THE EFFECTS OF E.E.C. PRICES ON IRISH AGRICULTURE

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CHAPTER I

AGRICULTURAL BACKGROUND

Though the importance of agriculture to the Irish economy is declining, it is and will be in the foreseeable future a major - if not the largest - sector. The decline in its relative importance is due to the more rapid growth of other sectors and to the long term - and worldwide - phenomenon of declining agricultural populations. The significance of agriculture may be measured in terms of income generated, numbers employed and its contribution to the balance of payments. The latter is of particular importance to a small economy heavily dependent on international trade and suffering from a chronic balance of payments problem.

In 1965 the National Income was approximately £817 million of which £166 or 20.3 percent was earned in agriculture. Over the preceding five years, agriculture's share had declined from about 25 percent. While national income increased by about 69 percent in this period, income earned in agriculture rose by only 28 percent. However, as the numbers employed in agriculture declined and the numbers employed in the other sectors increased, during the period, income per head rose more rapidly than in the rest of the economy.

Table 1-1
National Income of Ireland, 1958-65

Year	£ M Total National Income	Income from Agriculture, Forestry & Fishing
	- million pounds -	
1958	489.7	117.0
1959	514.1	127.5
1960	550.3	130.4
1961	594.7	136.6
1962	638.7	140.9
1963	676.2	138.5
1964	767.2	162.0
1965	817.0	163.0

Source: Central Statistics Office "Statistical Abstracts of Ireland 1966" Stationery Office, Dublin 1966.

In 1961, 35.7 percent of the total working population was employed in agriculture; the 1966 census showed this proportion to have fallen to 31.07 percent. This means that not only is the rate of decrease fairly low by European standards, but also that the part of the population dependent on agriculture is high by the same standards.

The third indication of the place of agriculture in the economy is its ability to export its output. In 1960, agricultural exports represented nearly 60 percent of total exports and when industrial products derived mainly from agriculture were added to this, the total came to over 73 percent. With the development of the industrial sector, these proportions are currently down to about fifty and sixty percent. Consequently, agricultural prices on the export market are of vital importance to the economy, and it is the opportunity of selling agricultural products at considerably higher prices that provides the main argument for Ireland's application to join the European Community.

The total land area of the country is 17.02 million acres. All but 5.39 million acres, consisting of woods and plantations, grazed and barren mountain, bogs, marshes, water, towns and roads, is agricultural land. The utilization of it is broadly as follows:

Pasture	71 percent
Hay	17 percent
Crops	12 percent

This utilization of the land has not changed greatly over a long period. Apart from increased production of crops during the periods of the two World Wars, this has been the pattern all this century.

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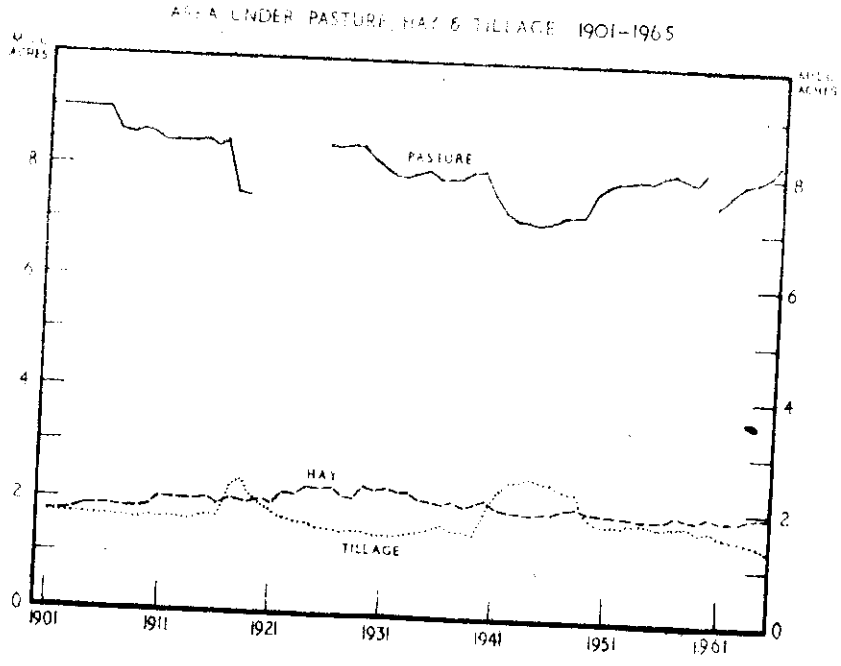


Figure 1 - 1. Source (1)

With over 88 percent of agricultural land producing grass, livestock is obviously of the greatest importance. In 1967 the gross value of agricultural output (excluding the value of changes in livestock numbers) was £271.9 million at current prices. The composition of this total output is shown below.

Table 1-2
Percentage Breakdown of Agricultural Output
1967

Commodity	Percentage of Total Output
Cattle and calves	32.6
Milk	26.1
Sheep and lambs	4.3
Wool	.6
Pigs	10.1
Poultry meat	2.2
Eggs	3.4
Other livestock	2.0
Total livestock	81.3
Wheat	3.3
Oats	.3
Barley	4.0
Sugar beet	2.9
Potatoes	2.9
Others (incl. turf)	5.3
Total crops	18.7
Total agricultural output	100

Source: Central Statistics Office "Statistical Bulletin" (quarterly) Various dates, Stationary Office, Dublin.

The importance to the economy of the livestock sector is increased by its contribution to exports. About 80 percent of cattle output is exported in one form or another, about 40 percent of both sheep and pig output and 30 percent of dairy output.

Cattle production has shown a remarkable stability over the long term, though subject to short term cycles. Between the beginning of the century and the late forties, there was virtually no long term trend in number, but since then there has been a marked increase. In the more recent past output of cattle and milk has increased by an average of 7.8 percent (of the 1959 level) per annum.

Cattle prices are determined by the market. Other things being equal, large numbers of cattle on offer at any one time will drive the price down. This shows up to some extent in annual prices but is much more obvious degree in the very short run. Over this period both price and quantity increased, suggesting significant growth in demand, even though the increase in price was much less than the increase in quantity. While day to day and seasonal variation in prices for cattle can be wide, average annual prices do not reflect all of this variation. In the nine year period there was some tendency to widen the price difference between cattle at different stage of maturity. In general the price for finished cattle rose more than the price for unfinished. Prices in 1967 were between 3 and 18 percent higher than in 1959. There may also have been some increased preference for younger animals.

