has been pointed out that unemployment in the 1950s was, on average, much higher, relative to the UK, than in the last 20 years which we have studied. The whys and wherefores of that fact are another day's work.

References

BRADLEY, J., C. DIGBY, J. D. FITZGERALD, O. KEEGAN, 1981. "Description, Simulation and Multiplier Analysis of the MODEL-80 Econometric Model of Ireland," Department of Finance, *Research Paper 2/81.*

GEARY, P. T., and C. McCARTHY, 1976. "Wage and Price Determination in a Labour Exporting Economy: The Case of Ireland", *European Economic Review.*

GEARY, R. C., and J. G. HUGHES, 1970. *Internal Migration in Ireland,* Dublin: The Economic and Social Research Institute, Paper No. 54.

HONOHAN, P., 1982. "Is Ireland a Small Open Economy?", *Administration,* Vol. 29, No. 4.

HUGHES, G., and B. M. WALSH, 1983. "Unemployment Duration, Aggregate Demand and Unemployment Insurance — A Study of Irish Live Register Survival Probabilities 1967-1978", *The Economic and Social Review,* Vol. 14, No. 2, January.

KEENAN, J. G., 1981. "Irish Migration, All or Nothing Resolved?", *The Economic and Social Review,* Vol. 12, No. 3, April.

McCARTHY, C., 1979. "The Impact of Job Creation on Unemployment and Emigration", Central Bank of Ireland, *Quarterly Bulletin,* Summer.

O'CASAIDE, C., 1983. "The Determinant of Non-Agricultural Unemployment in Ireland 1966-80", Central Bank of Ireland, *Technical Paper 6/RT/83*.

WALSH, B. M., 1974. *The Structure of Unemployment in Ireland*, 1954-1972, Dublin: The Economic and Social Research Institute, Paper No. 77.

WALSH, B. M., 1977. "Unemployment Compensation and the Rate of Unemployment: The Irish Experience" in H. Grubel and M. Walker, (eds.) *Unemployment Insurance*, Vancouver: The Fraser Institute.

APPENDIX TABLE 1: Role of Additional Explanatory Variables: Levels. (Dependent Variable: Difference in Unemployment Rates U*)

1962:1 — 1983:1

	(3)	(4)	(5)	(6)	(7)
Additional Variable:	A	B	C	E	F
U*(−1)	0.886	0.883	0.904	0.920	0.909
	(25.33)	(24.99)	(25.17)	(27.8)	(25.47)
U*(−1) − U*(−2)	0.33	0.33	0.35	0.23	0.34
	(3.28)	(3.26)	(3.39)	(2.15)	(3.28)
D751	1.70	1.68	1.60	1.32	1.55
	(4.43)	(4.39)	(4.08)	(3.45)	(3.89)
Constant	0.40	0.46	0.24	0.59	0.27
	(2.34)	(2.79)	(0.97)	(1.15)	(1.35)
Additional Variable: Current	−1.268	−1.301	−0.96	−0.70	0.41
	(2.00)	(2.03)	(0.79)	(3.36)	(0.87)
Additional Variable: Lagged	1.481	1.560	1.07	0.69	−0.44
	(2.31)	(2.40)	(0.90)	(3.41)	(0.95)
R^2	0.920	0.920	0.915	0.923	0.915
SER	0.360	0.360	0.372	0.353	0.372
DW	2.03	2.04	1.904	1.89	1.91
Durbin h	<0	<0	0.48	0.53	0.44

A = Government deficit.
B = Government deficit excluding National Debt interest.
C = Real wages in manufacturing industry.
E = Employment in manufacturing industry.
F = GNP growth.

