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CRISIS IN THE CATTLE INDUSTRY

R. O'CONNOR and P. KEOGH

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General Summary

In the second half of 1974 farmers suffered one of the most severe declines in young cattle prices ever experienced in this country. Between spring and autumn of that year prices of 6-7 cwt cattle fell from over £18 to £8·5 per cwt. Smaller cattle which in October 1973 were worth £70–£80 per head were selling a year later for £20–£30 while the average price of calves at Bandon mart fell from £42 per head in October 1973 to £7 per head in October 1974. Due to the intervention system, prices of finished cattle did not drop to anything like the same extent as those of young cattle but because factories were not able to take all cattle offered at the time, farmers received much less than the full intervention price. It should be stated, however, that without the intervention system matters would have been very much worse.

The purpose of this paper is to examine the causes of these difficulties and to suggest policies which may help to prevent recurrences on such a severe scale in future years. To place the problem in perspective, we begin by reviewing some of the more important aspects of cattle production in Ireland. (Trends in world cattle production are dealt with in Appendix A.)

Cattle Production in Ireland

Cattle numbers in Ireland increased by over 65 per cent between 1953 and 1974. However, this considerable rise was achieved in a rather erratic way with periods of rapid increases being followed by periods of stagnant and even declining numbers. The most sustained period of growth took place from 1969 to 1974 when the cattle population grew by almost 30 per cent.

A most surprising feature of Irish farming is the relatively

large proportion of cattle other than cows on the small, as compared with the large holdings, despite the fact that farm surveys show very low income per acre from cattle raising compared with other farming enterprises. Small farmers in Ireland, therefore, depend very heavily on cattle for their income and in times of low prices are especially hard hit. Having small incomes even in good times they may be driven to the poverty level in bad years.

Irish cattle prices have fluctuated widely over the years usually in line with economic conditions in Britain. On three occasions since 1953, and to a lesser extent in a fourth, there were very severe price drops. If we omit the 1974 situation the most severe of these declines occurred in 1955/56 and 1965/66 when annual prices for heavy cattle dropped by 20 per cent and 9 per cent respectively. There was also a smaller drop in 1962/63. In all these years, however, the declines in the prices of smaller cattle and calves were much greater than those of heavy cattle. The 1974 crisis is, therefore, not a unique occurence and we think it would be true to say that similar situations will continue to occur in future years.

Having reviewed the historical situation four questions are posed for answer.

1. What was the cause of the 1974 crisis?
2. Could the Irish difficulties have been prevented by any action on the part of policy makers?
3. Can we do anything to alleviate the effects of last year's problems at this stage; and most important of all
4. Can Irish policy makers and farmers do anything to prevent repetitions of such crises in future years?

Cause of 1974 Conditions

Cattle numbers had been increasing in practically all the major beef producing countries from about 1968 onwards. These increases were associated with high beef prices in the

developed countries as a result of soaring incomes everywhere and the operation in Europe of the Common Agricultural Policy. This build up of stocks could not, of course, go on indefinitely. Supply was bound to outpace demand as had happened regularly in the past. The onset of the slump was, however, hastened by major world economic factors.

Events in 1973 turned the international meat situation on its head, but the petroleum crisis at the end of that year was one of the major causes of the trouble. Consumers suddenly found an unexpected reduction in their purchasing power and as a result there was considerable resistance to the high price for beef. At the same time, cattlemen in some of the main beef producing countries began moving their herds to market.

The position in Ireland was exacerbated by a number of factors.

1. During the second half of 1974 expectations of a shortage of winter fodder and prospects of further declines in cattle prices had the effect of increasing market supplies of store and fat cattle, while simultaneously depressing demand for stores.
2. Due to capacity limitations, abattoirs were not able to absorb the extra supplies of finished cattle which came on the market and were thus able to buy cattle at much less than intervention prices.
3. It has also been argued that the policies of the lending institutions contributed to the instability of the trade. The claim has been made that when cattle prices were increasing in 1972/73 credit facilities to agriculture were over-expanded, while when prices were declining in the latter half of 1973 and 1974 over-restriction of credit exacerbated the price depression. Having examined this statement we found that when account is taken of seasonality factors there is no evidence of credit restriction during recent periods of falling cattle prices. We also argue that prices for young cattle would have increased substantially

even in the absence of easy credit terms. Favourable expectations regarding cattle farming would have caused farmers to use the increased incomes obtaining in those years to bid up prices of young stock.

Could the Difficulties have been prevented by Policy Makers?

It is argued that there was little which the government could have done to avert the 1974 troubles. It is easy to say now that the Irish cattle expansion should have been slowed down, but it is much more difficult to say how this might have been done. In view of the high prices ruling in the EEC, farmers would have increased cattle numbers regardless of what the government or economic experts said. And it is hard to blame them for this attitude, having being tied for years to the low prices ruling on the British market.

Alleviation of Present Problems

At time of writing the bulk of finished cattle have been slaughtered and prices for cattle of all kinds have risen substantially. We are, however, not yet completely out of the wood. There are still a very large number of cattle in the country and with the very high prices ruling for fertilisers, the feed situation could again become critical next winter. Steps should, therefore, be taken now to ensure adequate supplies of winter feed. To this end the government might consider increased grants for silage making, and the subsidisation of fertilisers on a temporary basis to counter the expected severe decline in consumption.

Prevention of Crises in Future Years

The following suggestions towards this end are discussed:

(1) *Alteration of the intervention system so as to have higher prices in Spring than in Autumn:* This would encourage farmers to fatten cattle over the winter and make for more even slaughtering

throughout the year. Pressure on the intervention system would thus be eased.

(2) *The introduction of a deficiency payments scheme for store cattle:* This idea was examined and rejected as unworkable. It is impossible to devise a feasible system of supporting the prices of young cattle which will ensure that the money goes to the actual producers and not to intermediaries of various kinds. It was concluded that the best means of ensuring reasonable prices for young cattle is by maintaining prices for finished animals.

(3) *Export or slaughter of young calves:* Large-scale exports of young calves to the continent would take pressure off feed supplies and would prevent panic selling in autumn. It would also enable farmers to expand dairying which is a more profitable enterprise than drystock farming. This policy however does not offer a permanent solution to our problems. Prices for calves would be too low because transport costs are excessive and our breeds of calves are not favoured by continental feeders. The policy of producing veal calves is also examined and rejected on the grounds of unprofitability, at present, and likely future, feed prices.

(4) *Live store exports:* Store exports have always provided valuable outlets for Irish cattle and taken pressure off winter feed supplies. With the ending of the deficiency payments system in Britain, this trade has declined, and it is not likely to increase very much in future years due to a remarkable expansion in domestic cattle production in the UK. Neither does there seem to be a potentially large-scale market on the continent for our type of store cattle. We cannot therefore look to a large increase in store exports as a means of solving our young cattle problems.

(5) *Intensive Beef Systems:* As a consequence of the long feeding period for cattle, few Irish farmers can afford the high

capital requirements of keeping the same animals on their farms from birth to slaughter. To maintain cash flows they must try and make profits by buying and selling at fairly short intervals. There is therefore considerable income redistribution as between cattle farmers in different years depending on the state of the market for different classes of stock.

The adoption of beef enterprises which have shorter production periods than traditional systems would enable cattle to be kept on the same farm from calf stage to slaughter and would thus help to reduce the income redistribution effects. It would also enable more efficient use of limited feed supplies since old cattle are very inefficient converters of feed into meat. Intensive systems of beef production could be adopted on the larger farms. There is, however, little scope on small farms for integrating store raising and fattening activities due to the constraints imposed by capital, feed quality, tradition etc. We suggest, therefore, that in western and north-western districts separate agencies such as co-ops should be set up to operate large beef units which could draw on the supply of calves from dairy farmers in the locality. By some type of contractual arrangement farmers would receive prices for calves which would be both reasonable and stable from year to year.

A few such systems are budgeted in the paper and it is shown that a 0–2 year system of production, if properly managed, could pay current market prices per acre for land, interest on capital and a competitive price for calves. If, however, co-ops are to embark on integrated beef-fattening systems it is suggested that they complement these systems on a permanent basis with winter fattening of cattle purchased in the open market in autumn. The latter arrangement would have two main advantages. First, the co-op would be buying cattle in autumn at a time when prices generally are low and so could expect to derive reasonable profits from the operation. Secondly, if adopted on a wide scale, autumn purchases would help to stabilise the price of stores and might prevent some of the very severe slumps which are a feature of the cattle trade.

As co-operatives are unlikely to go in for cattle feeding systems without some stimulus, it is felt that they should be actively encouraged to do so by the government. Pilot units would need to be established and generous capital grants made available. Nor is it unreasonable to expect such support particularly in the under-developed areas. The social consequences resulting from integrated cattle fattening units are manifold and over the long term they might have the effect of helping to slow down the rapid rate of rural depopulation.

Introduction

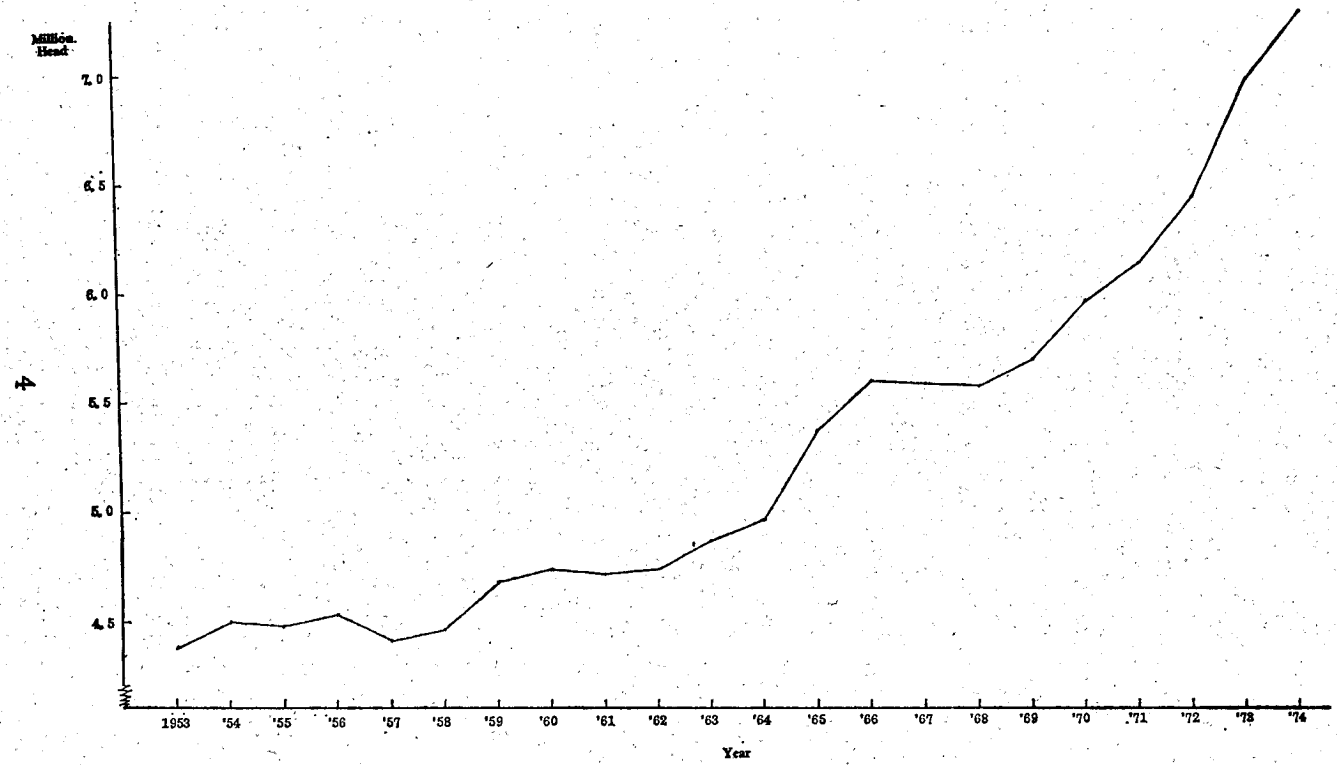
THE purpose of this paper is to examine the causes of the difficulties in the cattle industry which occurred in 1974 and to suggest policies which may help to prevent recurrences on such a severe scale in future years. The difficulties in the main consisted of severely depressed cattle prices, especially those of store cattle, and an expected shortage of winter feed. Fortunately, the very mild weather of the recent winter relieved the pressure on limited feed supplies and the expected shortage did not materialise. The latter development, and indeed other purely seasonal factors, have led to a substantial recovery in cattle prices in recent months. Despite this improvement, however, many of the factors which contributed to the recent crisis remain fundamentally unchanged and could reactivate similar troubles in the future. To place the crisis in perspective we commence the study by reviewing some of the more important aspects of cattle production in Ireland. (Trends in world cattle production are discussed in Appendix A.)

Cattle Production in Ireland

THE Irish cattle industry has been studied exhaustively by various people over the years and there is little we can say (of an historical nature) which has not been said before. A short background discussion (though involving some repetition) is, however, useful in order to emphasise those features of the industry which have an important bearing on the 1974 situation. As can be seen from Figure 1 cattle numbers in Ireland have increased by over 65 per cent from 4·397 million in 1953 to 7·27 million in 1974. However, this considerable rise in numbers was achieved in a rather erratic way with periods of rapid increases being followed by periods of stagnant and even declining numbers. Figure 1 shows that fairly major depressions occurred in the periods 1956/57 and 1966/68 with smaller declines occurring in 1954/55 and 1960/61. Each of those troughs was followed by periods of rising cattle numbers but the most sustained period of growth took place from 1969 to 1974 when the cattle population grew by almost 30 per cent.