Pig numbers, also were relatively stable up to the period of the second World War, though cyclical movements were clearly marked. Numbers fell sharply during the war years, but increased in the post war years to above their pre-war level. In the early part of the 1959-67 period the rate of increase became higher, but the last two years apparently coincided with a down swing in the cycle, so that 1967 output was only 21 percent above the 1959 level. The price of pigs is not determined --

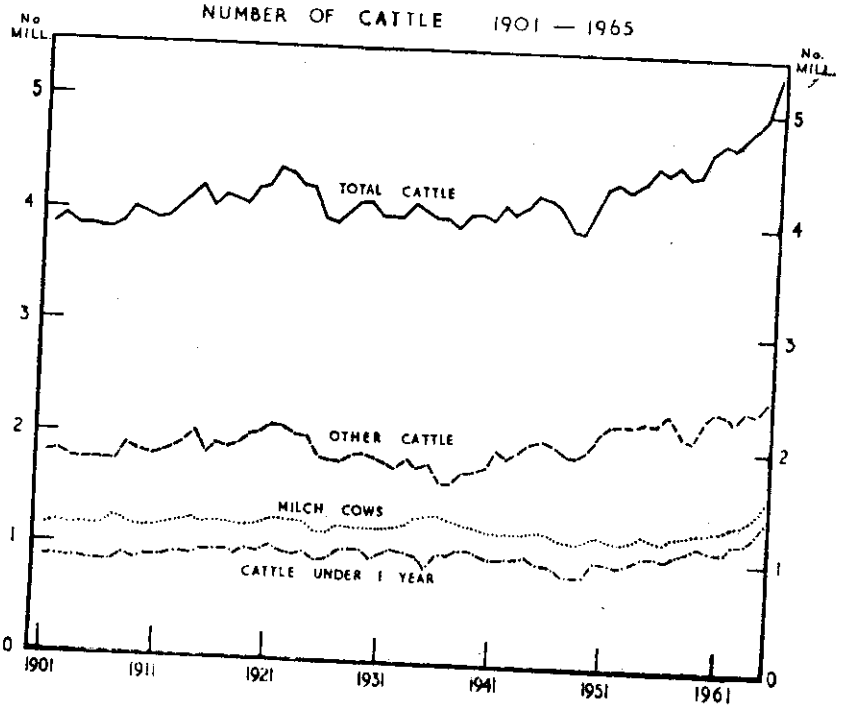


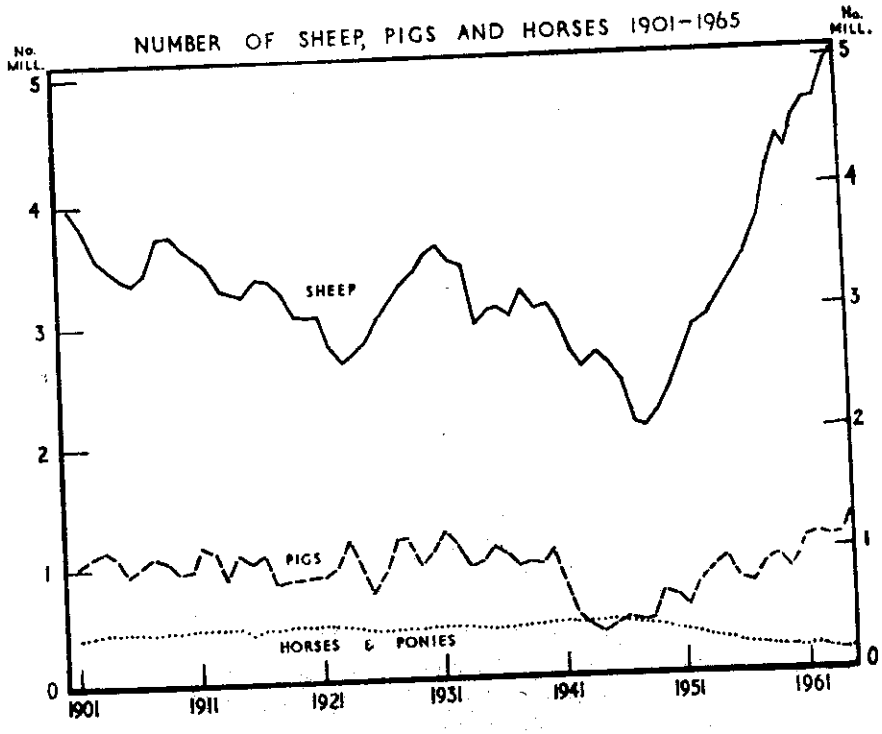
Figure 1 - 2. Source (1).

at least directly - by market forces and this is reflected in its relative stability. Over the period price showed little variation from year to year and increased by only 12 percent.

In the very long term, production of sheep has shown much more variation than either cattle or pigs, but since the thirties has shown a fairly steady increase with little cyclical movement. Prices for sheep are determined by supply and demand but show greater variation than do cattle prices. In the nine year period there was some change in the relationship between prices; the price of lamb gained more than the price of mature animals.

Barley, oats and wheat are the grain crops produced. The production of wheat in significant quantities, except for the period of the first World War, dates back only to the thirties when its production was encouraged as part of a policy of self-sufficiency. Production rose to a peak during the second World War, but subsequently declined, though irregularly. It is still an important cash crop on many farms. The production of oats has declined steadily since the early years of the century, though again with the exception of the war periods, and rapidly since the second World War. The production of barley in the past has shown much less variation but since about 1951 has been increasing rapidly. The increase has been mainly in feeding barley, which in 1965 represented about 75 percent of the barley output. This development is associated with the increase in pig numbers which has been going on since the forties.

Up to 1964, wheat prices fluctuated widely from year to year, but in 1965, 1966 and 1967 prices were set at successively higher levels;



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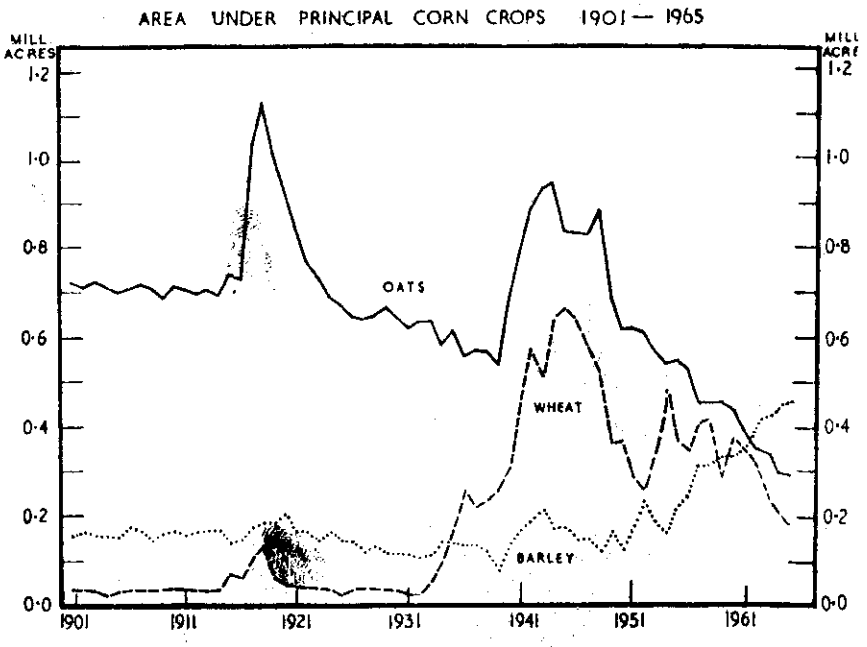

Figure 1 - 4. Source (1)

this was followed by an increase in wheat production. The price of barley is also administered and showed considerable fluctuation but no marked trend over the period. Malting barley and oats actually became cheaper over the period.