APPENDIX TABLE 2: Role of Additional Explanatory Variables: Changes. (Dependent Variable: Difference in Unemployment Rates U*)

1962:1 — 1983:1

	(3′)	(4′)	(5′)	(6′)	(6″)	(7′)
Additional Variable:	ΔA	ΔB	ΔC	ΔE	ΔE	ΔF
U*(−1)	0.903	0.901	0.914	0.919	0.930	0.919
	(26.03)	(25.93)	(26.36)	(28.15)	(28.16)	(26.22)
U*(−1) − U*(−2)	0.34	0.34	0.35	0.23		0.34
	(3.36)	(3.34)	(3.33)	(2.24)		(3.23)
D751	1.73	1.73	1.60	1.32	1.45	1.56
	(4.42)	(4.44)	(4.08)	(3.47)	(3.78)	(3.87)
Constant	0.48	0.49	0.44	0.43	0.38	0.42
	(2.86)	(2.90)	(2.59)	(2.70)	(2.38)	(2.49)
Additional Variable	−1.258	−1.344	−1.27	−0.68	−0.84	−0.422
	(1.95)	(2.06)	(1.08)	(3.42)	(4.41)	(0.90)
R^2	0.916	0.917	0.913	0.923	0.918	0.913
SER	0.367	0.366	0.373	0.351	0.359	0.374
DW	1.98	2.00	1.88	1.89	1.54	1.88
Durbin h	0.10	0.00	0.58	0.53	2.23	0.58
Marginal F	4.65*	3.88	0.72	0.16		2.17

*Significant at 5% (but not at 1%)
Δ denotes first difference

APPENDIX TABLE 3: Multiple Additional Explanatory Variables (Dependent Variable: Difference in Unemployment Rates U*) 1962:1—1983:1

	(8)	(8′)	(9)	(10)
Method	OLS	IV	OLS	OLS
U*(−1)	0.892 (27.28)	0.898 (26.07)	0.908 (27.68)	0.930 (28.16)
U*(−1) − U*(−2)	0.19 (1.90)	0.20 (1.93)	0.224 (2.18)	
D751	1.49 (4.00)	1.48 (3.94)	1.421 (3.73)	1.454 (3.78)
Constant	0.57 (3.58)	0.53 (3.08)	0.483 (3.03)	0.381 (2.38)
ΔA	−1.629 (2.56)	−1.482 (2.04)	−1.053 (1.72)	
ΔC	−3.06 (2.47)	−2.25 (0.94)		
ΔE	−0.82 (3.86)	−0.79 (3.45)	−0.648 (3.27)	−0.843 (4.41)
ΔF	−0.933 (1.77)	−0.770 (1.15)		
R^2	0.932	0.931	0.926	0.918
SER	0.337	0.338	0.347	0.359
DW	2.01	2.01	1.96	1.54
Durbin h	<0	<0	0.19	1.74

APPENDIX TABLE 4: Refining the Dynamic Structure 1962:1—1983:1

(11): $\Delta U = 0.501 + 0.586\Delta UUK - 0.083U^*(-4) + 1.28D751 - 1.037\Delta E$
(3.27) (3.86) (2.55) (3.50) (4.57)

$R^2 = 0.633$ SER = 0.339 DW = 1.77

(11'): $\Delta U = 0.407 + 0.566\Delta UUK - 0.061U^*(-1) + 1.29D751 - 1.192\Delta E$
(2.65) (3.68) (1.90) (3.45) (5.39)

$R^2 = 0.621$ SER = 0.345 DW = 1.75

(12): $U = 0.350 + 1.129U(-1) - 0.206U(-2) + 0.533UUK - 0.652UUK(-1)$
(2.21) (11.11) (2.01) (2.38) (1.57)

$+ 0.227UUK(-2) + 1.305D751 - 0.927\Delta E$
(0.99) (3.51) (3.91)

$R^2 = 0.990$ SER = 0.335 DW = 2.10

(12'): $U = 0.319 + 0.934U(-1) + 0.480UUK - 0.385UUK(-1) + 1.402D751 - 1.11\Delta E$
(2.01) (29.69) (3.03) (2.34) (3.76) (4.99)

$R^2 = 0.990$ SER = 0.340 DW = 1.80 Durbin h = 0.96

(13): $U^* = 0.429 + 0.921U^*(-1) + 1.308D751 - 0.793\Delta E$, $\rho = 0.20$
(2.23) (23.29) (3.61) (3.84)

$R^2 = 0.884$ SER = 0.353 DW = 1.88 Durbin h = 0.59

(14): $U = 0.049 + 1.014U(-1) + 0.228U(-2) + 1.005D751 - 1.25\Delta E$
(0.37) (71.00) (2.27) (2.60) (5.24)

$R^2 = 0.988$ SER = 0.361 DW = 2.06

Method: OLS except 13: GLS Auto.