Cattle production takes place on most Irish farms. Detailed analysis of the 1965 Census of Agriculture showed that there were cattle on 85 per cent of the 280,000 holdings one acre and over in the state in that year. Put in the opposite way this means that only 15 per cent of the holdings, one acre and over, did not have any cattle. The bulk of the latter were very small holdings under 15 acres in area. Over 90 per cent of all other holdings had some cattle. The average number of cattle per holding was 21·8 but this varied from 3·5 on the 1–5 acre holdings to 116·0 on the over 300 acre holdings. Similar figures for 1970 have not been produced but, even though there may be some slight change in the proportions over this period, we can conclude that cattle production affects the

Figure 1: Cattle numbers in Ireland 1953-74.



Source: Statistical Abstracts of Ireland and *Irish Statistical Bulletins*, CSO, Dublin.

livelihood of practically all Irish farmers and that of a large number of non-farmers who depend in one way or another on the cattle industry.

There has recently been much discussion concerning the type of cattle produced on small versus large farms. Table 1 shows the percentage distribution of cattle on different-sized holdings in 1965. As can be seen from this table, 17·6 per cent of all cattle and 19 per cent of milch cows were on the under 30 acre holdings while 34 per cent of total cattle and 29 per cent of cows were on the 100 acre and over holdings. The proportions of young cattle 0–1 years followed closely the pro-

Table 1: *Proportion of different classes of cattle on different sized holdings in 1965*

Livestock	*1–30 acres*	*30–50 acres*	*50–100 acres*	*100+ acres*	*Total*
			Percentage		
Milch cows	19·0	21·0	31·2	28·7	100.—
Heifers in calf	11·6	15·3	30·0	43·1	100.—
0–1 years	19·3	20·7	30·2	29·8	100.—
1–2 years	19·5	20·0	28·7	31·8	100.—
2–3 years	13·7	15·1	26·6	44·7	100.—
3 years and over	5·8	8·9	22·2	63·1	100.—
Total	17·6	19·1	29·3	34·1	100.—
			('000) *acres*		
Total crops and pasture	1,881	2,110	3,278	4,215	11,485

Source: CSO, Dublin.

portions of cows on the different sized holdings but as might be expected the larger holdings had a much higher proportion of older cattle than the smaller ones; 44·7 per cent of the 2–3 year old cattle were on the over 100 acre holdings compared with only 13·7 per cent of such cattle on the under 30 acre holdings. The distribution of three-year old and over cattle is even more

heavily skewed in favour of the larger holdings with 63 per cent of such cattle on holdings over 100 acres while only 5·8 per cent were on holdings less than 30 acres.

Probably the most surprising feature of the table, however, is the relatively high proportion of cattle other than cows on the small as compared with the large holdings. The various farm surveys carried out over the years by the Central Statistics Office (CSO) and An Foras Talúntais (AFT) have shown that income per acre from cattle rearing is much lower than that from any of the other farming systems; yet despite this, most small farms rely heavily on cattle for their incomes. In times, therefore, of low cattle prices, small farmers are especially hard hit. Having low incomes even in good times they may be driven to the poverty level in bad years.

It is outside the scope of this paper to discuss the reasons why small farmers persist in cattle farming. All we can say here, is that it is a fact of Irish farm life, and that it will not change easily. Nevertheless, every effort should be made by those responsible, to point out to wholetime small holders the hazardous nature of cattle farming, and the advantages of changing to a more lucrative enterprise like dairying or tillage farming.

Because of climatic factors, Irish cattle have traditionally been produced from grass and grass products. At the relative prices obtaining for beef and cereals in post-war years it has not been profitable to go in for intensive grain feeding of cattle here. Because of this, cattle cannot be fattened at early ages and, therefore, there is always a very high proportion of older cattle on Irish farms. Also, there is no tradition for the slaughter of calves for veal here so that the proportion of cows to total cattle in Ireland is lower than in most European countries. In a recent ESRI paper[1] it was shown that the ratio of cows to total cattle on Irish farms in 1971 was only 29 per cent compared with 48 per cent in Italy and 55 per cent in Poland.

[1]Baker, T. J. *et. al.* "A Study of Irish Cattle and Beef Industries", *The Economic and Social Research Institute*, Paper No. 72, July 1973, Table 4.2.

The long fattening period on Irish farms has a number of very undesirable side effects, particularly at the present time when the price of milk is so high. A critical factor is that the amount of feed required per lb liveweight gain, is much higher for old than for young cattle. Hence, a high proportion of older cattle on farms puts a great strain on limited feed supplies. Sheehy[2] has shown that cattle sold fat at 3½ years of age require 10 lb of Barley Equivalent (BE) per lb liveweight gain over their lives, whereas, cattle fattened at 17 months of age require only about 5 lb of BE per lb gain. Admittedly, the fattening of cattle at such early ages cannot be done entirely on grass products and requires a good deal of expensive grain, but if we could improve the quality and increase the quantity of our hay and silage we could shorten the feeding period considerably. However, improvements of this kind are slow to implement. While researchers may be aware of the benefits of modern techniques in feed production there is a time lag of several years before such innovations are adopted at farm level.

As a consequence of the long fattening period, few farmers can afford the high capital requirements of keeping the same animals on their farms from birth to slaughter. To maintain cash flows they must try and make profits by selling and buying at fairly short intervals, so that there are considerable income redistributions between cattle farmers, depending on the state of the market for different classes of cattle, and on the time of the year when people buy and sell. Those who are poor makers of winter feed must sell at low prices at the end of the grazing period, while those who are good producers of feed can buy at the low prices and sell in spring when prices are usually high. It is likely, therefore, that some farmers make very little income from cattle rearing in most years, and, indeed, if these farmers did not own the land and capital involved they would be forced out of production altogether.

[2]Sheehy, S. J., *Animal Nutrition*, Macmillan, London, pp. 330–331.

Cattle Prices

CATTLE prices are subject to severe price fluctuations over time. In many countries these fluctuations are of two kinds, seasonal and annual.[3] In Ireland, seasonal fluctuations come about as a result of the growth cycle of grass. There is usually a strong demand for cattle in spring to consume the growing grass and this results in high prices for cattle of all kinds at this time. In autumn when the growing season finishes, large numbers of cattle are put on the market. Demand at this time of year, particularly for unfinished cattle, is not very strong due to high winter feed costs and therefore prices are relatively low. Throughout the 1950s and 1960s autumn prices for cattle of all kinds in Ireland were on average about 80 per cent of the spring price though in some years the decline was much steeper. In others, the autumn drop was masked by an annual rise in price.

Annual price fluctuations come about mainly as a result of regional or world supply and demand conditions. The supply conditions are influenced by weather, technological innovations in feed production, policies concerning cattle production and consumption in major beef producing countries (headage payments for beef animals in Europe, meatless days in Argentina etc.) and barriers to trade in consuming regions (for example, veterinary regulations and formation of trading blocks such as EEC). Demand conditions are influenced by population growth, change in real incomes and beef prices, competition from other meats, changes in living conditions such as urbanisation, women working, eating out, etc.

[3]For a detailed discussion on this topic see O'Connor, R. "The Implications for Cattle Producers of Seasonal Price Fluctuations", *The Economic and Social Research Institute*, Paper No. 46, January 1968.

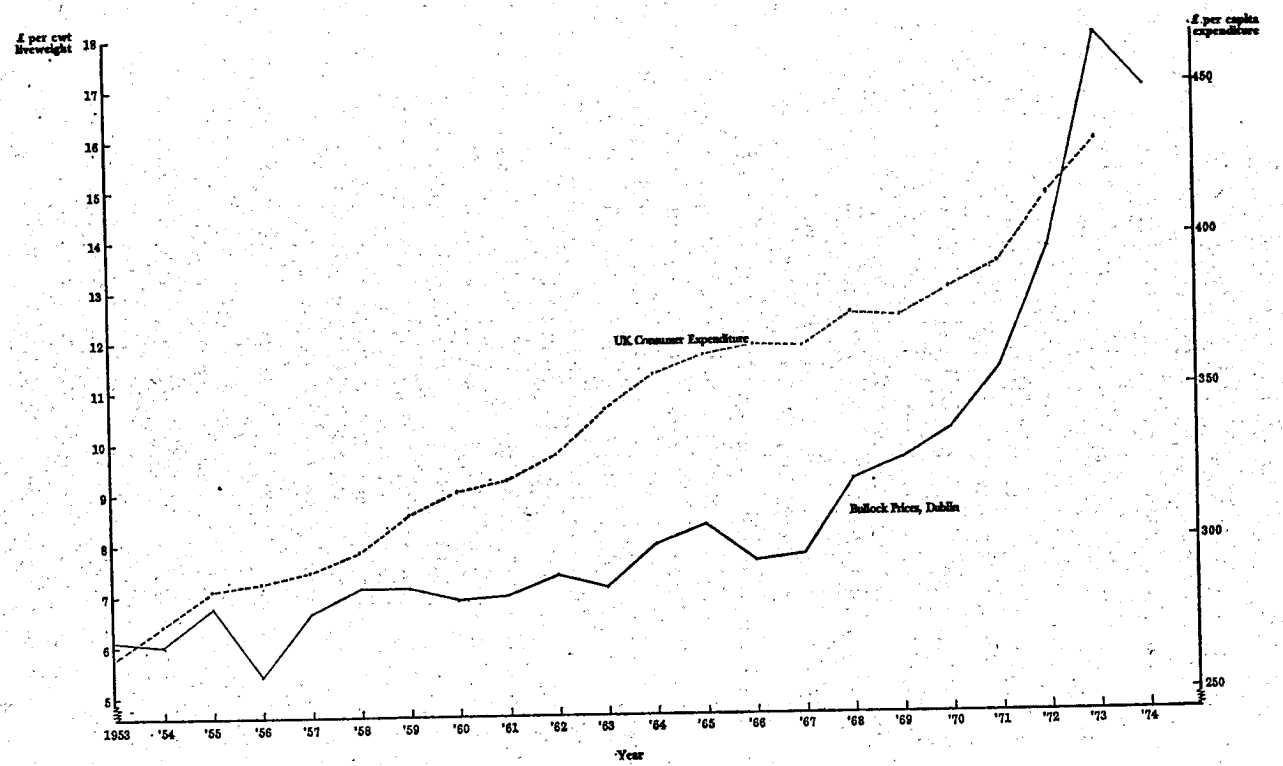
In many cases it is almost impossible to disentangle the supply and demand factors and in this paper we have not made any serious attempt at such an exercise. However, various studies over the years[4] have shown that consumption of beef responds to both real price and income changes and, therefore, any factors which slow down economic growth or increase beef prices relative to those of other meats will cause a decline in beef consumption or vice versa. The response of beef consumption to price changes in Britain is well documented[5] and it is generally held that the declines of about 10 per cent in beef consumption between 1963 and 1965 and again between 1970 and 1973 (when economic conditions were good) were due entirely to sharp price rises in those periods.

In order to see if there is any association between income levels in the UK (our main beef market) and Irish cattle prices, we show in Figure 2 real *per capita* consumption expenditure in UK[6] superimposed on bullock prices at Dublin auctions for the years 1953 to 1974. We have chosen the Dublin prices as this is the only complete Irish series available for the whole of the period. It should be kept in mind, however, that average prices for all cattle, if available, would be more variable than those shown. Bullocks sold at Dublin auctions consist mainly of heavy animals and prices of small stores which show the greatest fluctuation are largely excluded from this series.

A casual inspection of Figure 2 does not reveal a close association between the price and expenditure series. However, a closer examination shows that the periods of reduced economic growth in 1955/57, 1960/62 and 1965/67 all coincide with periods of depressed cattle prices in Ireland. Furthermore, the simple correlation coefficient between first difference of both sets of data is 0·623 which is significantly different from zero at the 99 per cent level. Though we cannot infer a cause effect relationship from this correlation, the evidence does tend to

[4]See for example Baker, *et. al.*, *op. cit.* p. 15.
[5]*Ibid*, p. 18.
[6]*National Income and Expenditure*, 1961-73 issues—HMSO, London.

Figure 2: Per capita consumer expenditure in the United Kingdom (at constant 1958 prices) and average annual prices (£ per cwt liveweight) of bullocks sold at Dublin auctions, 1953-1974.



Source: National Income and Expenditure, HMSO, London, 1961-1973 issues and *Irish Statistical Bulletins*, CSO, Dublin.

support the view that depressed economic conditions in Britain affect the consumption of beef and *ipso facto* the price of Irish cattle. Hence, it can be taken that the deflationary condition in the UK, and indeed in the world generally, played an important role in the 1974 cattle crisis.

Returning to Figure 2 we can see that Irish cattle prices have fluctuated widely over the years. If we omit the present period which is discussed in detail later, this figure shows that on two occasions in particular, and to a lesser extent in two other periods, there were very severe price drops. The most severe of these amounting to what we might describe as crises situations occurred in 1955/56 and 1965/66 when annual per cwt prices fell by 20 per cent and 9 per cent respectively. There were also smaller drops in 1959/60 and 1962/63. In all these years the price drops were more severe than the annual data in Figure 2 show. If we omit 1972, when prices rose by 28 per cent between April and December, the average spring/autumn price decline was 20 per cent. In both 1956 and 1966, the spring/autumn price drop was 28·8 per cent while in 1959 it was 24 per cent. These figures go to show that severe price drops have occurred in previous years and that the 1974 crisis is not a unique occurrence. We think it would be true to say also that similar situations will continue to occur in future years.