In summary, trends in the last five or ten years are consistent with longer term trends. Cattle numbers have been increasing since the late thirties and sheep and pig numbers since the late forties. The decline in wheat and oats dates back to shortly after the second World War. The beginning of the increase in barley production is more difficult to date due to short term fluctuations but it probably coincides with the trend in pig production.

All this suggests a picture of a stable agriculture, continuing on traditional lines, that has not been subjected to the more violent forces experienced by agriculture in other parts of the world. This is only true in part. The next chapter deals with change experienced by agriculture.

CHAPTER II

AGRICULTURE AND CHANGE

The ability of agriculture to adjust to the requirements of a new situation depends to a large degree on the structure of agriculture. Farm size is an important part of structure. Like other aspects of agriculture, farm size has shown a slow rate of change in the past. Fennell [3] has shown that the percentage decline in the number of all holdings, in the period 1931 to 1965, was only 15.5, less than 0.5 percent per annum. As could be expected, the biggest decrease took place on the farms of under thirty acres.

Some insight into the prevalence of off-farm employment by the operators of these small farms is given by a comparison of the number of holdings and the number of farmers reported to work full time on such small farms. In the Northern and Western provinces, the number of farmers is closer to the number of small holdings than in the East or South. This is consistent with the lower opportunities for off-farm employment and the consequence more frequent dependence on the farm alone. In addition, much of the poorer land of the country is in the provinces of Connacht and Ulster so that the comparison with equal sized farms in other areas is misleading. There are obviously more farms in these two provinces whose ability to adapt to changing circumstances is very limited by their meager resources. This suggests the real division between areas of predominantly subsistence farming and the areas of commercial farming. The division between these two does not follow provincial lines, but the greatest concentrations of subsistence farms occur in these two provinces.

Table 2-1
Percentage of Farmers and Holdings of Different Sizes by Province (1960, 1961*)

	Size of Holdings (acs.)						
	1-15	15-30	30-50	50-100	100-200	₱200	Total
Leinster							
Holdings	25.2	19.4	19.1	20.2	11.7	4.4	100
Farmers	8.2	19.1	24.7	27.1	20.9		100
Munster							
Holdings	19.6	17.3	21.4	26.8	11.9	3.0	100
Farmers	7.4	10.8	25.5	32.9	17.4		
Connacht							
Holdings	29.2	36.3	24.2	12.0	2.5	0.8	100
Farmers	20.4	37.0	27.1	12.4	3.1		100
Ulster							
Holdings	33.4	28.8	19.4	13.2	4.0	1.2	100
Farmers	27.6	30.0	22.9	14.6	4.9		100
State							
Holdings	24.4	25.3	21.4	18.7	7.8	2.4	100
Farmers	14.5	25.6	25.5	22.5	11.9		100

*Holdings 1960; Farmers 1961
Source: Feanall, Rosemary "Structural Change in Irish Agriculture" in Irish J. of Agr. Econs. & Rur. Soc. 1,2, 1968.

The characteristics of the farming population determine their willingness - as opposed to ability - to change. Characteristics documented are age and marital status of farmers. It seems reasonable to suppose that in general age of farmers would be negatively related to readiness to change. While being unmarried might allow a farmer to take greater commercial risks and broaden the field of his possible activities, it also reduces the incentive to build up his business to provide for children or to pass on the farm to his direct heir as a viable concern. The latter effects are more likely than the former when the typical unmarried farmer (as well as the married one) is middle aged or older.

Over 70 percent of the farmers in nearly all size groups and in all four provinces were over forty five in 1961[1]; and less than ten percent in all groups were under thirty five. The proportion of farmers under thirty five is lower on the smaller farms and lower in Connacht and Ulster. This suggests that both the ability and the willingness to adapt to changes in the economy is least among those farmers and in those areas most in need of change. In fact it is true to say that these who depend completely on a farm that is not viable by current standards have failed to adapt to present conditions. A farm of fifteen acres (unless it has some capital intensive enterprise such as glasshouse crops,which is rare) almost certainly cannot produce an income that would be acceptable in other sectors of the economy.

As regards the number of unmarried farmers, the proportion increases on the smaller farms in all areas, reaching its highest level of 40.7 percent (for all ages) on the under fifteen acre farms in Ulster. But overall the level is high which suggests a high proportion of farmers who are relatively inflexible in face of change.

These two characteristics of the farming population are consistent with the type of farming predominant in nearly all areas of the state. Cattle grazing is essentially an extensive enterprise with low returns per acre and low labour requirements per acre. Its popularity is doubtless encouraged by the relatively high level of elderly and unmarried farmers. The latter may not only lack the incentive to operate their farms more intensively, but also be unable to do so by their own labour

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[1] The two exceptions to this are in Munster. Only 69.5 and 69.8 percent of the farmers operating holdings of 50 to 100 acres and over 100 acres, respectively.

only. It is harder to reconcile the idea of small farms *per se*, with an extensive system of exploitation, a situation that existed even when the agricultural population was considerably larger.

Another characteristic that is probably related to ability to adapt to new circumstances is reluctance to use medium or long term credit. While the traditional merchant credit, from spring until harvest, or other well established period, is very common, O'Neill [4] noted a marked reluctance to use medium or long term credit. While this reluctance is almost certainly decreasing, it could still operate as a barrier to change to those farmers most needing it because credit has long been associated with agricultural development.

While these may be real obstacles to optimum development in agriculture, the agriculture of the Community is not without serious structural problems also, some of which are more serious than in Ireland.

Table 2-2
Farm population and farm size, Ireland and the EEC. (1966)

	Belgium	France	West Germany	Italy	Luxem-bourg	Nether-lands	Ireland
Farm size (ha.)	10.2	17.8	10.4	6.8	16.6	11.0	19.8
% of labor force in agriculture	6	17	11	24	13	9	31

Source: Statistics Office of the European Community, "Basic Statistics of the Community, 1967" Brussels, 1968; Central Statistics Office, "Census of Population, 1966" Stationary Office, Dublin, 1968.

The problem of small farms is greater in most of the member-states of the Community and the average farm size is considerably smaller in most of the member-states. This direct comparison of size must be

made in the light of the different types of farming prevailing in the different regions. Greater frequency of cropping and intensive livestock enterprises in the agriculture of the Community than in Ireland make the comparison somewhat misleading. The problem of excessive number of small farms must also be seen in the light of the relative size of the agricultural population. The smaller the relative size of the non-farm population, the more difficult it is to provide alternative employment opportunities for surplus farm labour. This problem is more marked in Ireland than in any Western European country except Greece, Spain and Portugal, and has been responsible for the almost unique demographic phenomenon of a decline in the total population during most of the present century. Ease of access to the highly developed labour markets of the United Kingdom and the United States has served the purpose that migration to the cities, from rural areas in the same state, has served elsewhere.

A further insight into the relation between the agriculture of the two regions may be obtained by comparing the level of mechanization. The table below gives a crude measure of this feature.