STATISTICAL APPENDIX

	Output Indicators				Employment		Output per Head	
	1	2	3	4	5	6	7	8
	Manufacturing	Transportable Goods	Electricity Output	Cement Sales	Manufacturing	Transportable Goods	Manufacturing	Transportable Goods
	1973 = 100	1973 = 100	G.W.H.	000 Metric Tons	000's	000's	1973 = 100	1973 = 100
1977	115.9	115.4	9127	1516.5	212.6	223.7	112.6	111.8
1978	125.6	125.1	9815	1751.7	216.9	228.1	119.6	118.9
1979	134.9	134.6	10853	2067.8	226.4	238.0	123.1	122.6
1980	133.7	133.5	10733	1814.9	224.5	236.3	123.0	122.5
1981	136.6	134.5	10767	1812.5	217.0	228.7	130.0	127.5
1982	135.3	133.9	10792	1486.1	209.5	220.5	133.4	131.6
1983	144.9	142.6	11039	1382.4	196.2	206.7	152.5	149.5
Quarterly Averages or Totals								
1980 I	134.9	133.2	3022	424.8	227.4	238.7	122.6	126.1
II	143.8	144.8	2502	495.0	225.7	238.4	131.6	131.7
III	125.3	126.5	2538	476.9	223.4	235.3	114.7	116.5
IV	131.2	129.8	2851	418.2	221.4	232.7	122.4	120.9
1981 I	130.6	128.7	2885	410.2	217.6	229.0	124.0	121.8
II	145.2	142.9	2546	516.6	216.2	228.5	138.7	135.6
III	131.9	131.9	2408	488.8	217.2	229.4	125.5	124.6
IV	138.7	134.4	2928	396.9	216.8	227.7	132.2	127.9
1982 I	133.7	130.1	2954	335.2	213.1	224.2	129.6	125.8
II	143.6	142.8	2514	436.2	210.5	222.7	140.9	139.0
III	126.5	127.9	2425	405.9	209.0	219.9	125.0	135.9
IV	137.8	134.8	2899	308.8	205.2	215.2	138.7	135.8
1983 I	142.1	139.1	2990	298.1	198.3	208.4	148.0	144.7
II	149.5	146.3	2650	367.1	195.8	207.2	157.7	153.0
III	136.9	137.6	2470	371.5	196.5	207.3	143.9	143.9
IV	151.3	147.5	2929	345.7	194.1	203.9	161.0	156.8
1984 I			3136	271.5				
Quarterly Averages or Totals Seasonally Corrected								
1980 I	138.5	138.1	2718	494.1	228.3	240.2	125.3	124.6
II	135.2	136.2	2655	445.4	226.3	237.9	123.4	124.1
III	132.0	130.6	2670	434.5	223.0	234.8	122.3	120.6
IV	130.1	130.0	2674	457.8	220.3	232.2	122.0	120.8
1981 I	132.9	132.3	2606	482.5	218.5	230.5	125.7	124.4
II	136.5	134.3	2708	461.2	216.8	228.1	130.1	127.6
III	139.0	136.4	2729	444.5	216.7	228.9	132.5	129.2
IV	137.9	135.0	2737	408.8	215.7	227.1	132.1	128.8
1982 I	135.1	132.6	2676	398.2	214.1	225.7	130.4	127.3
II	135.2	134.2	2674	394.9	211.2	222.4	132.2	130.8
III	133.8	132.8	2737	368.2	208.5	219.3	132.6	131.3
IV	136.9	135.3	2704	340.6	204.1	214.7	138.6	136.6
1983 I	143.6	141.8	2720	316.4	199.2	209.8	148.9	146.5
II	140.7	137.4	2816	336.6	196.4	206.9	148.0	144.0
III	145.3	143.4	2786	344.1	196.0	206.7	153.1	150.4
IV	150.7	148.3	2731	373.8	193.1	203.4	161.2	158.0
1984 I			2848	313.9				