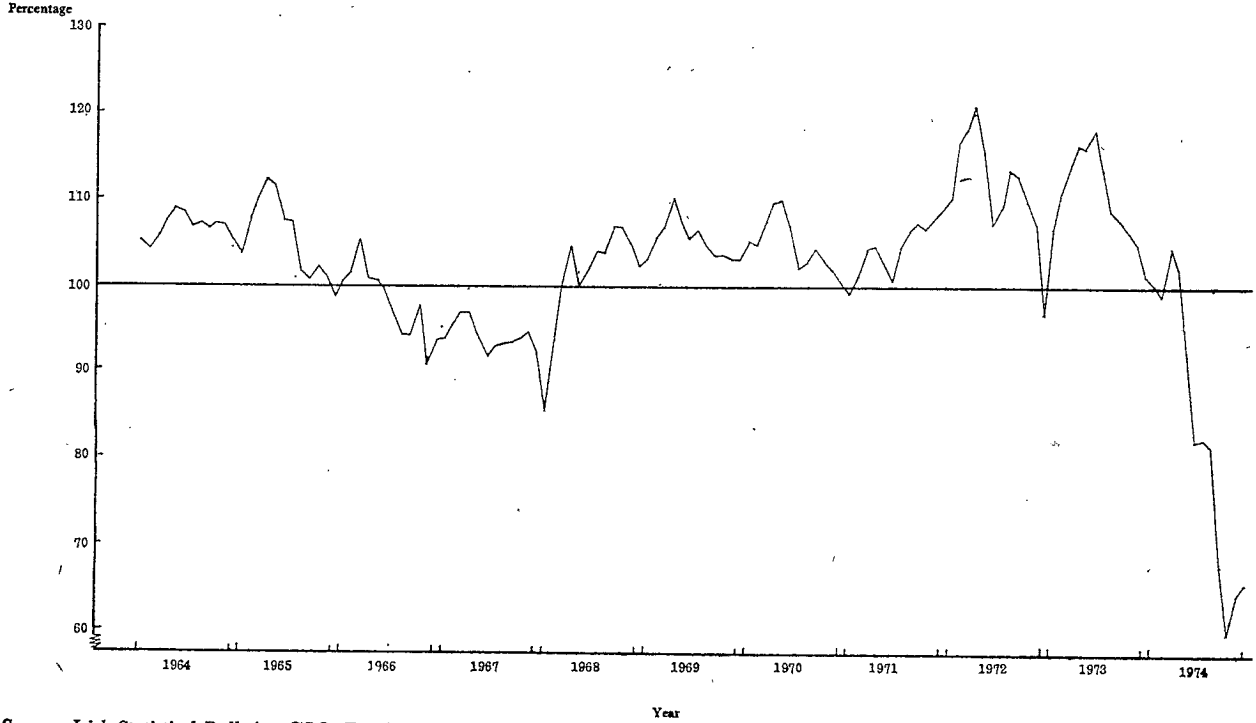
Relationship between Prices of Different Classes of Cattle

The per cwt prices of young cattle react strongly to changes in the per cwt prices of finished cattle. Normally the price of store cattle is higher than that of beef cattle but in times of depressed beef prices, store prices fall below those of beef cattle. This trend is shown for monthly data from 1964 to 1974 in Figure 3. As can be seen from this figure, per cwt prices of store cattle were above those of fat cattle throughout 1964 and most of 1965. They were about equal in the early part of 1966 but dropped below fat prices in the second half of 1966, and remained below these prices throughout 1967 and in the early part of 1968. After this, they rose above fat prices and remained above them almost continuously until May 1974 when the ratio fell to 82 per cent. This ratio dropped further in succeeding months until it reached 60 per cent in October 1974.

Calf prices also react strongly to changes in fat cattle prices, but because calf prices are no longer published by CSO we cannot show this relationship for recent years. The figures given in Table 2 for the years 1952 to 1967 when the calf series was discontinued are, however, of interest in this regard.

As can be seen from this table, prices of calves under one month at fairs were on average about 17 per cent of fat cattle prices three-year old and over during the period. This ratio varied however from 10 per cent in 1952 (caused by a very unseasonal increase in fat cattle prices in the second half of that year) to almost 26 per cent in 1959, associated with high cattle prices in the previous two years. Calf prices dropped sharply again from 1960 to 1963 and were associated with low fat cattle prices in those years. There was a sharp rise

Figure 3: Monthly prices per cwt of 6-7 cwt bullocks as a percentage of the prices of 10-11 cwt bullocks at livestock auction marts—1964-1974 inclusive.



Source: Irish Statistical Bulletins, CSO, Dublin.

again in cattle and calf prices in 1964 and 1965 and a very severe fall in calf prices in 1966 and 1967, during and after the 1966 cattle depression. The conclusion to be drawn from this analysis is that the instability of fat cattle prices is transmitted down the line to calf prices and is greatly magnified in the process.

TABLE 2: *Relationship between calf and fat cattle prices, 1952-1967.*

Year	*Price per head*		*Calf/Cattle price ratio*	*Prices as percentage of previous year*	
	Fat cattle 3 years+	*Calves under 1 month*		*Fat cattle*	*Calves*
	£	£	*Per cent*	*Per cent*	*Per cent*
1952	56·38	5·70	10·1		
1953	61·05	8·90	14·6	108·2	156·1
1954	61·40	8·05	13·1	100·6	90·4
1955	66·60	9·40	14·1	108·5	116·8
1956	54·94	8·80	16·3	82·5	93·6
1957	59·98	10·30	17·2	109·2	117·0
1958	64·88	16·48	25·4	108·2	159·7
1959	64·35	16·60	25·8	99·2	100·9
1960	62·78	10·10	16·1	97·6	60·8
1961	62·90	10·25	16·3	100·2	101·5
1962	64·58	11·65	18·0	102·7	113·7
1963	63·98	11·90	18·6	99·0	102·1
1964	72·35	14·55	20·0	113·1	122·3
1965	78·69	18·15	23·1	108·8	124·7
1966	73·30	12·05	16·4	93·2	66·4
1967	76·10	8·85	11·6	103·8	73·4
Average	65·39	11·38	17·4		

Source: Irish Statistical Bulletins, CSO, Dublin 2.

The Present Cattle Situation

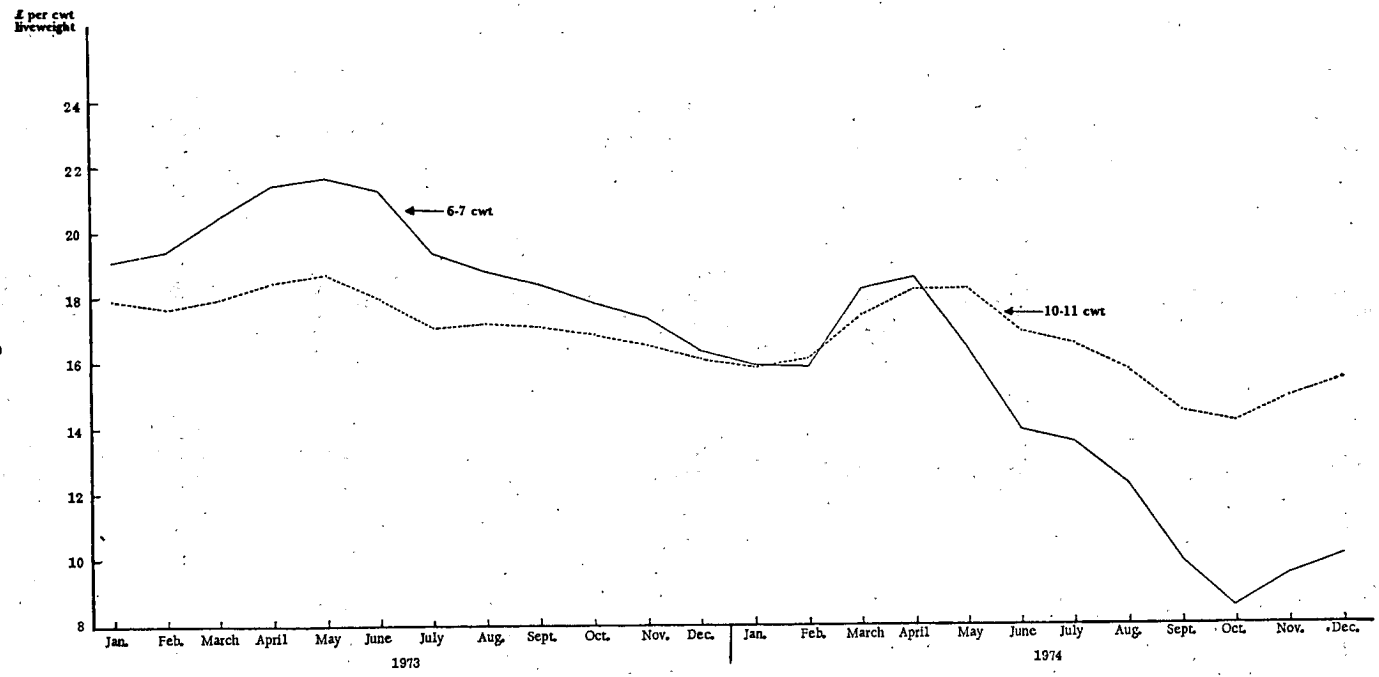
THE rapid increase in the cattle population described in the previous section has come about as a result of positive government action. Increased prices for milk, the calved heifer subsidy scheme and in 1968 the beef incentive bonus scheme have all played a part in the expansion which has taken place.

The increase in cattle stocks during the 1960s had, however, been accompanied by declines in tillage. This substitution had been justified on the grounds of the relatively high prices ruling for dairy products and beef in the EEC (which we would soon join) compared with relatively low prices for grain in that market. Furthermore, it was argued, and with some justification that because of climatic factors our comparative advantage lay in the production of grass rather than tillage crops.

It was also known that as countries developed economically, the consumption of beef increased and with expectations for continued economic growth in the developed world it was expected that, over the long run, demand would outstrip supply, except, perhaps, for short periods at the peaks of cattle cycles. The intervention system was expected to cope with these peaks.

As the date of accession to the EEC approached a wave of euphoria, such as had never before been experienced, hit the Irish farming scene. Between 1968 and 1972 creamery milk prices increased by 40 per cent and cattle prices by over 60 per cent while between April 1968 and April 1972 calf prices rose by about 135 per cent from about £17 to about £40 per head. On our accession to EEC in January 1973 the rise in milk and cattle prices continued. Creamery milk prices in 1973 were

Figure 4: Monthly prices of 10-11 cwt and 6-7 cwt bullocks at livestock marts (including Dublin) 1973 and 1974.



Source: Irish Statistical Bulletin, September 1974 and CSO.

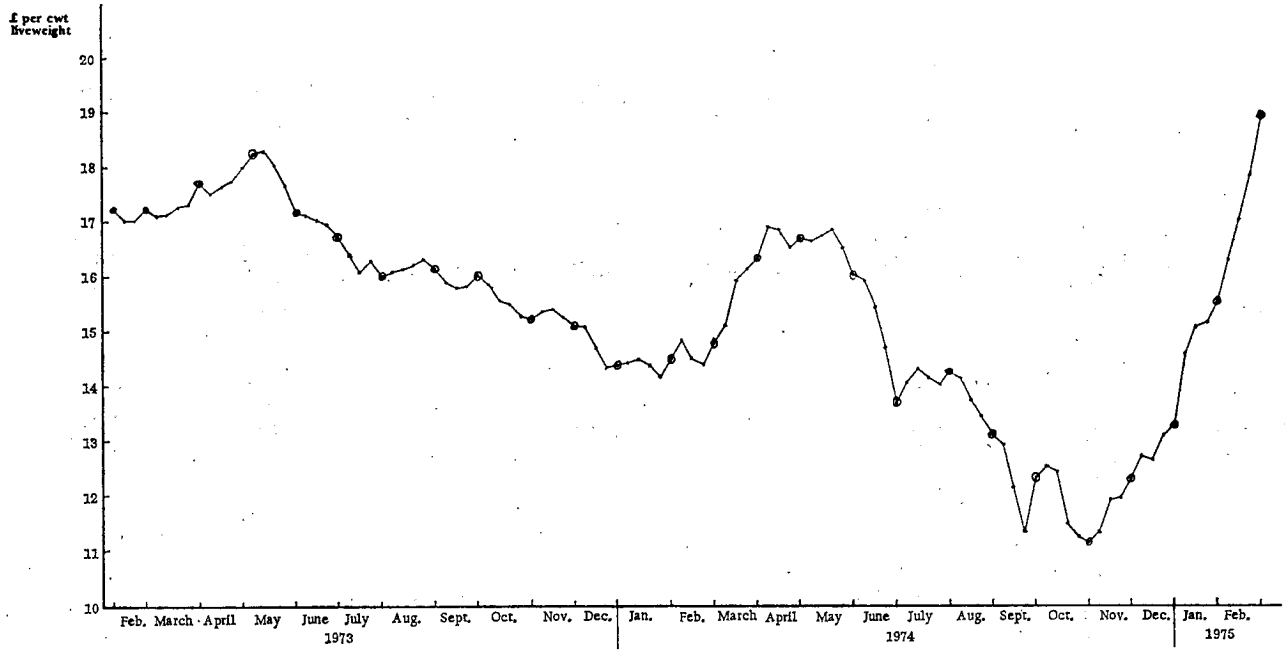
23 per cent higher than in 1972. Young cattle prices were about 30 per cent higher, while calf prices in April of 1973 averaged about £55 each or about 29 per cent of the price of a 10–11 cwt bullock in that month. As a result of these increases both purchase and renting prices of land increased dramatically. The slump when it came was, therefore, all the more severe.