Table 2-3
Farm mechanization in Ireland and EEC

	Belgium	France	West Germany	Italy	Luxembourg	Netherlands	Ireland
Ha. grain/combine (1966)	74.2	88.1*	27.6	42.3	32.1	--	56.2
Ha. all crops/ tractor (1966	14.8	21.6*	--	40.5	--	8.5	21.8
Cows/milking machines.**	23.3	52.3	129.2	--	13.7	22.6	67.0

*1965
**machines 1965, cows 1965/66.
Source: Food and Agriculture Organization of the United Nations, "Production Yearbook, 1967" Rome, 1968.

Ireland occupies an intermediate position in all three ratios, and although the ratios tell us nothing about the utilization of the machinery, it seems that the level of mechanization does not differ greatly between the two areas. A more realistic comparison might be with the more similar countries, Belgium and the Netherlands. By comparison with these Ireland appears less mechanized.

The comparison of grain yields shows somewhat similar results. Both the Netherlands and Belgium have higher yields, while the other four member-states have lower yields. The milk yield for Ireland is lower than in all six EEC members, and much lower than the more efficient.

Table 2-4
Farm management characteristics, Ireland and the EEC
(Ave. 1964-66)

	Belgium	France	West Germany	Italy	Luxem-bourg	Nether-lands	Ireland
Av.yield of wheat (100 kg/ha.)	36.5	30.8	33.1	21.8	20.4	44.0	35.9
Av.yield barley (100 kg/ha.)	35.3	29.1	30.7	14.1	22.3	38.6	32.3
Milk yield per cow (kg/ann.)	3849	2763	3621	2530	3505	4188	2324

Source: Food and Agriculture Organization of the United Nations, "Production Yearbook, 1967" Rome, 1968.

CHAPTER III

COMMUNITY PRICES AND IRISH PRODUCTS

Cattle

The main tool for controlling the internal market of the Community for cattle and beef is the guide price. This is a price representing a weighted average for all types of cattle. Normally it is established for the financial year. The extent to which the market subsequently deviates from this level indicates the need for intervention buying. Each member-state may set its intervention price at between 93 and 96 percent of the guide price. When the market falls to this predetermined level, the intervention agency may buy live animals or beef to improve prices. Such supplies as are bought in this way may not be sold for thirty days, and then only if the market price has risen to at least 98 percent of the guide price. If losses are suffered in the intervention operations, the agency is compensated by the Guidance and Guarantee Fund of the Community. Thus intervention buying is not a direct charge on the exchequer of the country involved. This could be a very significant provision for a country such as Ireland, where agriculture and more specifically cattle production represents such a large proportion of the national income. For the Government to support the industry in this way out of its own funds could put a severe burden on its resources.

Turning to price comparisons between the Community and Ireland, the first problem is what prices to use. The most useful price series for the EEC appear to be a series published in "Marche Agricole" [8]. This series represents an average price, weighted by quantity, type and grade of animal, paid to the farmer. It is the series used by the

the Community for calculating fixed prices, levies, etc. The prices used for the Irish market are those published in the "Statistical Bulletin [2]. This gives prices for different types of animal, but no average for all types similar to the EEC figure. Comparing the two sets of prices is not without its difficulties. The EEC figures are for a split year beginning in July; the Irish figures are for a calendar year. An alternative source for Irish data is the series published by the EEC in the reference cited above. However there is no indication that it is weighted for the heavy seasonality of the Irish cattle trade, and it appears excessively high by comparison with the average prices for various types of animals quoted in the Irish reference.

The most realistic comparison is probably made by using the EEC average for prices in the member-states and a rather arbitrarily weighted average of the prices quoted for "fat cattle - 2-3 years old" "- 3 years old and over" and "- cows and bulls".[1] In fact, as the figures show, the comparison is not sensitive to fine differences in the prices used. Unless the estimated average Irish price is grossly in error, the magnitude of the difference between the two is not significantly affected. In a study at this level, the difference between a 50 and a 60 percent price increase is of limited consequence.

The comparison was also made for two time periods, 1963/64 to 1966/67 and for a single year 1966/67. While in general a three year price average should provide a better basis for a discussion of relative prices, the present case is one of a fairly rapidly developing market,

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[1] The classes were weighted in accordance with the proportions in which they were exported.

so that changes during the period may make the prices of the first year somewhat misleading. On the other hand, a three year average for the Irish figures does not suffer this advantage, and Irish prices declined over the period in contrast to the long run trend, so that a comparison of the last year alone would serve to exaggerate the difference.

Pig production

Methods for protecting the internal market for pigs and pig meat are simpler than in the case of cattle in the Community. Instead of national guide prices, there is a single base price for the Community. The level at which individual member-states may intervene varies widely enough to allow different prices in different regions. The intervention level must be between 85 and 92 percent of the base price.

The prices used in the comparison come from the same sources as the cattle prices. In this case Irish prices are quoted for bacon pigs and porkers, but not for pigs generally. A simple average of the two is used because the difference between the two is small and more accurate weighting would not affect the implications of the comparison. The time periods are also the same as in the case of cattle.

Milk

Milk prices are supported by means of a single target price for the whole community. Intervention buying takes the form of purchase of milk-products by the appropriate intervention agencies at a pre-determined level. The prices used in the comparison are those published by the EEC. This avoids problems of conversion and quality. It is assumed that because butter prices in Ireland are administered and

are stable for long periods, the EEC reports them more accurately than it can, e.g., cattle prices which vary from day to day and represent a much less standardized product. The time period is the same as the other livestock products.

Grains

Policy on grains important to the Community is based on the indicative price. Derived indicative prices for the different regions are calculated from the general indicative price. Associated with the former are intervention prices set at a level of between 90 and 95 percent of the derived indicative price. The loss, if any, suffered by intervention buying is made good by the Guidance and Guarantee Fund. The prices used for gains are from the EEC and Irish sources already cited. The time periods are the same.

Comparisons for the other crops are on the same basis.

EEC prices for Irish products

To estimate the level of producer prices in Ireland under EEC conditions requires not only some rather arbitrary assumptions about policy, but also an acceptance of the underlying rationality of the pricing system of the Community that may be hard to justify in face of the variation between the average prices of the member-states. The average prices for the member-states in the period under consideration are not fully consistent with the idea of highest prices in areas of deficit and lowest prices in areas of surplus, the difference being mainly accounted for by transport costs. The Netherlands is a producer of beef for export, yet its 1967 producer prices were the second highest in the Community.

In the same year, Belgium, a net importer of cattle and beef, had the lowest prices for cattle in the Community. It would appear that such discrepancies can be explained in part by the state of development of the common markets in particular commodities. Initially member-states' prices were widely divergent according to particular national prices, and have been gradually converging to approximate the aims of EEC policy; yet in the period under consideration they still showed strong evidence of their diverse origins. The selection of appropriate levels for Irish producer prices, in face of these problems raises difficulties. Should they be related to hypothetical guide prices, and if so, at what levels should these be and how closely could producer prices be maintained to them? The cost of transport is another problem. In ideal circumstances, this should be the major determinant of price differentials between Ireland and the continental members of the Community. These would vary with the size, type, direction and regularity of trade and these themselves are highly uncertain.