Unemployment	Prices						
9	10	11	12	13	14	15	
Live Register Av. Monthly	Consumer Price Index	Agricultural Price Index	Import Unit Value	Export Unit Value	Terms of Trade	Price of Stocks + Shares	
000's	Nov. 1975 = 100	1975 = 100	1975 = 100	1975 = 100	1975 = 100	1975 = 100	
106.4	130.0	153.9	139.3	142.3	102.1	133.1	1977
99.2	139.9	174.0	146.2	151.6	103.7	201.5	1978
89.6	158.5	184.2	165.9	165.0	99.5	215.6	1979
101.5	187.3	179.3	195.6	179.5	91.8	212.0	1980
127.9	225.6	213.1	232.4	208.4	89.7	219.9	1981
148.2	264.2	232.2	249.4	231.5	92.8	179.9	1982
192.7	291.8	247.4				223.7	1983
Quarterly Averages or Totals							
92.0	173.5	180.4	183.6	174.9	95.3	206.4	1980 I
94.0	186.3	186.3	192.6	181.0	94.0	206.1	II
103.9	191.8	176.2	194.8	183.4	94.1	211.3	III
116.0	197.7	179.0	205.3	185.9	90.6	224.2	IV
125.8	209.9	202.9	221.4	192.0	86.7	218.9	1981 I
124.3	218.1	213.2	231.3	204.8	88.5	235.3	II
126.8	230.4	213.9	236.8	211.5	89.3	223.1	III
134.5	243.8	220.0	236.6	216.2	91.4	202.7	IV
146.8	249.5	237.0	243.5	222.2	91.3	192.3	1982 I
149.0	263.9	235.3	248.4	231.1	93.0	174.6	II
159.0	269.5	230.2	254.0	235.0	92.5	175.5	III
171.6	273.8	229.6	255.6	238.3	93.2	178.3	IV
188.3	280.6	241.9	247.0	237.3	96.1	172.0	1983 I
188.1	288.3	245.9	254.5	247.7	97.3	206.1	II
193.0	296.5	250.0	268.8	257.0	96.7	249.7	III
201.3	302.0	249.7	275.3	263.3	95.6	267.2	IV
215.2	309.1					309.6	1984 I
Quarterly Averages or Totals Seasonally Corrected							
87.5	174.0	177.4	No	No	No	No	1980 I
95.1	185.6	179.0	Seasonal	Seasonal	Seasonal	Seasonal	II
106.8	191.3	179.2	Pattern	Pattern	Pattern	Pattern	III
116.6	198.2	186.9					IV
121.7	210.8	198.7					1981 I
125.5	217.2	205.3					II
129.5	229.7	218.0					III
134.7	244.4	229.4					IV
142.2	250.6	231.9					1982 I
150.9	262.9	227.3					II
161.5	268.6	234.7					III
171.8	274.4	238.7					IV
183.7	282.0	236.5					1983 I
190.0	287.3	237.6					II
195.6	295.5	255.1					III
201.5	302.6	259.6					IV
210.1	311.3						1984 I