The initial downturn in prices commenced about June 1973, though, of course, part of this was due to normal seasonal factors. Between May of that year and February 1974, prices of 6–7 cwt cattle dropped from £21·6 to £15·8 per cwt. (See Figure 4.) They rose, somewhat, in March and April 1974 but declined again in May and June and went on falling rapidly until October when they then reached the very low level of £8·5 per cwt. Since then they have started to recover. The depression was even worse in the price of younger cattle and canner cows. Cattle weighing 4–5 cwt which were worth £70–£80 in October 1973 were selling, just a year later, at £20–£30 per head while the average price of calves at Bandon Mart fell from £42 per head in October 1973 to £7 per head in October 1974. The prices of canner cows fell from about £9 per cwt in October 1973 to £3·5 per cwt a year later. Because of the intervention system, prices of heavy cattle did not decline too seriously, those of 10–11 cwt bullocks at marts dropping only from £16·8 per cwt in October 1973 to £14·7 in October 1974. Hence, it can be seen that the intervention system prevented a collapse in the price of heavy cattle and those who could afford to keep such cattle were not too badly off. However, when all kinds of fat cattle are weighted together (steers, heifers and cows) as is done in calculating the EEC reference price, the decline in price between October 1973 and October 1974 was about £3·7 per cwt or 24 per cent.* (See Figure 5.)

The people worst hit by the slump were the single sucklers

*The decline in the average price of all fat cattle sold off farms would have been less than 24 per cent since (*a*) the reference price includes prices of some cattle not for immediate slaughter or export and (*b*) it does not include prices for cattle sold directly to abattoirs, which prices in autumn 1974 were much higher than those ruling at marts.

Figure 5: Average weekly reference price of fat cattle at Irish marts, February 1973-February 1975.



Source: CBF *Weekly Market Intelligence Bulletins.*

whose 8–9 month old calves were worth no more than £20 per head at the end of 1974. Many of these people have had hardly any income from rearing for that year. The people least affected by the situation were the dairy farmers who continued to receive relatively high prices for milk though low calf prices reduced their incomes substantially. Not all dairy farmers, however, have done as well as others. Those who refused to sell calves at the prices ruling in spring 1974 and those who normally keep their calves until they are 9–12 months old, found that 9 months later their young stores were worth little more than they were at birth. Most of the latter had very low incomes from milk and with little or no income from cattle they would have been on the poverty line were it not for unemployment assistance.

Apart from price consideration another complicating factor in the 1974 crisis has been a shortage of winter feed in 1973/74 and 1974/75. Unfortunately, the supply of winter feed has not kept pace with the increase in cattle numbers. Between January 1971 and December 1973 the livestock unit equivalent of cattle and horses carried over the winter increased from 4·5 million to 5·4 million or by 20 per cent. Over the same period the estimated total supply of winter feed available for this increased population, increased by only 3 per cent from 2·4 million to 2·5 million tons of Barley Equivalent. This shortfall in winter feed is an average for the country as a whole. Estimates made for the Irish Farmers' Association show that the shortfall was much greater in the western and northern counties than elsewhere*. Hence, the situation in the poorer farming counties was particularly severe. Not alone were prices very low but there are reports of very heavy mortality in these areas in spring of 1974 due to malnutrition and exposure.

Having reviewed the situation to date, a number of pertinent questions must be answered.

*These estimates were prepared by P. Keogh, The Economic and Social Research Institute, and V. Flynn, An Foras Talúntais.

(1) What was the cause of the 1974 crisis?

(2) Could the Irish difficulties have been prevented by any action on the part of Irish policy makers and farmers?

(3) Can we do anything to alleviate the effects of last year's problems at this stage; and most important of all

(4) Can Irish policy makers and farmers do anything to prevent repetitions of such crises in future years?

We will discuss each of these questions separately.

Causes of the 1974 Cattle Crisis

The World Situation

THE aggregate trends in cattle numbers in the major beef producing countries are described in Appendix A for the years up to 1972/73, the most recent year for which official data are available. The figures presented show that cattle stocks had been increasing rapidly in practically all the countries listed from about 1968 onwards. These increases were associated with high beef prices in the developed countries as a result of rising incomes everywhere and the operation in Europe of the Common Agricultural Policy. This build-up in stocks could not, of course, go on indefinitely. Supply was bound to outpace demand as had happened regularly in the past, and if history were to repeat itself we were due for a major recession in the beef market by about 1975. The onset of the slump was, however, hastened by major world economic factors.

Events in 1973 turned the international meat situation on its head. In February 1973 the second devaluation of the US dollar occurred, followed by a floating depreciation during the following summer. In the same year, internationally traded commodities rose sharply in price, particularly grain prices. The petroleum crisis at the end of 1973 brought international fuel prices into line with the general commodity price rise and threw the whole world pattern of production and trade out of gear. Consumers suddenly found an unexpected reduction in their real incomes and purchasing power. As a result there was a resistance to the high price for meat, especially beef. This phenomenon became world-wide, but was particularly pronounced in the United States at the end of 1973 and the beginning of 1974. At the same time cattle men in some of the

major beef-producing countries began moving their herds to market.

In the EEC under the combined effects of increased marketings and reduced real incomes, beef prices dropped in the fall of 1973, triggering the imposition of increased tariffs and variable levies which had been temporarily suspended. Full duties of 20 per cent on beef were introduced in September, and import levies (amounting to 38 per cent) were restored in November 1973. Export restitutions appeared in January 1974 including a special subsidy on Irish manufacturing beef exported to the USA. In summer 1974 the EEC beef import system was supplemented by a system of import certificates and later by a ban on all beef imports except for some small purchases under GATT agreements. In conjunction with these measures, intervention buying took place on a large scale and substantial quantities of intervention meat are now ready to move into international trade.

On the 20th April 1974 the Italian government under pressure of severe adverse balances in international payments instituted a system of advance deposits on most imports, including beef. In the early part of 1974 Japan was also faced with a heavy balance of payments deficit and felt the need to curtail foreign exchange outlay wherever possible. The fishing catch had, however, been good and the Japanese are said to have balanced their household budgets by expanding purchases of relatively low priced fish. A 90,000 ton import quota of beef announced by the Japanese government for the six-month period ending March 1974, was reduced to about 40,000 tons, and the amount and frequency of further import quotas are very uncertain.[7]

Argentina is probably the hardest hit of all the producing countries. Precluded by foot-and-mouth regulations from exporting fresh beef to the USA, she is locked in a feast or famine cycle with the European Community and much price

[7]Regier, D. W., "World Meat Situation", *Economic Research Service*. US Department of Agriculture, July 1974.

uncertainty, for the rest of the world depends on how these two regions face problems of customary trade volume. At the end of 1974, Argentinian exports were running at about 40 per cent of the corresponding figures for 1973 because they had few places to go. Cattle herds, however, are large and growing. Export taxes isolate Argentine ranchers from the world market but it is feared that this tax system will prove inadequate if the expected large slaughterings come while the world market remains depressed. Already Argentina has formally protested against the EEC's unilateral restriction of beef imports.[8]

In Australia beef and veal production in 1974 was an estimated 20 per cent down on the previous year, but prices for finished cattle in December of that year were only one-third of those ruling in December 1973.[9] Cattle numbers on the other hand had reached record levels in 1974 and producers seem to be retaining stocks in the expectation of a recovery in world beef prices. The picture in New Zealand is somewhat similar, with a large build-up in cattle numbers and reduced exports of beef in 1974.[10] Hence, with the prospect of increased exports of beef in 1975, particularly from Argentina, Australia and New Zealand, there is little likelihood of a sustained recovery in world beef prices before 1976.

The EEC Situation

The figures in Table 3 show cattle numbers, production and consumption of beef in the EEC since 1960. As can be seen from this table the level of self-sufficiency in the nine countries in 1972 and 1973 was only 87 per cent. Since then the situation has changed dramatically and it is estimated that domestic production in 1974 increased by about 14 per cent above the 1973 level. Hence, with consumption remaining static, the EEC was self-sufficient in beef and veal in 1974, and in a

[8] *Ibid.*
[9] *Australian Meat Producer and Exporter*, January 1974 and 1975.
[10] Meat and Livestock Commission, International Market Survey. Bletchley, Winter 1974.

TABLE 3: *Cattle numbers, production and consumption of beef in EEC, 1960-1974*

Year	*Total Cattle*†	*Indigenous Production*	*Consumption*	*Degree of self-sufficiency*
	(000)	'000 *tonnes*		*Per cent*
1960 (6)	48,126	3,326	3,548	93
1965 (6)	49,944	3,553	4,166	85
1966 (6)	51,027	3,904	4,483	87
1967 (6)	51,711	3,984	4,506	88
1968 (6)	52,251	4,169	4,622	90
1969 (6)	52,400	4,133	4,734	87
1970 (9)	72,692	5,784	6,265	92
1971 (9)	72,338	5,842	6,211	94
1972 (9)	74,360	5,349	6,093	87
1973 (9)	79,209	5,383	6,149	87
1974 (9)*	—	6,150	6,200	99

Community of six (6) up to 1969.
Community of nine (9) 1970 to 1974.
*1974 figures are estimates.
†Figures for total cattle are not exactly the same as those in Table A1 as they are from a different source.
Source: 'The situation in the beef and veal sector', *Newsletter No. 9 the Common Agricultural Policy,* European Communities—Directorate General Press and Information, September 1974.

surplus situation, when account is taken of heavy imports in the first half of the year, before the imposition of the import ban.

The situation in Britain is by far the most remarkable in this regard. When the beef equivalent of Irish live cattle exports is deducted it has been shown that the UK was only 52 per cent self-sufficient in beef in 1957[11] compared with an estimated self-sufficiency in 1973 of 81·6 per cent. The rising level of self-sufficiency in the UK is caused by both an increase in pro-

[11]O'Connor, R. "The World Meat Situation with Special Reference to Ireland", Technical Series, No. 2, Supplement to *Irish Trade Journal and Statistical Bulletin*, June 1961.

duction and a decline in consumption, which fell by 10 per cent between 1970 and 1973. UK self-sufficiency in beef and veal increased to 86·4 per cent in 1974 (and to 92·4 per cent in the final quarter) even though domestic consumption, stimulated by lower retail prices for beef, had increased by 20·3 per cent over the previous year. The March 1974 livestock returns for England and Wales indicated that total cow numbers increased by 4 per cent to 3·9 million head as compared to March of the previous year. This increase in cow numbers was made up of a mere 1·0 per cent increase in the dairy herd and a massive 21 per cent increase in the beef cow herd.

The most important factors contributing to the price slump in Ireland were the following:

(1) During the second half of 1974, expectations of a shortage of winter fodder, and prospects of further declines in cattle prices, had the effect of increasing market supplies of store and fat cattle while simultaneously depressing farmers' demand for cattle, particularly, for store cattle.

(2) Due to capacity limitations abattoirs were not able to absorb the extra supplies of finished cattle which came on the market in the latter half of 1974 and they were thus able to buy cattle at prices much lower than intervention levels. The backlog of cattle on farms hindered normal purchases of stores for fattening and further depressed store cattle prices.

It has also been argued that the policies of lending institutions contributed considerably to the instability of the cattle trade. The claim has been made that when cattle prices were increasing in 1972-73 credit facilities to agriculture were overexpanded by the Associated Banks, while when cattle prices were declining in the latter half of 1973 and 1974 the overrestriction of credit on the part of the banks accelerated the price depression. The figures in Table 4 for advances by

the banks and the Agricultural Credit Corporation would seem, on the surface, to support these statements. However, when the quarterly figures for bank advances are seasonally adjusted the resulting data do not provide any evidence of tight lending policies in times of falling cattle prices, and this applies especially to the last quarter of 1974 when prices were very depressed. Indeed in that quarter, bank advances to agriculture, as a per cent of total bank lending to the private sector, was 18·6 per cent compared with 18·5 and 18·0 per cent, respectively, in the corresponding quarters of 1973 and 1972.

TABLE 4: *Advances of the Associated Banks to the agricultural sector and loans outstanding by the Agricultural Credit Corporation (ACC) in recent years*

	Associated Banks(a)				*ACC(b)*
Year	*Mid-Feb.*	*Mid-May*	*Mid-Aug.*	*Mid-Nov.*	*Mid-April*
			£ million		
1969	57·7	62·7	64·8	60·5	22·1
1970	62·1	n.a.	n.a.	n.a.	24·9
1971	n.a.	76·6	74·9	71·4	28·4
1972	75·6	85·5	88·4	98·2	37·3
1973	112·0	125·1	120·9	124·0	54·3
1974	130·3	146·0	145·9	142·8	83·2

n.a. Not available due to bank strike.

(*a*) *Source:* Quarterly Reports of Central Bank of Ireland 1970-1975.

(*b*) *Source:* Agricultural Credit Corporation.

It could be argued, of course, that the ready availability of credit in recent years enabled farmers to pay excessively high prices for calves and land but we cannot be too dogmatic on this point either. During the period in question the high prices for finished cattle were determined by external forces and not by credit or other domestic factors. These high prices led in turn to high farm incomes and favourable expectations re-

garding the future of cattle farming. Hence, even in the absence of an expansion in credit, prices for land and for young cattle would have increased substantially, these increases being financed out of enlarged earnings. Indeed, had credit been tighter in these years cattle farmers would probably have forgone the purchase of many consumer durables rather than their basic raw material—calves.

The Overall Situation

In the face of a steady fall in prices as a result of the market situation, intervention buying gradually spread to the whole of the EEC, other than Britain, by the autumn of 1974*, but because of numerous difficulties (insufficiency of deep freeze and slaughtering space, and associated costs for the storage of meat outside production regions) the system did not succeed in maintaining market prices at intervention levels anywhere. The figures for intervention stocks of beef at the end of 1973 and 1974 are given in Table 5. This table shows that there were 245,000 tonnes in stores in December 1974 which is about 4 per cent of total annual EEC consumption or about two weeks' supply. To hold such a large amount of a perishable commodity in stock is an expensive operation and unless some rational means of disposing of these stocks can be arranged the whole system will collapse.