An approach that has the virtue of simplicity and should result in a reasonably conservative prices is to take the lowest average national price in the Community, less ten percent in the case of commodities exported by Ireland, as the required producer prices. This should give prices correct to an order of magnitude suitable for our purposes. Using this method gives the following results.

Table 3-1
Community Prices and Irish Equivalents (UC/100 kg.)

(1) Product	(2) Lowest EEC Price	(3) Av. Irish Price	(4) Irish equiv. Price	(5) (4) as % of (3)
Cattle	58,441	35,455	52,597*	148.35
Pigs	56,320	57,599	50,688*	88.4
Milk	8,127	6,375	7,314*	114.7
Eggs	53,959	57,199	53,959	94.3
Soft wheat	8,121	7,762	8,121	104.6
Forage barley	7,762	5, 945	7,762	130.6
Oats	6,584	5,269	6,584	125.0
Potatoes	4,147	5,967	3,732*	62.5
Sugar beat	1,332	2,221	1,332	60.0

*Equals 90 percent of lowest EEC price

It needs to be emphasized again that there is a highly arbitrary element in these figures. A good case could be made for selecting other figures to give somewhat different results. However, as was mentioned before, the results, at least in the broad terms in which we are interested in them, are not sensitive to changes in the estimated prices.

Another possible approach is to use guide prices or base prices, choosing the lowest available and deducting ten percent where appropriate to represent transport costs. This gives the following results.

Table 3-2
Estimated Irish Producer Prices in EEC Conditions (using guide or target prices) [U.C/100 kgs.]

Product	(1) Lowest appropriate EEC standard (1967)	(2) Irish prices (1967)	(3) Irish "EEC price"	(4) (3) as % of (2)
Cattle	62,431[1]	34,070	56,188[5]	164.49
Pigs	74,752[2]	59,102	67,277[5]	113.83
Milk	9,064[4]	6,375	8,158[5]	127.20
Eggs	53,959[3]	57,199	53,995	94.34
Soft wheat	9,66[4]	7,762	9,66	124.45
Forage barley	8,20[4]	5,945	8,20	137.93
Oats	6,584[3]	5,269	6,584	124.56
Potatoes	4,147[3]	5,967	3,732[5]	62.54
Sugar beet	1,332[3]	2,221	1,332	59.98

[1]Lowest national guide price for period 3.4.1967 to 31.3.1968.

[2]Base price for Community for peridd 1.8.1967 to 31.10.1967

[3]Similar to Table 3-1

[4]Average derived intervention price for lowest priced region, 1967.

[5]Corresponding figure in column (1) less ten percent.

This set of prices gives significantly better prices for pigs, milk and wheat, but only pigs change from an appreciable fall to an increase. This will be discussed later. In general, using these prices rests on the assumption that the hypothetical intervention agency in Ireland would have rather more success in maintaining producer prices at the required levels than have the intervention agencies currently operating.

CHAPTER IV

POSSIBLE DIRECTIONS UNDER EEC PRICES

The set of prices for Irish commodities discussed in the previous chapter probably errs on the conservative side - at least in terms of what could be done with the available figures - yet better figures are by no means certain and there are strong economic forces at work to oppose the maintenance of the prices of commodities at levels well above world levels in the long run, especially when the Community produces some of these commodities in quantities greater than consumption. Consequently conclusions based on conservative prices are preferable.

It is not prices alone that determine production response but the excess of prices over costs. Gross margins are what farmers usually use as a measure of comparative incomes from alternative enterprises. Sheehy [9] has produced estimates of changed gross margins under certain EEC assumptions. They are however based on guide prices and hence use higher prices than the estimates in the previous chapter. Set forth below are a similar set of estimated gross margins but based on the prices of the previous chapter.[1]

Table 4-1
Gross margins under 1967 prices and estimated EEC prices

	1967 prices	EEC estimates
	£/ac	
Cattle	18.3	28.0
Dairying	31.8	48.2
Wheat	27.7	28.8
Barley	26.5	34.1
Oats	13.0	18.0
Sugar beet	71.5	23.2

The significance of these is that in spite of large and varying changes in the relative and absolute size of prices to producers, the relative profitability (judged by gross margin) of the various enterprises under EEC conditions would not be radically changed. Excluding sugar beet, dairying is the most profitable enterprise under both sets of prices, and cattle production shows a lower profit than the best of the grain crops. This suggests that optimum adjustment to the proposed circumstances would require less radical change than a consideration of price alone would suggest or as is popularly believed.

Cattle and dairying

The fifty percent increase in cattle prices would certainly serve as a stimulant to increased production, which even with present prices is showing a steady though modest increase. The smaller increase in milk prices plus its higher absolute level of profitability is probably adequate to prevent a bottleneck in the supply of calves to the cattle industry, especially when the price of calves is likely to be increased at least proportionately to the price of mature cattle. In fact competition for calves could increase their price by far more than the proportionate increase in cattle prices because of the relatively low investment required by potential cattle producers and their consequent low commitment in terms of time. However there would be incentives to obtain better yields from cows, but both paths of expansion are possible and likely, with a new equilibrium being established for the supply of and demand for calves.

The additional factors needed for a higher level of output in the

cattle/dairying sector would consist of:

- more land and/or improved yields of grass due to improved management but more especially due to greater use of fertilizer.
- in addition (but to some extent as an alternative), increased quantities of concentrates based on barley or some imported feed grain.
- small increases in the quantity of machines, especially milking machines, but also tractors, fertiliser distributers and forage harvesters.

The requirements for these factors depends on the extent to which the expansion took place in each of the three possible ways - increasing the amount of land used, using the same amount of land more intensively or changing to a grain based technology.

Expansion <u>via</u> the first path is limited. Eighty eight percent of the agricultural land is already in grass and sheep occupy a relatively small amount of the land suitable for cattle. Expansion by intensifying the use of these resources has been going on for some time with comparatively little increase being attributable to the use of former wheat lands, and the physical restrains on intensification are probably distant for most farmers. It involves increased production of grass and storable fodder mainly by greater use of fertilizer, but it also requires more investment in concentrates and probably higher standards of management. As

has been pointed out this has been happening for some time, though it is not clear what are the major constraints that have been experienced and have dictated the slow pace of development. To attribute it mainly to lack of a price incentive is probably too optimistic an explanation.

The third method of expansion is changing to - or adding to existing systems - a grain feeding operation in which grass, if used at all, has a very minor place. It requires heavy investment in feeding stuffs and has an insignificant land requirement. In addition, it produces an animal that is somewhat different to the animal produced by the grass-based system. The grain fed animal is probably ready one to two years earlier, with a higher value per unit weight but a lower value per head. This type of animal is used widely on the continent, but one cannot say without considerable market research how the older grass fed animal would compete with it.[1]

Grain and grass systems are not discrete alternatives. Almost any combination of the two, from all grass to all grain is possible. Considerable quantities of concentrates are fed at present, probably by the better livestock farmers during the winter and especially to in-calf cows.