	Money Earnings Weekly Averages		Real Earnings		Consumption Indicators		
	16	17	18	19	20	21	22
	Manufacturing	Transportable Goods	Manufacturing	Transportable Goods	New Cars Registered	Retail Sales Value	Retail Sales Volume
	1973 = 100	1973 = 100	1977 = 100	1977 = 100	Total	1975 = 100	1975 = 100
1977	206.3	206.1	100.0	100.0	82310	143.0	106.9
1978	236.2	235.7	106.4	106.3	105582	170.4	116.4
1979	271.3	271.1	107.9	107.9	95938	197.9	120.3
1980	321.2	321.0	108.1	108.1	91032	226.5	119.3
1981	373.8	372.6	104.4	104.2	104645	268.8	118.8
1982	419.1	419.8	100.0	100.2	72603	293.4	112.1
1983					60486	311.6	107.7
Quarterly Averages or Totals							
1980 I	302.3	301.5	109.8	109.5	34241	203.3	115.4
II	318.3	318.6	107.7	107.7	23589	224.0	119.1
III	318.8	318.2	104.7	104.5	20517	223.9	115.6
IV	345.2	345.6	110.0	110.3	12592	254.7	127.3
1981 I	346.2	344.6	103.9	103.6	35696	238.8	113.3
II	373.3	371.4	107.9	107.4	29306	264.1	119.8
III	383.8	385.2	104.9	105.5	32351	278.8	120.7
IV	391.7	389.2	101.2	100.7	7292	293.5	121.2
1982 I	393.3	390.6	99.3	98.7	28114	269.5	108.4
II	417.6	423.0	99.7	101.1	21223	291.3	112.1
III	424.0	423.6	99.1	99.1	14012	289.2	108.6
IV	441.3	441.9	101.6	101.8	9981	323.6	119.2
1983 I	440.6	440.8	98.9	99.1	29542	295.6	105.5
II	458.4	463.1	100.2	101.3	12160	301.4	104.9
III	476.3	475.9	101.2	101.2	11924	305.3	104.4
IV					6860	344.0	116.0
Quarterly Averages or Totals Seasonally Corrected							
1980 I	307.1	307.5	111.0	111.1	25027	218.0	122.2
II	315.5	314.8	107.1	106.6	21166	221.9	118.6
III	319.3	317.4	104.9	104.5	21570	225.2	116.0
IV	342.3	343.8	109.3	109.9	25128	242.2	120.5
1981 I	351.7	351.6	104.8	105.0	24790	253.9	120.1
II	370.1	367.0	107.4	106.4	26598	261.8	119.3
III	384.4	384.2	105.1	105.4	34184	278.0	120.1
IV	388.4	387.2	100.7	100.5	15255	279.1	114.7
1982 I	399.7	398.7	100.1	99.9	19242	286.4	114.8
II	413.5	417.3	99.3	100.2	19314	288.1	111.4
III	425.3	423.4	99.3	99.0	15074	291.9	109.5
IV	437.1	438.9	101.1	101.6	18407	308.0	112.8
1983 I	447.9	450.0	99.6	100.3	19963	312.4	111.1
II	453.6	456.5	99.8	100.4	11400	290.8	105.1
III	478.1	476.1	101.4	101.1	12673	308.8	105.7
IV					14406	329.6	110.1

	Government		Monetary Developments				
23	24	25	26	27	28	29	
Current Revenue	Current Expenditure	Current Deficit	Money Supply M3	Licensed Banks Domestic Credit Government	Non-Gov.	External Reserves	
£m	£m	£m	£m End Period	£m End Period	£m End Period	£m End Period	
1757	1966	209	3257.3	836.0	2639.5	1200.7	1977
2023	2421	398	4117.2	902.6	3475.2	1251.9	1978
2384	2905	521	4986.3	1005.9	4350.5	974.7	1979
3155	3708	553	5828.6	1132.6	5050.7	1346.0	1980
3973	4796	823	6972.7	1277.4	6053.6	1473.1	1981
4908	5896	988	7876.0	1564.7	6677.4	1594.0	1982
5711	6671	960				2014.8	1983
Quarterly Totals			Monthly Totals				
751	777	26	5003.1	875.8	4607.8	960.7	1980 I
783	1013	230	5103.7	952.5	4585.8	979.7	II
726	870	144	5447.8	1123.1	4773.0	1164.4	III
895	1047	152	5828.6	1132.6	5050.7	1346.0	IV
871	1076	205	6147.6	1124.1	5381.7	1322.7	1981 I
936	1188	252	6369.8	1201.5	5511.6	1191.7	II
970	1245	275	6679.8	1217.8	5785.0	1071.8	III
1196	1287	91	6972.7	1277.4	6053.6	1473.1	IV
1044	1437	393	7098.2	1334.1	6366.8	1406.0	1982 I
1176	1474	298	7141.8	1369.9	6347.9	1464.6	II
1184	1457	267	7498.7	1510.7	6458.1	1521.0	III
1505	1534	29	7876.0	1564.7	6677.4	1594.0	IV
1220	1646	426	8006.4	1510.3	7058.5	1235.1	1983 I
1405	1654	249	8106.3	1638.4	7055.1	1343.2	II
1440	1560	120	8208.4	1749.7	7432.9	1914.4	III
1646	1811	165				2014.8	IV
1290	1719	429					1984 I
Quarterly Totals (S.C.)			Monthly Totals (S.C.)				
709	742	39	5034.6	No	4494.9	834.8	1980 I
816	1020	204	5198.1	Seasonal	4548.0	1050.3	II
782	916	144	5504.6	Pattern	4730.6	1169.4	III
881	1054	173	5799.9		5031.4	1235.2	IV
791	996	204	6084.1		5248.9	1291.8	1981 I
984	1214	230	6406.5		5478.8	1268.9	II
1032	1313	281	6691.2		5144.3	1076.7	III
1186	1296	110	6820.9		6022.8	1352.6	IV
965	1340	383	7032.3		6207.1	1375.1	1982 I
1215	1492	277	7183.4		6318.7	1554.7	II
1281	1509	229	7518.9		6420.7	1528.6	III
1402	1530	128	7702.5		6637.3	1463.7	IV
1198	1599	401	7935.8		6880.7	1208.5	1983 I
1424	1631	207	8155.1		7024.2	1424.4	II
1571	1611	40	8237.8		7394.3	1920.2	III
1487	1796	309					IV
1392	1694	302					1984 I