Various measures were taken to enable intervention stocks to be run down, among them sales at very low prices to outside countries and national aid to certain categories of consumers. In addition, slaughter premiums were introduced to encourage farmers to phase their marketings over the winter months while Britain was allowed to introduce deficiency payments.

It seems that the measures taken have eased the EEC situation somewhat at the present time but this improvement may not be permanent. Commercial beef herds are expanding in non-European countries, and the United States Department of Agriculture estimates that total commercial world production

*Britain did not operate the intervention system in 1974.

TABLE 5: *EEC beef intervention stocks in December 1973 and 1974*

Country	*1973*	*1974*
	Tonnes	
West Germany	19,828	69,000
Belgium	—	5,500
Denmark	—	28,000
France	506	56,000
Ireland	2,559	64,000
Luxembourg	—	—
Netherlands	—	2,900
United Kingdom	—	14
Italy	19,700	—
Total	22,893	245,000

Source: Department of Agriculture and Fisheries.

will remain high for some years to come. The EEC will therefore be kept under continual pressure to maintain traditional imports, even when member countries are selling into intervention.

The most worrying aspect in the long term, is the possibility that the extreme price fluctuations of recent years may aggravate further the beef cycles in the major producing countries of the world. If this happens the EEC itself must share part of the blame for it. On the one extreme when community beef prices are low the EEC restricts third country imports by prohibitive customs duties and levies or else by a total ban on beef imports. This upsets traditional demand/supply relations and reduces drastically prices in non-EEC countries. At the same time, the EEC supports home prices by large-scale intervention and the disposal of these stocks on the world market contributes further to the depression in world prices. At the other extreme, when the EEC has a deficit it removes all tariff barriers and causes a further boost to the already high world beef prices.

Could Difficulties have been Prevented by Policy Makers?

As a result of our joining the EEC, certain things happened which were inevitable; others we feel might have been forestalled, but, of course, it is easy to be wise after the event. In the first instance, Irish policy makers could not have prevented the present build up of cattle in the main world producing areas, nor the deflationary effects of the petroleum and other raw material price rises. Also since our supply is only a small proportion of total European consumption, a cut-back in Irish supplies would not have prevented the current European price decline. It could however have eased the slaughter capacity situation and taken pressure off feed supplies.

An important question to be asked, however, is, should the government or any other body have discouraged or prevented the expansion of stocks which took place over the past 14 years? Let us examine this question. Throughout the 1960s, government policy had concentrated on increasing cattle and, to a lesser extent, sheep numbers in an effort to expand economic growth in the economy as a whole. The emphasis was really on cattle rather than on other farm enterprises because, at the time, beef was the only major agricultural product we could export without a heavy subsidy. The mutton and lamb market was limited, while exports of dairy produce and pigs required heavy exchequer payments. In 1970 the subsidy on milk was £31 million and that on pig meat £3·6 million. Grain production had been fostered over the years but in our climate it was an unreliable source of income. Also with large stocks in the USA, Irish prices had to be maintained at well above world levels so there was always vigorous opposition from grain users. There was, therefore, no real alternative to beef production in

those years even though this enterprise gave low returns to land and labour.

It is no wonder, then, that a wave of enthusiasm hit the country at the prospects of joining the EEC, where there were high prices for most of the commodities we could produce, particularly, beef and milk. It seemed also that this enthusiasm was well justified when in 1972 there came about a massive redistribution of income in favour of farmers. For the first time since records became available, income per family worker in agriculture as calculated by the CSO increased to almost the same level as that of industrial workers,* while in 1973 *per capita* family farm incomes were higher than those in industrial employment.

It is easy to say now that something should have been done to slow down the cattle expansion. It is much more difficult to say what the prescription should have been. Certainly, the technical experts can be blamed for saying too much about the productive capacity of Irish grassland and too little about farmers' abilities to use this resource optimally, but we must not blame the experts too much for the increase in cattle. Farmers would have done this anyhow, regardless of what the experts said. Perhaps we should have done more to export calves and young cattle in 1973, though at the prices ruling on the continent at the time it is difficult to see how farmers would be interested in this operation.

It has also been said that the banks and the ACC should have been prevented from making credit as freely available as they did. We have referred to this point in the last section where it was concluded that the easy credit policies of recent years were not as important a determinant of young cattle prices as some writers had claimed. But, even if these policies were responsible, it would have been very difficult for the lending agencies to curtail credit to farmers in those years. During the period in question there was continual demand by the farming press and by farmers' organisations for increased

*Average annual earnings per person in transportable goods industries.

credit, and failure by the lending agencies to accede to these requests would have brought them very severe criticism.

Probably our biggest mistake was the failure to mount a slaughter campaign in the autumn of 1973. How successful this campaign would have been is hard to say. Nevertheless, with hindsight we feel that it should have been tried. However, the reason for such a campaign did not seem very obvious at the time as it was difficult to foresee the effects of the oil crisis on world demand generally. In any case, it would have been difficult to persuade farmers who had paid high prices in spring 1973 to accept the prices ruling the following autumn. Some element of subsidy would be required, which would most likely have to be paid by the Irish exchequer. After the mad scramble for cattle in the early part of the year this would not be a very popular subsidy.

In future, however, we feel that the world beef situation should be kept under constant review so that those concerned can be forewarned about impending gluts or shortages. This monitoring of the situation should be done by a few experts engaged wholetime for the purpose. It is our opinion that these should be located in the Livestock and Meat Board or in An Foras Talúntais rather than in the Department of Agriculture and Fisheries so as to insulate them as far as possible from administrative duties.

Alleviation of Present Problems

At the time of writing the bulk of Irish finished cattle have been cleared and the pressure on feed stocks has eased. The mild winter of 1974/75 and the feed voucher scheme have helped greatly in this regard so that the predicted heavy cattle mortality has happily not occurred. The worst effects of the crisis are, therefore, over for the time being at least, but we are not fully out of the wood yet, even though small cattle prices have risen substantially. There are still a very large number of cattle in the country and with the very high prices ruling for fertilisers, the feed situation could become critical again next winter with a consequent reduction in young cattle prices. Steps should, therefore, be taken now to ensure adequate supplies of winter feed for 1975/76 and government grants for this purpose should be made available. Incentive schemes to encourage an increase in silage making are discussed in a later section, but another scheme which might be mentioned here would be the subsidisation of fertilisers, on a temporary basis, to counteract the rapid price increase and the consequent decline in purchases. Farmers also should be doubly careful at this time. They should be wary of paying high prices for young cattle and high rental for 11 months' grazing, unless they are assured of having sufficient feed to carry such cattle over next winter.

Prevention of Crises in Future Years

THE Common Agricultural Policy is currently under review and certain changes in it are inevitable. It seems to be generally agreed that after ten years' experience, the Common Market has not been able to combine the goals of income maintenance and the achievement of equilibrium between supply and demand. In other words, farmers' incomes cannot be maintained through price policies alone. Ideally, prices should be allowed to clear the market, and some other means should be used for supporting incomes. Unfortunately, however, in the real world there can be no ideal economic solutions and this case is no exception. If high food prices are maintained, exporting countries like Ireland can have farm incomes supported by consumers in the importing countries like Britain and West Germany. If, however, we move away from guaranteed prices it will be more difficult to support farm incomes in exporting countries. Such support will have to come directly from community funds and while importing countries may be willing to contribute to the support of their own farmers' incomes, they may be unwilling to support the incomes of farmers in other countries. The counter-argument, of course, is: why should well-to-do consumers in London or Bonn be given cheap food by poor farmers in Connacht or Brittany? The policy solution, therefore, must inevitably be a compromise between these two extreme situations.

What the final revised package will be is impossible to say, but it seems likely that an open-ended commitment to intervention buying is no longer a practical proposition. The butter mountain of a few years ago and the present beef situation have put the finances of the community under great strain and if

large surplus stocks* of dairy products were to develop again in the near future it is doubtful if the present system could survive. Nor does this system make much sense to the ordinary housewife. She sees top quality intervention beef sold at give-away prices to third countries while she continues to pay high retail prices for meat. Neither does she see much justice in a system which piles up huge surplus stocks while people die of starvation in the underdeveloped world.

Prior to EEC entry, Australian and South American imports came to Britain mainly in spring when Irish and British supplies were scarce, while in autumn the market was usually able to absorb the home supplies. This situation has now altered. As was shown earlier, the EEC is practically self-sufficient in beef and with the bulk of supplies ready for sale in autumn there is a danger that in many years the market will be over-supplied at that time. This can happen even in a year when the level of self-sufficiency drops back to 85 per cent. Hence, if present policies continue a country like Ireland, which exports 80 per cent of its production, is likely to be selling into intervention in the autumn of most years. If this happens it will give rise to serious problems.

The sale of beef into intervention isolates factories from the market, disrupts normal trade channels and is inimical to the permanent development of export markets. Also, if intervention is to work effectively there must be ample slaughter and storage capacity to cope with high seasonal supplies. In the absence of sufficient capacity, the intervention system while guaranteeing wholesale prices for beef sold by factories, will not guarantee prices received by farmers for fat cattle in a period of surplus supplies. It should be stated, however, that the intervention system, despite its shortcoming, has brought a good measure of stability into the Irish fat cattle trade and, given the expansion of slaughtering and cold storage capacity, will in future provide an effective floor price for beef cattle, provided, of course, that

*On 15 December 1974 there was a total of 366,000 tonnes of skim-milk powder in EEC intervention stores as opposed to 173,000 tonnes in December 1973.

it can be maintained. The maintenance of the system, however, is the most serious problem now facing the EEC. Intervention was designed to deal with periodic gluts and not as a permanent alternative to the market. Hence, if it is used continuously by any country it is bound to break down. In future, therefore, the Irish government must ensure that the system is not abused.

At least one of the EEC member states is seeking to have a beef deficiency payments scheme built into the CAP as a permanent option to intervention buying.* However, a full deficiency payments scheme unaccompanied by price supports is unlikely to be acceptable to food exporting countries like ourselves, unless the importing states are prepared to contribute heavily to its financing throughout the whole community. As this is unlikely to happen we can expect a modified intervention system to emerge accompanied, probably, by headage grants or other income payments for different categories of farmers. We would suggest, however, that some attempt be made to introduce seasonality into the Irish intervention price for beef.

It could be argued that the timing of the present EEC farm price reviews, which take place in spring each year, introduces an element of seasonality into beef prices when market prices are at, or near, the intervention floor. This is true to some extent but the magnitudes of the price rises usually awarded at those reviews are not sufficient to cover the extra costs of winter feeding. As is shown later, given the present feed to beef price ratio, a November-March price rise of the order of 25 per cent is required in order to break-even on a winter feeding operation, whereas the annual review price rises fall far short of this figure. A spring/autumn price differential could best be achieved by retaining the present intervention price system and the payment of supplementary slaughter premiums in the spring. The level of the premiums could be varied depending on the ratio of the weekly reference price in spring to that of the

*For a detailed discussion of costs and benefits of deficiency payments policy versus a product price policy see Josling, T. E. and Donna Hamway, "Distribution of Costs and Benefits of Farm Policy", Trade Policy Research Centre, London.

previous autumn. Such a scheme would serve as a permanent incentive to over-winter cattle and would have the effect of increasing the demand for stores the previous autumn. It would also effect a more even supply of cattle to abattoirs and lower the average per unit cost of slaughtering and processing.

Policies for Store Cattle

RECENTLY, Irish farmers' organisations have been agitating for the introduction of a deficiency payments scheme which would be applied exclusively to store cattle, while retaining the existing arrangements for beef cattle. This scheme would be operated through the marts and would apply to all cattle in a certain weight range. Since the price of calves on a per cwt basis is usually much higher than that of heavier animals the suggested weight range for eligibility is 4–7 cwt liveweight. If the average market price for stores were to fall below the fixed target price, a deficiency payment would be paid on eligible cattle sold at marts. The amount of this payment would be the difference between the target and the market price.

The feasibility of a deficiency payments scheme for store cattle is seriously impaired by a number of important considerations. In the first place, since the number of eligible animals in the state would be about 2 million, the physical problem of administering such a scheme would be considerable. However, the most serious problem would be the cost of the scheme, particularly in a year when store cattle prices were depressed. In such a year every eligible animal in the state would be put through the marts and sold to somebody so that the amount paid per animal would have to be kept small if the scheme were to remain viable. For example, if in 1974, the guide price were fixed at £18 per cwt then the full payment in the autumn of that year on a 6 cwt animal could be as high as £60. Clearly, this amount per animal could not be paid, and drastic reductions would have to be made. But, even if the figure were reduced to £20 per animal, the payment to farmers

of £40 million would still be very considerable. This raises the question of who should pay for the scheme.

Some would claim that it should be paid for by the state as a general aid to agriculture and particularly to small farmers, but this is not a very realistic argument. At the present time when the guide price for cattle is relatively high the general taxpayer could hardly be expected to pay all the costs. Administration expenses might conceivably come from government funds but the payments to store cattle producers would have to come from other farmers.

As these payments would be very high in a year like 1974 they could not be financed from levies collected in that year. Hence, a stabilisation fund would have to be set up into which money would be contributed in years of good prices and paid out in years of low prices. The contributors to such a fund would conceivably be the dairy farmers (on the grounds that a floor price for stores would stabilise the price of calves) and sellers of fat cattle. The levy on dairy farmers would be paid by the creameries and other liquid milk purchasers and that on fat cattle by meat factories and live fat exporters. The scheme would, however, have to be operated by the government as schemes of this nature are very complex and difficult to administer.