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[1]The difference in prices for cattle of different ages is small on the Irish market. Average prices for 1965-67 for two year old and three year old fat cattle differed by only 2.1s per live hundredweight.

Before persuing further the alternatives open to the livestock farmer, an outline of the possibilities for the other major enterprises is relevant.

Pig production

Pig production accounts for about ten percent of agricultural income. The equivalent EEC price (by the present calculations) is about 12 percent below current Irish prices.[1] In addition there appears to be less difference in the EEC prices for light and heavy pigs than between Irish prices for bacon pigs and porkers. This makes the bacon pig even less profitable than the porker. On the input side, the increase in barley prices of about thirty percent would greatly reduce the producer's margin. The other chief source of pig feed, skim milk, might also increase in price if the relation between whole milk and skim is maintained.

Other livestock

Sheep production is likely to get the same support as cattle ~~too~~ do at some stage, but at present this sector is not directly supported. Consequently sheep production is unlikely to be able to compete with cattle production on any but the marginal land. However the sharp increases in beef prices are likely to increase mutton and lamb

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[1]The difference between the base price for pork in the Community and the three year average price in Ireland amounted to 16.7 percent in favour of the former. Even if this price were realized, ~~mm~~ it would be offset by the increased input costs.

prices somewhat to improve its competitive position on both the home market and the British market (assuming British membership also). Additional hope is offered by the fact that in recent years it was possible to sell Irish lamb on the French market despite a high tariff.

Poultry production is likely to face the same problems as pig production. It has already become a specialized industry independent of the remainder of agriculture. Increased input prices seems likely to accentuate this characteristic and discourage all but large scale and efficient producers.

Crops

The estimated prices for grain crops favour barley. While the price for soft wheat shows no significant increase, barley prices are estimated to be at least thirty percent higher. This would encourage the present trend out of wheat and into barley. This highlights the paradox of EEC policy. In the Irish context, it is likely that pig production would decline which means the reduction of the chief market for barley, yet production of barley would be encouraged to increase even more rapidly.

The root crops, mainly sugar beet, would face much less attractive prices and it would seem inevitable that their importance as cash crops would decline.

Summary of external forces

Cattle and milk production would be encouraged to expand by generous price increases, particularly the former. This would lead to an increase in the demand from this sector for feed grains, as increased prices made it more economical to feed grain and increased stocking required increased amounts of supplementary feeding. Sheep production would probably not be able to compete for the better land, but its prices would probably increase as a consequence of greatly increased consumer prices for beef. Pig production is likely to become absolutely and relatively less profitable as a result of increased costs and lower prices. Consequently the demand for barley could decrease significantly. At the same time grain prices would encourage an accelerated substitution of barley for wheat and oats, and possibly an overall increase in the grain acreage. In general the root crops also become less profitable and their usefulness as cash crops would be greatly impaired.

CHAPTER V

ADJUSTMENT IN IRISH AGRICULTURE

The imposition of the EEC price regime postulated in the previous chapter would require two types of adjustment - a change in the allocation of resources between enterprises and the development of a new and/or improved technological basis. The first adjustment would be the result of a reaction to a combination of incentives (improved prices for some products) and disincentives (reduced prices for others). Generally, the second type of adjustment depends only on positive incentives, given the continuation of prices at the levels postulated.

Because of the generally mixed character of Irish farming, the changed price regime would be damaging (in the sense of an absolute and sizable fall in income) only to those farmers specializing in pig production or root crops (essentially sugar beet).[1] The majority would probably find that losses in one enterprise were offset or considerably modified by increased prices for other products. Since the commodities for which a higher price was postulated represented 62.7 percent of agricultural output in 1967,[2]

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[1] Relatively unimportant enterprises (in terms of the numbers of farmers involved) such as horticulture or broiler production are not dealt with here and are excluded from the above remarks.

[2] If mutton and lamb were included, this would represent 67.0 of total output.

it would seem that adjustment even in the short term need not present great problems on the farm level. In addition, the list of products acceptable under the new price regime could be lengthened, if commodities which it would be economical to feed to livestock but not to sell were included.

Adjustment of the second kind - moving to higher levels of efficiency - would be a slower process. Reallocation of resources if not to an optimum set of activities, at least to an acceptably profitable set could increase income to considerably above present levels. If farmers were strictly rational profit maximizers, this would not weaken the incentive to persue higher income through greater efficiency. If they were "satisficers" this would happen. It seems more realistic, in the light of experience, to assume that the reaction of farmers in the aggregate would lie somewhere between the two positions, which is to admit that higher incomes at current levels of output would tend, to some degree, to weaken incentives to further increase income by means of improved production, or in effect to slow down the rate at which improvement would take place. In the long term, failure to improve efficiency would widen the gap between the agricultural and other sectors of the economy so that the incentive was again strengthened, but this effect is not relevant to current considerations.

Higher incomes would also increase the ability of farmers to modify their technology, by increasing their spending power and improving their credit worthiness, at least in terms of net worth and ability to repay loans. It has been suggested [4] that in the past self-imposed limits to borrowing were more important than limits imposed by lenders. If these self-imposed limits were not related to strictly financial considerations and were determined by such things as generally unfavourable attitudes to credit, it is unlikely than an improved financial position alone would cause increased use of credit. On the other hand there has been a steadily increasing use of credit, which suggests that traditional prejudices against it are becoming less common, and - presumably - borrowing becomes something to be determined more completely by financial considerations alone.

The reaction of a large number of individual farmers to changed market conditions is difficult to preduct. However speculation about such behaviour may be informed by past experience and a fairly plausible outcome suggested. Chapter II offered some reasons why change in Irish agriculture tends to be slow, yet the magnitude of changes experiences in the past would not be as great as the change in the price structure suggested as an appropriate indication of Community conditions, and consequently we would expect the reaction to be proportionately greater than it has been in the past.

Cattle/dairying

The increase in cattle production over recent years can be attributed to the following factors: the substitution of dairying for wheat production, improved animal health (including lower incidence of infertility among cows and of calf deaths), younger slaughter age and better management of livestock and grassland. All these[1] could be expected to continue and accelerate with the considerably higher prices envisaged for cattle and milk.

It is probably true that a great deal of the grasslands - especially the permanent pasture - receives very low levels of fertilizer. Consequently considerable growth is possible before a large proportion of the farmers would face the problems associated with intensive grazing systems. In general very little investment is needed to initiate or expand production. This relatively easy expansion path is not without limits. While significant increases in grass production can be achieved without difficulty, there is a point at which management becomes very important. Health problems become critical and more difficult to control with intensive grazing and the actual organization of the grazing over the available pasture must be carefully organized. In addition, the farmer becomes more dependent on purchased feed in the event of a late spring or summer drought, apart from the higher quantities of supplementary feed normally fed. Experience of intensive grazing is limited, and it is

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[1] With the possible exception of wheatland being sown to grass.

the better managed farms, more likely to increase output that are closer to this critical limit, though these are the farms that could more easily handle such problems.