		Visible Trade Indicators					Exchange Rates	
		30	31	32	33	34	35	36
		Imports (Value)	Exports (Value)	Import Excess (Value)	Imports (Volume)	Exports (Volume)	Effective Index	Sterling
		£m	£m	£m	1975 = 100	1975 = 100	Dec. 1971 = 100	Per IR£
1977		3090.9	2518.2	572.7	129.9	122.2	77.01	1.0000
1978		3713.1	2963.2	749.9	148.8	134.8	77.57	1.0000
1979		4817.5	3501.1	1316.4	170.3	146.5	77.08	0.9646
1980		5419.6	4130.9	1288.7	162.6	158.9	74.01	0.8862
1981		6578.4	4777.6	1800.8	166.0	158.3	67.75	0.8002
1982		6812.3	5687.9	1124.4	160.3	169.8	67.35	0.8125
1983		7363.0	6936.0	427.0			65.13	0.8222
		Monthly Averages						
1980	I	476.6	319.6	157.0	182.8	150.5	75.85	0.9276
	II	440.0	334.4	105.6	160.9	153.2	74.71	0.9026
	III	433.2	356.6	76.6	156.6	161.3	74.65	0.8905
	IV	458.1	363.1	95.0	157.2	162.0	70.75	0.8231
1981	I	511.7	339.6	172.1	162.7	144.1	67.24	0.7686
	II	557.2	405.5	151.7	169.6	162.0	66.57	0.7730
	III	572.6	419.4	153.2	170.4	161.8	67.85	0.8177
	IV	549.4	450.7	98.7	163.4	170.3	69.32	0.8407
1982	I	597.7	411.2	126.4	172.8	153.3	67.71	0.8126
	II	589.5	503.7	85.8	167.1	180.7	67.72	0.8171
	III	532.5	475.0	57.5	147.6	173.2	66.88	0.8022
	IV	550.8	506.5	44.3	151.7	176.3	67.10	0.8185
1983	I	585.8	471.5	114.3	167.1	164.8	69.46	0.8943
	II	592.1	575.8	16.4	163.8	192.6	65.14	0.8171
	III	602.4	606.8	−4.4	157.8	195.6	63.28	0.7894
	IV	673.2	658.9	14.3	172.2	207.6	62.74	0.7896
1984	I	744.1	654.2	89.9			62.58	0.7951
		Monthly Averages. Seasonally Corrected.						
1980	I	466.5	346.0	120.5	178.7	165.2	No Seasonal Pattern	No Seasonal Pattern
	II	423.8	334.8	89.0	154.8	155.6		
	III	453.3	349.0	104.3	165.2	158.0		
	IV	464.4	349.2	115.2	158.8	152.2		
1981	I	504.1	361.0	143.1	158.7	154.8		
	II	537.6	406.9	130.7	164.0	160.4		
	III	597.7	414.2	183.5	179.1	160.5		
	IV	555.4	434.0	121.4	164.0	162.6		
1982	I	586.8	436.4	143.9	169.7	163.4		
	II	573.3	500.5	72.8	163.7	181.3		
	III	547.4	468.8	78.6	152.0	165.4		
	IV	567.1	488.2	79.9	154.5	167.9		
1983	I	570.6	507.7	62.9	163.6	176.2		
	II	577.3	565.9	11.4	160.9	191.1		
	III	620.6	601.3	19.3	162.5	194.3		
	IV	690.2	641.3	48.9	175.5	200.6		
1984	I	722.1	711.8	10.3				

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