A large number of inspectors would be required to identify and earmark the cattle presented for payment but even in a year when no payments were made, the administrative costs could not be forgone. Inspectors would have to be employed on a permanent basis at recognised marts so as to process claims made at any time by sellers of store cattle. In other words, a scheme of this nature would require a large costly administrative mechanism which could not be assembled and dismantled as prices declined and increased. For this reason we cannot recommend it as a practical proposition. Considering all the costs involved it would seem to be a highly inefficient method of redistributing income from one sector of farming to another. Over the long run, the administration costs would be

excessive and there is no guarantee that the deficiency payments would go to the people most entitled to them. Cattle dealers, mart owners, transport operators and other distribution agents would very likely cream off a high proportion of the money.

As an alternative to a deficiency payments scheme, a system of headage grants on young cattle has been suggested as a means of supporting the incomes of store cattle producers in times of depressed cattle prices. This scheme is also beset by problems. The main problem hinges around when and how the scheme should be brought into operation. In theory, it should come into operation when average prices for certain classes of young cattle fell and remained below a certain level for some period of time. But, if this were to happen, those who sold the young cattle at the low prices before the scheme became operational would receive no support. The payments would go to the people who bought the cattle cheaply. For this reason headage payments would have to be made every year regardless of price levels and since it would be impossible to ascertain eligibility, except on the basis of permanent teeth, payment would have to be made on all cattle with, say, less than 2 permanent teeth. The cost of this scheme, apart from administrative expenses, would, therefore, be enormous and would probably be impossible to finance.

But, even if the financing problem could be solved, there is the question of who would be the ultimate beneficiaries. We believe that while the payments would directly find their way into the pockets of store cattle rearers, in the ultimate analysis those payments would be capitalised in the form of higher calf prices. Hence, headage payments would neither stabilise store cattle prices nor increase the incomes of store cattle rearers and we cannot therefore recommend their adoption regardless of who would pay for them.

It would appear from the above discussion that there is no feasible administrative means of supporting the prices of young cattle. Any scheme designed for this purpose is costly to administer and will not guarantee that the money allocated

will go to the people for whom it is intended. In the ultimate analysis, therefore, the best means of stabilising young cattle prices is to have some realistic means of supporting the price of finished cattle and of ensuring that the supply of winter feed is adequate for the stock of cattle on farms.

Overall Cattle Policy

THE intervention system and the expansion of slaughtering capacity which is taking place at present, will go some way towards ensuring a fairly stable price for fat cattle, but the problem of ensuring sufficient feed for all the cattle in the country still remains. One way of getting over the feed problem, of course, would be to reduce the cow and cattle population, but this is a very negative solution, even if it could be accomplished. At present prices for milk, dairying (for those who are prepared to milk cows) is the most profitable farming system available and despite the prospects of surplus dairy products in EEC, farmers are likely to go ahead with an expansion of milk output.* In our climate the other farming options are rather limited.

An expansion in cow numbers, however, given present methods of cattle production, will continue to put pressure on winter feed supplies and unless the system of cattle rearing in the country changes, Irish farmers will have difficulty in providing the amount of feed required. Policy will, therefore, have to concentrate on (*a*) increasing the supply of winter feed and (*b*) reducing the other cattle/cow ratio so as to enable the carrying of extra cows.

With regard to (*a*) the provision of a guaranteed autumn/spring price differential would serve as a permanent incentive towards increasing winter feed supplies, but this might not be sufficient on its own. Extra grants for silage-making equipment and structures would be an additional help in this respect while a direct subsidy per ton (as in Northern Ireland) to farmers

*It is expected that cow numbers in June 1975 will be about 100,000 less than the June 1974 numbers but in subsequent years we can expect a gradual increase in response to high milk and beef prices.

who never previously made silage would serve as a tremendous incentive.

Increased production of good winter feed would, of course, enable cattle to be slaughtered at earlier ages and would thus help to reduce the other cattle/cow ratio, but even this will not be sufficient in the short run. As we have shown previously the ratio of 2½ dry cattle for every cow in the state is higher in Ireland than in any other developed European country and some very positive method of reducing this ratio will have to be adopted if milk production is to be expanded and farm incomes increased. The following methods of dealing with this problem are considered:

(1) Slaughter of dropped calves.

(2) Export of live calves.

(3) Production and export of veal from three-month old calves.

(4) Export of young store cattle.

(5) Intensive Beef Systems.

1. Slaughter of Dropped Calves

The practice of slaughtering dairy calves has never been adopted on a large scale in this country. However, in the past the male progeny of exclusively dairy-type cows, such as Jersey, have, in periods of low calf prices, been slaughtered at birth. In the UK, on the other hand, calf slaughter on a large scale has always taken place and in 1973, 142,000 calves were slaughtered either as dropped or veal calves.

In Ireland milk prices have traditionally been low since the main dairy product, butter, was sold almost exclusively on the UK market. Because of this, and of its low labour requirements, drystock farming was always an attractive enterprise. As a result, calf prices were high,* and, on average, about one-

*A factor contributing to relatively high calf prices in Ireland has been the veterinary regulation, which prohibits the import of calves from outside the island.

third of the gross output per cow from dairying was derived from the sale of calves. In future it is expected that dairy farming relative to drystock rearing will become more profitable than in the past. This is likely to involve a certain amount of enterprise switching, resulting in an increased supply of calves from the dairying sector and reduced demand from the beef sector. Thus it seems likely that in the years ahead dairy farmers will be forced to accept much lower prices for their dropped calves. We believe, however, that they will not be forced to adopt the extreme measure of calf slaughter to any greater extent than in the past.

2. *Export of Live Calves*

In recent years the export of calves to continental and other countries has occurred, but on a rather intermittent basis. Italian demand for Irish calves is very volatile and depends to a great extent on the level of supplies on offer from Eastern European countries such as Poland and Hungary, which are among the main suppliers to that market. Also high transport costs and breed unsuitability are other important factors militating against the development of a permanent export trade in live calves. We feel, therefore, that the export of live calves will not effect a permanent reduction in the other cattle/cow ratio. It should, however, be exploited to the greatest extent possible.

3. *Production and Export of Veal*

The domestic demand for veal is almost totally confined to the hotel and catering trade and prices are usually highest during the tourist season. The feasibility of producing veal for export could only be determined by researching the market for veal in UK and on the continent and is outside the scope of this paper. However, on the basis of information at hand (given current feed costs* and a price of £30 per head for calves) veal

*The cost of feed for a 200 lb dead-weight veal calf is about £65 at the present time.

production would not be commercially feasible if the price per lb dead-weight for veal were to fall below 45p. At the present time prices are below this level and most producers have suspended operations for the time being. This trade will, of course, recover when economic conditions improve but because of high production costs it can never be relied on to offer a stable output for any appreciable number of Irish calves.

4. Export of Store Cattle

Because of the link with British fatstock prices there had, over the years, been a substantial export of store cattle from Ireland to the UK. Coinciding with the ending of the deficiency payment scheme in the UK there has been a decline in the store trade, the numbers exported falling from 592,000 in 1971 to 340,000 in 1973 and rising slightly to an estimated 354,000 in 1974. The overall reduction in live exports combined with the on-off nature of the trade has contributed to a steady running down of live shipping capacity. In both the short and long term, the shortage of sea transport is likely to pose a serious constraint on the development of the trade. The future level of this trade will also depend a good deal on the type of market support adopted by UK after the current review of the CAP. If a deficiency payment scheme is reintroduced the level of exports should not decrease. But neither can they be expected to increase very much because of enlarged domestic production. Hence, we cannot look towards a rise in store exports to the UK as a means of solving our young cattle problems and because of breed unsuitability the continental market does not seem very promising either.

5. Intensive Beef Systems

The adoption of beef enterprises which have shorter production periods than traditional methods would seem to offer the best solution to our problems. Such systems can be operated most profitably where cattle are taken from calf to slaughter stage on the same farm. Intensive systems of beef production

could be adopted on the larger farms but it is recognised that there is little scope on many small farms for integrating store raising and fattening activities due to constraints imposed by capital, feed quality, traditions, etc. Because of this we feel that in the western and north-western regions, separate agencies, such as co-ops, should operate large intensive beef units, which could draw on the supply of calves from dairy farms in the locality. By some type of contractual arrangement, farmers would receive prices for calves which would be both reasonable and stable from year to year. Such an integrated system of beef production would be mutually beneficial to both farmer and co-op. In the first instance, the farmer could substitute more profitable milk production for drystock farming and effect a considerable improvement in farm income. Secondly, while the beef unit might prove to be no better than a break-even operation, it would, in the long term, enable the co-op indirectly to enlarge its milk through-put.

In recent years creamery co-ops have increased milk handling capacity in anticipation of an expected rise in milk output. However, the increase in milk output has not measured up to expectations and as a result there is now a considerable amount of idle creamery capacity. Therefore part of the attraction for a co-op establishing a large beef unit would be the utilisation of spare capacity, increased efficiency and profitability. The question, however, which the adoption of an integrated system raises is: can such a system pay the current market price per acre for land, interest on capital and a competitive price for calves, without a subvention from some other co-op activity? If it cannot do these things then it should not be attempted. In theory it could, when necessary, be subsidised out of milk prices but in practice it is doubtful if this could be done on any substantial scale.

We examine below a few such systems in order to see how they conform to the criteria laid down above. Current prices are used throughout, with the calf price coming out as the residual in a break-even situation. In budgeting out these

systems, we imposed the constraint that the animals be finished in the spring rather than autumn, so as to exploit the seasonality in Irish cattle prices. Even with intervention, there is always the danger of an autumn glut and a severe reduction in prices as occurred in 1974. Unfortunately, however, the specification of spring sale places a severe restriction on the choice of feasible systems because of the birth pattern of calves from the dairy herd. In effect it means that only two integrated systems of beef production can be seriously considered. These are:

(1) An 11 month barley beef system and

(2) An 0–2 year grass based system.

Though both these systems have shorter production periods than traditional cattle rearing methods they also have certain disadvantages. Cattle fattened at 11 months of age must be fed entirely on grain and, therefore, grass (though a much cheaper feed) cannot be utilised. The two year system has the advantage of making maximum use of grass but the cattle must be accommodated for two winters, thus requiring very high capital investment per finished animal. Considerable thought was given to an intermediate 18 month system in which both grain and grass could be utilised, but if the cattle from this system were to be sold in spring, autumn born calves would have to be used. As we are concerned here with spring born calves from creamery cows we have not considered the 0–18 months system further.

Barley Beef Production

This system has been developed experimentally in the UK.[12] It uses calves from the dairy herd which are kept indoors throughout the entire production period, and are fed initially

[12]Kay *et al.* "Beef Production—dairy bred calves using cereals and arable products", *Meat and Livestock Commission, Handbook No.* 2, Bletchley, November 1974.

on milk substitute and early weaning concentrate. After weaning (at about 3 weeks of age) they are fed on a predominantly barley diet (though other cereals like maize could be used also, as well as a proportion of root crops). Animals are slaughtered between 850 and 900 lb liveweight when they are 10-11 months of age.

The financial assessment of this system is shown in Table 6. In calculating the interest payments given in this table a schedule of monthly costs was prepared and interest charged on these costs from the date incurred until the cattle were sold. Thus, interest was charged on the value of the calves purchased for a period of 10½ months, while the interest period for some of the feed purchased was only about 15 days. The method of calculating the break even price of the calves is explained in Appendix B (1).

As can be seen from Table 6 the capital required per animal is £267. This is a relatively low figure compared with that required for conventional grass based systems. Also no land is required so that the system is independent of grass growth and could be used if necessary to produce a regular supply throughout the year of high quality beef. Furthermore, young beef of this kind could be expected to fetch premium prices.

The big disadvantage of the system is that at current prices for beef and meal, the feed lot could only pay £15·5 per head for calves. Normally, good calves would not be forthcoming at this price. The system is, however, very sensitive to changes in beef and meal prices and a decrease of £11 per ton in the average price of the barley/soya bean mixture, with beef prices remaining constant, would increase the break-even calf price to £32 per head. This price is 17 per cent of that of the finished animal and would probably be acceptable to dairy farmers. On the other hand, an increase of about £10 per ton in average meal prices with beef prices remaining constant would reduce the break-even calf price to zero. If we postulate that the price of calves should be 17 per cent of the price of finished cattle, then for a break-even situation the beef/meal

TABLE 6: *Barley beef 0–11 months (1,000 animals)*

Costs, returns and capital	£
Buildings	
Total capital cost (£125,000 less grant £12,000)	
Annual repayment over 10 years @ 15%	22,520
Machinery and equipment (£10,000)	
Annual repayment over 5 years @ 15%	2,990
Other costs	
Fuel, oil, electricity	800
Labour (3 man units)	7,000
Milk replacer	4,617
Meals, 1,324 tons barley @ £65 per ton £86,060	
209 tons soya bean @ £75 per ton £15,676	101,735
Straw £5 per head	4,925
Transport and marketing	2,865
Vet, medicines and other miscellaneous	8,000
Interest on capital (other than buildings and machinery)	9,197
Break-even cost of calves (£15·47 each)	15,470
Total costs	180,120
Sale 950 animals 7·9 cwt @ £24 per cwt	180,120
Calf price as a percentage of fat cattle price	8·14%

Loan capital outstanding	
Fixed capital	£
Buildings over 10 years	113,000
Machinery and equipment over 5 years	10,000
Working capital	
Stock (calves)	15,500
Other costs	128,600
Total capital	267,100

price ratio (price of 1 cwt of beef divided by price of 1 cwt of meal mixture) would need to be about 8·6/1 compared with the present ratio of 7·2/1.*

In view of the high level of cereal prices in recent years it is doubtful if an 8·6/1 beef/meal price ratio will normally obtain in the long run. In some years, perhaps, grain prices will be sufficiently low to make barley beef an economic proposition but in most others, prices are apt to be too high. We cannot, therefore, see this system as a permanent solution to the problems posed here, unless the organisers can obtain a very high premium for the type of beef produced and obtain access on a long-term basis to a relatively cheap supply of grain.