Additional land for cattle production is likely to be limited. Some of the better sheep land would be used for cattle, as could some of the land currently in root crops, though the production of this crop might be encouraged for on farm use by the high price of feed grains. The last source of additional land is the land currently producing grain. This is more likely to be used for barley than for grass.

While intensifying the grass based systems will inevitably require more supplementary feed, there remains a wide range of possibilities between a grass system with liberal use of grains and a system fully based on grain. The traditional character of cattle raising as a low cost, low return activity would discourage the latter type of cattle production, but the greatly increased prices for cattle would certainly encourage going some of the way towards it. Changes in trading patters could also encourage it.

Currently the trade with Britain in store cattle is encouraged by the deficiency payment available to British farmers who buy Irish stores and keep them for three months before slaughter. This inflates the price of unfinished cattle compared to finished cattle. Without such support it would probably be as profitable to sell finished as

unfinished cattle on the British market. The present system in the cattle sector is based on producing the greater part of the output as unfinished animals and a change to the production of finished animals would require additional resources or a reduction in the numbers produced (or at least slow down its rate of increase). This suggests that there would be an opportunity of finishing cattle in feed lots using grain as the major feed. Absorbing part of the supply currently being exported as unfinished cattle, in this way would reduce the problems of adjustment on the farm and maintain the numbers of cattle produced. It would need large scale operation as the difference between the cost of grass and purchased concentrates would be large. Such a development on a large scale would produce a new demand for barley, which otherwise would be in danger of loosing its market. While the opportunity for such a development would exist in the circumstances postulated, it would represent a break with established methods of farming, and could not be predicted with any confidence.

In terms of marketing on a large scale, radical changes in trade directions would create problems. Trade channels for handling the live animals of the British trade are well established, but a change in this trade would require the development of new institutions and new channels. Slaughter and storage facilities are adequate for the present situation in which the greatest part of the trade is in

live animals, but should this trade change to one of beef instead of cattle, a very large expansion of these facilities would be needed. It is likely that the commercial interests involved would welcome the opportunity to increase their trade and provide the facilities necessary.

Finally there exists no agency suitable for intervention buying. The creation of such an agency by the state would present no problems as the actual handling of the intervention can be contracted to some other commercial concern. At least one of the co-operative cattle marts has the facilities to undertake fairly large scale purchasing and storage.

What is true of cattle production is true generally of dairying. Price increases for milk are not as large as for cattle, but dairying could also expect to gain from increased prices for calves caused by the big increase in demand from the cattle sector. In addition, dairying offers some advantages over cattle production. It produces - under the Irish system - a monthly payment for milk, as opposed to the more irregular income from sales of cattle. This is of importance to the low income farmer at least. Dairying is also a more profitable enterprise and one more demanding of labour. While there would be some tendency to concentrate on summer milk production because of the loss of a higher winter ppice offsetting higher costs for

winter milk, this would probably not create problems outside the creamery industry and these would be compensated for by the price of butter, and increased throughput during at least part of the year. On the other hand, milk prices would no longer be guaranteed in the sense that they are now. While intervention buying would probably produce fairly stable prices, the present system provides a known price per gallon. This is periodically changed, but only after consultation with representatives of the industry.

Pig production

Though the relative price position of pig production is worse under EEC assumptions, there are a few factors to moderate a contraction of the industry. Pig production does not have the same land requirements as other enterprises. It offers opportunities for increasing income when land is the chief limitation. Traditionally it has been a complementary enterprise to dairying with the skim milk being an important part of the feed. Whether this relationship would continue, depends on - among other factors - what the relationship between the price of skim and the price of whole milk was. Finally much of the investment required for this enterprise is fixed. It has a zero or negative salvage value and this represents an incentive to stay in the business even in face of a relative or absolute decline in income.

The factors that would tend to encourage a contraction

of the industry seem more compelling. The most important is the price of grain. This alone would be a very strong disincentive. Coupled with a reduced price for the product, it must reduce the profit considerably. There is also the fact that increasingly heavy investment is required for efficient production. Technological changes in pig production have been more obvious than in other enterprises. All this suggests that pig production is acquiring increased economies of scale, so that it becomes less an enterprise to increase the small farm's income, than an industrial type operation based on heavy capital investment. The changed price relationships intensify this trend. In short, the future for pig production seems to be one of large scale specialized production, and the question arises as to where it should be situated, at the source of the feed grain or at the market. If the former, an Irish pig industry would still be at a disadvantage due to transport costs to its chief market. Only on the home market would it have an advantage and if production was limited to home market requirements, a very large contraction in the size of the industry would be required.

Grain crops

Looking at the supply side, the relative advantage of barley is such as to make it a far more attractive crop than the other grains available to the Irish farmer. This could be expected to accelerate the current trend to increased

barley production, at the expense of wheat and oats. The transfer of wheat land to grass might offset this to a small degree, but the attraction of barley, especially to the farmer with some investment in equipment useful only for grains, would seem to be great.

Turning to the total supply, the country is heavily dependent on imported wheat. In 1967, some fifty nine percent of the wheat supply was home produced, but this year was not typical and in recent years wheat production has been closer to one-third of the supply. The feed grain position is outlined below.

Table 5-1
Sources of feed grain, 1967.

Commodity	Tons		
	Imports	Domestic production	Total
Barley	6,382	451,600	457,981
Oats	8,785	39,950	48,735
Maize	113,689	- -	113,689
Total	128,856	491,550	620,403

Source: Central Statistics Office, "Statistical Abstract of Ireland 1966" Stationery Office, Dublin, 1966; Central Statistics Office "Statistical Bulletin" (quarterly) various dates. Stationery Office, Dublin.

In round terms nearly eighty percent of feed grains were home produced. The anticipated fall in pig production could increase this figure to one hundred percent fairly rapidly,

especially if production is rising at the same time. While the trend towards a barley surplus could be slowed down by increased demand for malting barley from breweries and distilleries (assuming they can exploit the Community market) as well as increased levels of feeding supplementary rations in the cattle and dairying sectors, it is unlikely to reverse the trend unless the latter sector becomes heavily dependent on grain which is not likely in the short run. Thus, without a compensating demand from the cattle sector, the problem of subsidizing exports becomes a real possibility.

Other crops

The prospects for other crops are not hopeful. Most face actual declining prices, or if not a relative fall in price. Consequently their importance as cash crops seems likely to be small, except for some specialized enterprises such as production of seed potatoes for export. Where a rotation is practiced, they may have a place in this, or for on-farm feeding as an alternative to the purchase of expensive concentrates. This role, however, seems to be an essentially limited one.

CHAPTER VI

CHANGE AT THE FARM LEVEL

The significance in these changes in price can be better appreciated by considering their effect at the farm level and on different types of farms. Five main systems of farming (and two subsystems) have been distinguished in Irish agriculture [10]. These are:

System 1	Creamery milk production	- Better soils
1A	Creamery milk production	- Poorer soils
2	Creamery milk and tillage	
3	Liquid milk	
4	Dry stock	- Better soils
4A	Dry stock	- Poorer soils
5	Tillage	

This division is on the basis of predominant enterprise and does not imply a high level of specialization, probably the majority of farms could be categorized as mixed. It is also true that most types of farm occur to some degree in most parts of the country, though with differing frequencies so that in many areas one type predominates.