Beef Production from 2 year Old Cattle

In this system, which has been experimented with in University College, Dublin,[13] bull calves are bought during the first week of March, are reared on a simple early weaning system and turned out to pasture in early April, approximately two weeks after weaning. Concentrates are fed at the rate of 2·2 lb per day until mid-June when they are discontinued. No concentrates are fed, subsequently, at pasture. The calves are yarded in December, fed on silage over the winter and come out for their second grazing season on about 10 April. Animals are housed for their second winter on 1 November and reach finishing weight of 10½ cwt by 1 March at two years of age. During the second winter they are fed silage to appetite and 5 lb grain per head daily to give added bloom and enhance chances of getting the best price possible. Total concentrate consumption per animal from purchase to slaughter is 7½ cwt meal plus 25 lb of milk replacer. Of the meal, 2 cwt is a high protein compound fed in the calf rearing stage and 5½ cwt is rolled barley fed in the final winter. A total of 8·6 tons of

*For method of calculating this ratio see Appendix B (2).

[13]Caffrey, P. J. and P. O. Brophy, "Beef production from spring born calves using an intensive grassland system". *Journal of the Irish Grassland and Animal Production Association*, 1973.

silage per animal is used, of which 3 tons is fed in the first winter and 5·6 in the second. Total land required for grazing and silage is 1·1 acres per finished animal per annum.* Mortality is 4 per cent in the first six months and 1 per cent thereafter. Calves are housed in the cattle houses by placing covers on the slats.

The costs, returns and capital requirements for this system are set out in Table 7. Interest payments on costs other than calves are calculated in the same way as for the barley beef system by constructing a monthly outlay schedule. The method of calculating the break-even calf price is shown in Appendix B (3).

As can be seen from Table 7 this system is capable of paying current rates for labour, rent, interest on capital and of leaving a price of about £38 for the calf. The calf price is 15·7 per cent of the value of the finished animal and is very little lower than the long run average of 17·2 per cent given in Table 2. On this basis therefore the system would appear to be viable. It has, however, a number of drawbacks which should be mentioned. In budgeting the system we have used a rental value of £35 per acre, which is much less than the annuity that would have to be paid if the land were being purchased outright. If we assume that the purchase price of land is £500 per acre and the repayment period 35 years at 15 per cent interest per annum, then the annuity payable is £75·60 per annum. This, or indeed any other cattle system, will not generate sufficient surplus to pay such an annuity. Hence the co-op could not buy land for this purpose.

The second point which should be made is that the two year system has a capital requirement of £407 per animal or almost half a million pounds for a 1,000 cattle unit. Organisations not owning land might have difficulty in raising such a large

*Caffrey obtained stocking rates of one finished animal per 0.9 acres at UCD farm in Celbridge, Co. Kildare, but Dr Aiden Conway of An Foras Talúntais considers that a stocking rate of 1.1 acres per animal would be more realistic for western districts.

TABLE 7: *Beef production from 2 year old bullocks (1,000 animals)*

Costs, returns and capital	£
Building and fencing	
Total capital cost (£161,000 less grant £12,000) Annual repayment over 10 years @ 15%	29,700
Machinery and equipment (£10,000) Annual payments over 5 years @ 15%	2,990
Other costs	
Fuel, oil, electricity	1,700
Labour (4 man units)	9,000
Land rental 1,045 acres @ £35 per acre	36,575
Lime and fertiliser @ £30 per acre	31,350
Silage-making (including additive and covering)	14,250
Milk replacer, 20 gals per animal	3,086
Meals, 356 tons @ £65	23,140
Transport and marketing	2,850
Vet, medicines and other miscellaneous	8,000
Interest on capital other than buildings and machinery	28,885
Break-even cost of calves (£37·90 each)	37,900
Total costs	229,425
Sale of 950 bullocks 10½ cwt @ £23 per cwt	229,425
Calf price as a percentage of fat cattle price	15·7%
Loan capital outstanding	
Fixed capital	£
Buildings over 10 years	149,000
Machinery and equipment over 5 years	10,000
Working capital	
Stock (calves and yearlings)	139,000
Other costs	109,000
Total capital required	407,000

amount of capital. But even if co-operatives could rent land and borrow capital they may be unwilling to get involved in cattle production. These organisations have many competing uses for scarce capital and projects other than beef are likely to yield far higher returns on borrowed money. After all the co-op has to compete with private enterprise in most activities and one cannot find fault with it for pursuing a policy of optimum allocation of capital.

We feel, therefore, that if units of this nature are to become operative they would need government support initially in the form of generous capital grants or interest rebates on borrowed capital. Pilot units would need to be established and the government would need to set these up also. Nor is it unreasonable to expect such support, particularly in the underdeveloped areas. The benefits of large beef units in these areas would accrue to the community at large in the form of greater economic activity. If they were assured of good prices for calves, many farmers would likely substitute dairying for low income drystock farming, thus increasing farm incomes in the region. The multiplier effect of this increased income would affect all other activities in the area and would, no doubt, generate subsidiary industries such as cattle slaughtering and offal processing which might prove more viable in the long run than other forms of grant aided enterprises. Hence the social consequences resulting from integrated cattle fattening units in the poorer regions are manifold, and over the long term they might have the effect of helping to slow down the rapid rate of rural depopulation.

Funds for aiding cattle fattening units could be made available from a number of sources, chief among them being the EEC Regional Fund, the Disadvantaged Areas Fund or the FEOGA Guidance Fund. The Land Commission could also co-operate by making land available initially on long leases and afterwards, perhaps, at reduced selling prices. All supports should be extended first to a few pilot projects in the west and north and then extended if the schemes proved viable.

Winter Fattening System

If co-operatives with the aid of EEC funds were to embark on integrated beef fattening systems we feel that they should complement such systems on a permanent basis with winter fattening of cattle purchased in the open market in autumn. This arrangement would have a number of advantages, both from the point of view of the co-operative and the local community. The co-op would be buying cattle in autumn at a time when prices are usually low and so could expect a fairly substantial price rise over the winter. The operation should therefore prove profitable in the long run. Also in a year when calf prices are excessive the co-op should not purchase calves in spring but should conserve the grass and buy stores in autumn. From the local community point of view the adoption of wintering systems on a large scale would help to stabilise the price of stores in autumn and might prevent some of the very severe autumn slumps which are a feature of the cattle trade. It would also make more cattle available for slaughter in spring at a time when fat cattle are scarce and when beef factories are usually working on short time.

The costs, returns and capital requirements for a 1,000 unit wintering system are shown in Table 8.[14] Under this system bullocks weighing approximately 8 cwt are purchased in late October and November, are fed over the winter on silage and meals and are sold fat weighing 10½ cwt in April. During the winter each animal consumes 5 tons of silage and 8 cwt of meal.*

As can be seen from Table 8 the total capital requirements for the unit is £281,000 of which £148,000 is invested in stock and is outstanding for about six months. A further £55,000 is invested in other working capital and is outstanding for a

[14]The technical data for this system are taken from McDonnell, J. J. and R. B. McCarrick, "Beef Farming for Profit", *International Meat Packers and Cork Marts*, October 1970.

*At present beef/meal price ratios it would be more profitable to feed less meal and more silage but for our budget we have used the McDonnell and McCarrick technical data as published.

TABLE 8: *Winter fattening of 1,000 bullocks*

Costs, returns and capital	£
Buildings	
Total capital cost (£80,000 less grant £12,000)	
Annual repayment over 10 years @ 15%	13,552
Machinery and equipment (£10,000)	
Annual repayment over 5 years @ 15%	2,990
Other costs	
Fuel, oil, electricity	600
Labour (3 man units)	7,000
Land rental 250 acres @ £35	8,750
Lime and fertiliser @ £30 p.a.	7,500
Silage-making 5,000 tons @ £1·25	6,250
Meals, 7 lb/day (i.e. 422 tons @ £65)	27,430
Transport and marketing	3,000
Vet, medicine and other miscellaneous	2,500
Interest on capital other than buildings and machinery*	12,555
Break-even cost of store bullocks (£18·52 per cwt)*	148,165
Total cost	240,293
Sale of 995 bullocks 10½ cwt @ £23 per cwt	240,293
Price per cwt of fat cattle as a percentage of store price	124·2%

Loan capital outstanding	£
Fixed capital	
Buildings over 10 years	68,000
Machinery and equipment over 5 years	10,000
Working capital	
Stock	148,000
Other costs	55,000
Total capital required	281,000

*Interest and break-even cost of bullocks calculated as shown for the other systems in Appendix B.

shorter period, while the land requirement is only 250 acres or one-quarter acre per animal fattened. The viability of the system, however, depends entirely on the autumn/spring price rise. In Table 8 the break-even rise is £4·5 per cwt or 24 per cent of the purchase price. This is about equivalent to the long term average, so that if past seasonality patterns were to continue, the system would hardly be worth undertaking. We expect, however, that under EEC conditions (with price reviews every spring) the winter price rise will be proportionally greater than in the past. Hence, if EEC grants could also be made available, the wintering system would be definitely viable and would provide a valuable outlet in autumn for farm reared store cattle.

Conclusions Relating to Intensive Feeding Systems

The potential of large beef units for stabilising calf and store prices depends on the extent of their adoption. Given the existence of incentives, there are many co-operatives in the west and north-west that would be willing to invest in these projects. The proposed 0-2 year system would integrate the weaning and fattening processes and should eliminate many of the wasteful practices associated with the sale and transport of calves and store cattle. It should provide a steady source of demand for a certain proportion of dairy bull calves and reduce the supply of stores coming on the market in autumn. Winter fattening units would provide a market for the latter animals and should help to maintain their price at some fairly acceptable level, while both systems, by making more fat cattle available in spring, would help to improve resource use in the beef slaughtering and ancillary industries.

TABLE A1: *Cattle numbers in major beef producing and consuming countries '000 head.*

	53/54	54/55	55/56	56/57	57/58	58/59	59/60	60/61	61/62	62/63	63/64	64/65	65/66	66/67	67/68	68/69	69/70	70/71	71/72	72/73
EEC Countries:																				
France	16,889	17,322	17,572	17,693	17,924	18,466	18,735	19,502	20,583	20,286	20,041	20,244	20,640	21,184	21,417	21,566	21,719	21,737	21,746	21,902
Germany	11,641	11,521	11,552	11,815	11,948	12,127	12,480	12,867	13,277	13,531	13,014	13,053	13,680	13,973	13,981	14,061	14,286	14,025	13,638	13,890
Netherlands	3,025	2,995	2,962	3,105	3,204	3,396	3,507	3,623	3,817	3,695	3,567	3,751	3,968	4,030	4,116	4,277	4,366	4,201	4,306	4,672
Belgium/Luxembourg	2,505	2,523	2,542	2,617	2,734	2,790	2,846	2,881	2,991	2,965	2,824	2,893	2,944	2,942	2,986	3,030	3,080	3,032	3,022	3,064
Italy	8,817	8,670	8,454	8,476	8,649	9,062	9,399	9,827	9,520	9,152	8,608	9,183	9,386	9,503	9,539	10,024	9,563	8,721	8,611	8,571
Total EEC Six	42,877	43,031	43,082	43,706	44,459	45,841	46,967	48,700	50,188	49,449	48,054	49 124	50,618	51,632	52,039	52,958	53,014	51,716	51,323	52,099
United Kingdom	10,718	10,688	10,907	10,881	10,951	11,291	11,771	11,936	11,859	11,716	11,627	11,943	12,206	12,342	12,151	12,374	12,581	12,804	13,483	14,498
Ireland	4,504	4,483	4,536	4,417	4,466	4,684	4,741	4,713	4,742	4,860	4,962	5,359	5,590	5,586	5,572	5,688	5,966	6,134	6,442	6,545
Denmark	3,151	3,180	3,168	3,214	3,273	3,379	3,397	3,593	3,504	3,343	3,277	3,345	3,374	3,282	3,141	3,000	2,842	2,723	2,799	2,750
Total EEC Nine	61,250	61,382	61,693	62,218	63,154	65,195	66,876	68,942	70,293	69,368	67,920	69,771	71,791	72,842	72,903	74,020	74,403	73,377	74,047	75,892
Other Countries:																				
Canada	9,379	9,481	9,674	10,387	10,301	10,120	10,497	10,704	10,940	11,214	11,560	11,908	11,651	11,757	11,783	11,483	11,836	12,225	12,275	12,734
USA	95,679	96,592	96,804	92,860	91,176	93,322	96,235	97,534	100,002	103,736	106,743	109,000	108,862	108,645	109,152	109,885	112,303	114,578	117,862	121,990
Argentina	43,596	44,230	45,396	43,980	40,736	41,206	44,550	43,165	43,300	40,009	42,300	46,709	47,000	51,227	51,465	48,298	48,440	49,786	52,300	55,464
Brazil	57,626	61,442	63,608	66,695	69,549	71,420	72,829	73,962	76,176	79,076	79,855	84,167	90,505	89,969	89,896	92,739	95,150	97,864	98,500	100,500
Uruguay	7,819	7,600*	7,305	7,170*	7,040*	6,902	7,505	8,792	8,835	8,866	9,145	8,142	8 188	8,350	8,600	8,900	8,548	8,700	9,309	9,356
Australia	15,602	15,836	16,457	17,257	16,892	16,257	16,502	17,332	18,033	18,549	19,055	18,816	17,936	18,270	19,218	20,606	22,162	24,393	27,377	28,975
New Zealand	5,782	5,924	5,950	5,809	5,886	5,973	5,992	6,446	6,598	6,691	6,696	6,801	7,217	7,747	8,247	8,605	8,777	8,819	8,774	9,215
Total Other Countries	235,483	241,105	245,194	244,158	241,580	245,200	254,110	257,935	263,884	268,141	275,354	285,543	291,359	295,965	298,361	300,516	307,216	316,365	326,396	338,234
Total all countries	296,733	302,487	306,887	306,376	304,734	310,395	320,986	326,877	334,177	337,509	343,274	355,314	363,150	368,807	371,264	374,536	381,619	389,742	400.444	414,216

*Estimated.

Source: FAO Production Yearbook 1955–1971, Monthly Bulletins of Agricultural Economics and Statistics 1973 and *1974.*

Appendix A

World Cattle Production

DUE to difficulties of measurement and different definitions of production in the various countries figures given for beef supplies in the international publications are of doubtful reliability. On this account we have chosen cattle numbers as the best indicator of world beef production. Figures for cattle numbers in the main beef producing and consuming countries of the world for the years 1953/54 to 1972/73 are given in Table A1 of this Appendix.* These figures show that over the period in question aggregate cattle numbers for all the countries listed increased by 40 per cent from 297 million in 1953/54 to 414 million in 1972/73. The aggregate data for all the countries listed which are plotted in Figure A1 show that the upward trend was very regular except for the period 1955 to 1957 when numbers actually declined. After 1957 production grew steadily with accelerated increases between 1963 and 1966 and from 1968 onwards.

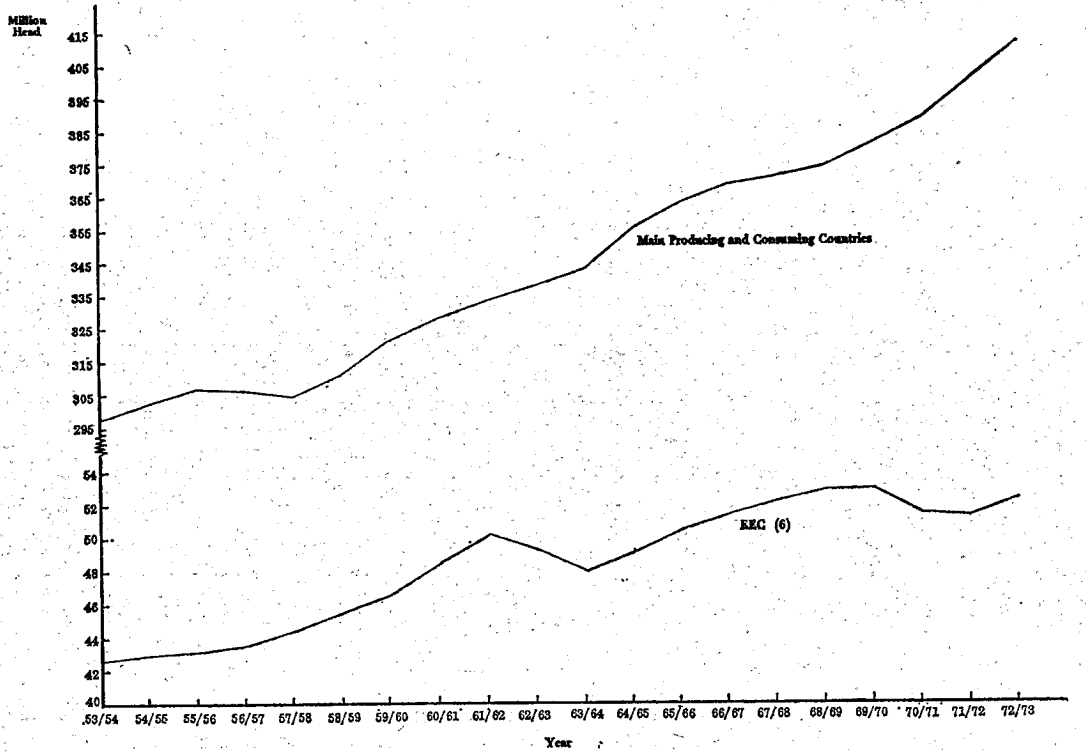
The trend in total EEC (6) numbers which is also shown in Figure A1 has not been nearly as regular as that in the other series, particularly in recent years. Prior to the introduction of the transitional phase of the CAP in 1962, cattle numbers in the six states had been increasing in a rather stable manner.[15] However, after 1962, with the stage by stage establishment of the common market for grain, cattle numbers, particularly in Italy, fell significantly and the peak in numbers reached in 1961/62 was not surpassed until 1965/66. From then onwards cattle numbers in the EEC have moved rather erratically. In 1970/71 at a time when world cattle stocks generally were expanding, EEC cattle numbers were contracting. After this contraction, however, numbers began to move upwards again in 1972/73 and into 1973/74. It would appear, therefore, that the system of support pricing adopted by the EEC does not succeed in eliminating fluctuations in cattle numbers.

EEC is, however, not the only important producing region which has a fluctuating level of cattle production. Figure A2 shows that

*Figures for the socialist countries are omitted.

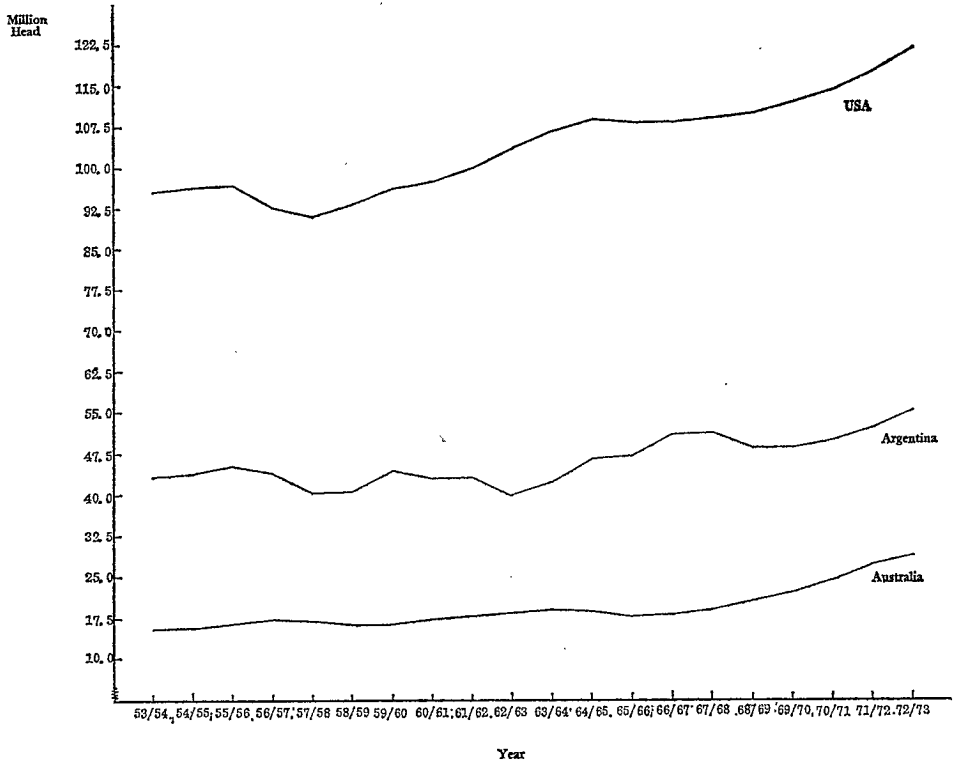
[15]Regulations for the common organisation of the markets for pigmeat and grain came into effect in August 1962 while similar arrangements for cattle and dairy products were introduced in November 1964. Intra-community barriers to trade in beef and dairy products were progressively dismantled over a transition period and in 1968 a common market in beef and dairy products was established.

FIGURE A1. Cattle numbers in EEC (6) and in main producing and consuming countries 1953/54–1972/73.



Source: Table A1.

FIGURE A2. Cattle numbers in three major beef producing countries 1953/54–1972/73.



Source: Table A1.

Argentina has a particularly cyclical production pattern. In that country numbers reached 45 million in 1955/56, declined and increased erratically thereafter and did not reach the 1955/56 level again until 1964/65. After that they increased to 51 million in 1967/68, declined to 48 million in 1969/70 and have shown a steady increase since then.

Cattle production in the USA increased by about 28 per cent between 1953 and 1973 but except for two periods of decline, the pattern of production was much smoother than that in the Argentine. The most serious decline occurred between 1955 and 1958 when numbers dropped by six per cent while the second decline which was not nearly so serious took place between 1964 and 1966. In the intervening years there has been a steady upward movement of stocks.

Though the percentage growth in production in Australia has been much more rapid than that in the USA the pattern of production has been much similar. Numbers increased from 15·6 million in 1953/54 to 17·3 million in 1956/57. After that they declined to 16·3 million in 1958/59, rose steadily to 19·1 million in 1963/64, declined to about 18 million between 1965 and 1967 and since then have shown a steady upward increase to about 29 million in 1972/73.

The patterns of production in most of the other non-European countries shown in Table A1 parallel closely those in the USA, and Australia. All these countries showed a steady growth in numbers over the years except for two periods in the 1950s and 1960s when numbers actually declined. Brazil, however, is one important producing country which is a notable exception to this pattern of production. As in the other countries, cattle numbers increased substantially over the period in question, but unlike these countries there was no break in the upward trend in any year.

The data in Table A1 in conjunction with data collected in a previous study by O'Connor (1961)[16] for the period 1930–1960 indicate that there are definite cattle cycles of about 8–10 years duration in most of the major non-EEC countries. These cycles are more pronounced in some than in other countries and are particularly severe in the three main producing countries, Argentina, Australia and USA. Prior to the introduction of the Common Agricultural Policy the six original countries of the EEC showed a very steady growth in cattle numbers but since then numbers have moved in a rather erratic pattern.

[16] *Op. cit.*, p. 4.

Appendix B

1: Calculating interest payments and break-even cost of calves for barley beef system

Let C = Total costs from Table 6 other than cost of calves and interest on capital = £155,452.

I = Interest on capital other than on calves, building and machinery = £7,170 (from cash flow schedule).

x = Break-even cost of calves.

r = Rate of interest on calves for $10\frac{1}{2}$ months = 0·131

$$= \left(\frac{0{\cdot}15 \times 10{\cdot}5}{12}\right)$$

SV = Sale value of fat cattle = £180,120.

Then for a break-even situation

$SV = C + I + x + rx$

£180,120 = £155,452 + 7,170 + x(1·131)

£17,498 = 1·131x

£15,471 = x

£2,027 = rx

Total interest other than that on buildings and machinery

= £7,170 + 2,027

= £9,197

2: Calculating the beef/meal price ratio to give a break-even calf price of 17 per cent of the value of an 11 month old fat animal

Let P_b = Price per cwt of fat animal

W = Liveweight of fat animal=7·9 cwt

P_c = Price of calf=0·17 P_bW

P_m = Price per cwt of meal

M = Amount of meal consumed per animal=32·27 cwt

a = Other costs*=0·311 P_bW (based on Table 6)

r_1 = Rate of interest on calf=0·131

r_2 = Rate of interest on meal=0.0466 (from cash flow schedule)

Break-even equation:

$$P_bW = P_c+r_1P_c+P_mM+r_2P_mM+a$$

$$= 0{\cdot}17P_bW+0{\cdot}131\,(0{\cdot}17P_bW)+32{\cdot}27P_m+0{\cdot}0466(32{\cdot}27P_m)+0{\cdot}311P_bW$$

$$7{\cdot}9P_b = 1{\cdot}343P_b+0{\cdot}176P_b+33{\cdot}774P_m+2{\cdot}457P_b$$

$$3{\cdot}924P_b = 33{\cdot}774P_m$$

$$\frac{P_b}{P_m} = \frac{33{\cdot}774}{3{\cdot}924} = 8{\cdot}6$$

*Other costs from Table 6 and Appendix B (1)=Total costs (£180,120) less cost of calves, less interest on calves (£15,470+2,027) less cost of meals, less interest on meals (£101,735+4,745)=£56,143=0·311×180,120.

3: Calculating break-even cost of calves for 2 year old fattening system

Let x_1	=	cost of 1,000 calves
c_1	=	variable cost other than interest of rearing calves for 1 year=£62,890
x_2	=	value of 1 year old cattle=x_1+c_1
c_2	=	variable costs other than interest of rearing 1–2 year old cattle=£67,061
O_c	=	other costs=c_1+c_2=£129,951
R	=	annual repayment on buildings and machinery =£32,690
△stocks	=	zero
$\frac{r}{100}$	=	annual rate of interest
Ic	=	interest on other costs=0·062 × 129,951=£8,080*
S	=	sale value of 1,000 fat cattle=£229,425
P	=	profit=zero

Profit equation:

P	=	$S-x_1-O_c-R-I_c-\frac{r}{100}(x_1+x_2)+\triangle$stocks
0	=	$229{,}425-x_1-129{,}951-32{,}690-8{,}080$ $-0{\cdot}15(2x+62{,}890)+0$
£58,704	=	$x_1+0{\cdot}3x_1+9{,}434$
£49,270	=	$1{\cdot}3x_1$
£37,900	=	x_1

Total interest other than that on buildings and machinery

	=	£8,080+0·15 [(2 × 37,900)+62,890]
	=	£8,080+20,805
	=	£28,885

*Figures derived from cash flow schedule.

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