A further type of farm - subsistence farming - is sometimes used to describe the small holdings, mostly on poor soils along the West coast. Such farms may produce a little of several products, but as the description implies their off-farm sales are severely limited. It is scarcely conceivable that under any realistic system of pricing that

these farms would be viable. They suffer not only from small size and poor soils but are frequently remote from markets. The problem presented by these farms is more one of finding alternative employment for the owners in an area where such opportunities are rare. No more will be said of this class of farm.

The first category of commercial farm - creamery milk producers on better soils - predominate in the lowland areas in the Southern half of the country, shading into class 1A (creamery milk producers on poorer soils) towards the west and into tillage farms towards the East, with the creamery milk and tillage category interspersed with the tillage farms. Drystock farming predominates in the midlands and towards the west it is carried on on poorer soils. Liquid milk producers are found in the vicinity of the larger urban areas. It must be emphasized that this is no more than a general tendency for farm types to be located in certain areas, with more than one type typifying certain areas.

Turning to the subject of prices, the first type of farm to be considered is the creamery milk system. On the better soils these farms support on average from 6.1 milch cows (for under thirty acres farms) to 23.2 (one hundred acres and over).[1] For all farms, the modal value

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[1]All figures derived from data in [10].

is around ten or eleven. In addition they would have a greater quantity (in terms of dairy cow equivalents) of other livestock, mostly other cattle. Such farms - and this represents a very broad class varying from specialized dairy producers to farms with scarcely half their income from milk - would be affected by the suggested Community prices in several ways. Their receipts from milk would increase, earnings from calves and other beef cattle would increase, but earnings from other enterprises need not necessarily increase and could decline. Costs, mostly purchased feed, would increase.

Dairying would continue to show a larger margin per acre than cattle raising, but the choice between them, which in most cases is a choice between the proportion of each on the one farm, would continue to be subject to such practical restrictions as limited labour or capital or a reluctance to increase the dairy herd to the point where it would become heavily dependent on purchased feed and the consequent danger - real or imagined - of having to sell dairy cows. Presumably the other enterprises would be adjusted to be consistent with their changed profitability, subject to their place in the farm plan. This would probably mean abandoning some or all of them and a consequent move towards greater specialization.

These conclusions are also applicable to creamery milk producers on poorer soils. They would have a greater

financial incentive to make more use of purchased feed to overcome the natural disadvantages in producing their own. However if we hypothesize some relation between farm income, education, or size of operation and such factors as innovativeness, propensity to take risks or to utilize credit, or in short that poorer farms are less likely to change than larger farms[1], it would appear that these producers are unlikely, on the whole, to make the required changes in their system of farming.

The position of the creamery milk and tillage farms is in part similar to that of the mainly creamery milk farms. The effect on the tillage enterprise - whether it occurs on a mixed creamery milk and tillage or mainly tillage farm - would vary. Those farms producing grain would be faced with an increased incentive to produce barley, and could do so with a minimum reallocation of their resources. Firms heavily dependent on root crops - in practice this means sugar beet - would be faced with the prospect of a large income reduction or the selection of alternative enterprises. Depending on physical conditions, this would probably be either barley or livestock. If the latter choice were dairying it would create an additional demand for cows of at

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[1] No research has been done in Ireland to support this thesis, but research elsewhere, especially in the U.S. as well as informed opinion in Ireland would suggest that it may be a factor in agricultural change.

most 0.2 percent of the current cow population[1], and presumably a proportionate increase in calves and milk. By comparison with annual fluctuations in the quantity of these products marketed annually, this is a small change.

Firms producing liquid milk primarily would face a small decrease in their income. Currently such farms get paid a premium for their milk which under EEC policy they would lose. The relative reduction in income of producers for the liquid market would not be great enough to justify any change in their system.

Finally farms based predominantly on cattle production could anticipate a large increase in income, whether they were situated on better or poorer soils. The remarks concerning the possibly greater resistance to change on the poorer farms in the dairying sector apply also here. Consequently the changed price structure could result in an increasing difference between the better and poorer farms, as the better farms reacted more vigorously to the price incentive and intensified their production to a greater degree thus exaggerating the difference due to the natural resources of the farms.

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[1]The number of cows on dairy farms is about 0.2 per acre averaging together all farm sizes. If the total beet acreage of 65,500 acres (1965) were stocked with cows at this rate it would require approximately 13,000. The total cow population is approximately 1,500,000. The cows per farm ratio is doubled to allow for the fact that on dairy farms only about half the livestock consists of cows.

CHAPTER VII

IMPLICATIONS

While political developments make the realization of the situation discussed in the paper appear increasingly unlikely in the short run, the conclusions have some implications for the long run. The comparison of recent Irish and Community prices shows that Irish agriculture has much to gain and a little to lose by gaining access to the Community market under its present price structure, but it would be of greater significance if this situation seemed likely to continue.

In fact, this is likely to be the case. The Community is a large importer of beef, and though the inclusion of the United Kingdom, Norway and Denmark as well as Ireland would make the enlarged Community nearer self-sufficiency the potential increases of the demand for beef in a Community of Six or Ten are large. Assuming that income continues to grow, and that increases are reasonably widely distributed, the demand for beef will almost certainly continue to grow. Irish agriculture has depended on cattle for the major part of its income and for an even greater part of its export earnings, since the last century. In the last twenty years there has been a long term - though erratic - increase in output. It is not conceivable that this very long term trend could change radically in the foreseeable future.

The significance of improved cattle prices to Irish agriculture is very great. Some idea of its magnitude can be obtained by applying the price changes suggested to gross agricultural output (by simply increasing the total value of each product in proportion to the change

in price). Using 1967 output figures, this gives an increase of 17 percent in total output[1], but over 90 percent of this increase is attributable to improved prices for cattle. The Irish case for access to the Community market is overwhelmingly determined by cattle prices.

Thus, unless there developed some large and unforeseen change in the industrial sector to offset the need of agricultural produce for wider and better markets, the Irish case for Community membership is unlikely to change in the long run. Yet despite these broad and fairly firm conclusions, remarkably little is known in detail about the likely impact of such a development. As can be seen from this paper, a discussion of the topic must rest to an undesirable extent on speculation.

To reduce to some degree the area where speculation reigns would require a number of approaches. First, it would seem basic to understand some of the specific determinants of change at the farm level. These are likely to be sociological and psychological as well as economic. Second, and on a completely different level, it would be desirable to anticipate likely shifts in trade and their implications for institutional and structural change throughout the whole sector. Speculation about the effects of a change to large scale export of meat - as opposed to live animals - has long been popular but now a systematic approach to the problem seems appropriate, but only after the possibility of such an event occurring has been examined and it has been pronounced at least a reasonable possibility.

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[1]This in fact applies to only 82 percent of agricultural output. The many other small enterprises not discussed here could, in aggregate, show either a gain or a loss.

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