Position Papers

Part II

EVALUATION OF CAP REFORM PROPOSALS
Prof. S. J. Sheehy.

NATIONAL RESPONSES TO THE CAP REFORM PROPOSALS
Dr. G.E. Boyle

IMPACT OF AGRICULTURAL POLICY REFORM
Dr. A. Larsen

RURAL DEVELOPMENT: TRENDS AND ISSUES
Mr. P. Commins

THE FOOD INDUSTRY AND CAP REFORM
Mr. N. Cahill

EVALUATION OF CAP REFORM PROPOSALS

Position Paper Prepared for the National Economic and Social Council

by

Seamus J. Sheehy

PROFESSOR OF AGRICULTURAL ECONOMICS
UNIVERSITY COLLEGE DUBLIN

Contents

CHAPTER 1

INTRODUCTION

Reform of the CAP is inherently an on-going process. It has long pre-dated the current Commission proposals (EC Commission, 1991b) and will continue long after the current proposals or variations of them are implemented. It is on-going because the economic and technological environment for agriculture, as for other sectors in any developed economy, is constantly changing. The usual consequence of that change is pressure on profit margins which is transmitted to producers through the market system. Farmers are in no way unique in this regard because like most other producers of goods and services are also confronted with such pressure.

The critical economic variables for farmers are demand for and supply of agricultural products, and their most important characteristic in Developed Countries is the tendency for supply to expand more rapidly than demand causing downward pressure on prices and incomes. This pressure forces farmers to react, but it also implicates governments because in virtually all countries in the world governments have chosen to intervene more or less in agricultural markets. That intervention takes place to moderate the impact of market forces, but it does not suppress those forces. Rather the forces continue to operate through the veil of government regulation. The CAP is the manifestation of government intervention in the EC, and the reform of that policy is the EC's response to the changing economic environment.

Because reform is on-going it is essential to take a long-term perspective in evaluating the present proposals rather than to consider them as a once-off and terminal exercise. First, past reforms will be reviewed both at the EC level and the Irish level to highlight the radical action which has already taken place and the considerable adjustments which farmers have made by way of reaction. The reaction may take place on farms, or it may involve finding off-farm employment while remaining in farming or by leaving farming altogether.

On-farm adjustment is effected mainly by the larger commercial farmers who have the capacity to offset declining unit margins by increasing productivity. In their efforts to maintain or increase their living standards, they are compelled to adjust their output and input mix over time. They may change their output mix away from less profitable towards more profitable enterprises; they may expand the output or improve the quality of a given enterprise. In the process they also change the input mix of both non-factor or intermediate inputs and factor inputs, i.e. land, labour and capital. Typical adjustments on the input side are increasing mechanisation and energy use, increasing fertiliser and agrichemical use, decreasing labour use, and increasing land area farmed per farmer.

An intrinsic part of this output/input adjustment is an uptake of new technology which is being continually invented and adapted to reduce unit costs. This new technology derives from both public sector and private sector investment in research and development. One further dimension of this adjustment process, which is often

discounted because it is not readily measured, is the accumulating investment in human capital which upgrades the ability of farmers to manage the increasingly complex farm businesses they control.

The majority of farmers do not have the capacity to adjust their farm business in a manner which would enable them to maintain their living standards. Some of these may be able to secure off-farm employment to supplement their farm income and thereby maintain or increase their total income. Others are not so fortunate and are faced with a declining income over time in farming. They are in effect caught in a process of creeping redundancy. In the case of employees the redundancy experience is usually a sudden one at the time when employment ceases; but in the case of self-employed people such as farmers the process is usually an extended one because as income is eroded the farmer continues farming, there being no better option available. Sooner or later this category of farmer becomes eligible for social assistance and joins others in society who must rely on such transfer payments.

There are therefore three outcomes among farmers to changing economic circumstances:

1. They can successfully adjust their farm business;
2. They can diversify their efforts into off-farm employment to supplement their farm income;
3. They can fail to make either of these responses in which case they continue in farming until retirement or death but experience a declining income, ultimately becoming dependant on social transfer payments.

In fact, just as the economic pressure on farmers is similar to that on other producers in a market economy, so also are the categories of response. In commercial terms the first category would be referred to as "adjusting the core business"; the second would be referred to as "diversification"; and the third would be described as "business failure".

The adjustments of these three types which have taken place in the EC-10 and in Ireland since 1977 are analysed in Chapter 2 along with changes in numbers of holdings and other adjustments.

The attitude one takes to any set of proposals concerning the future is influenced to a large extent by one's assumptions about the future. It is therefore necessary to consider the prospective economic environment which will condition both reforms and reactions to them and this is done in Chapter 3. Any such review must be speculative, but there are clear signals of change in the economic and political arenas which are likely to have a profound influence on the future of EC and Irish agriculture. Developments in the GATT and in Eastern Europe are two such events which are surveyed in Chapter 4.

Having analysed the historical record and defined the future environment, the current reform proposals are then considered in Chapter 5. While it is emphasised that the proposals are just a further phase in a continuing reform sequence, they are a milestone in the evolution of CAP reform. In particular the very substantial compensation being proposed for the losers is a radical and welcome innovation.

Any set of proposals for change can only be evaluated against alternative feasible proposals for change. Yet this is often not done as it is widespread practice to compare proposals with the status quo even when it is accepted that the status quo is not tenable. The main alternative to the present proposals is even more severe supply control and the relative merits of these two alternative sets of reform are assessed in Chapter 6.

We now turn to the first step in the process of evaluation, namely, the analysis of the historical record.

CHAPTER 2

ADJUSTMENT TO CAP REFORM, 1977 TO 1991

In this chapter the price pressure on farming is first quantified. The on-farm adjustment in response to this pressure is then analysed first at the sectoral level using official statistics to quantify the changes and next at the farm level using survey data. The other categories of adjustment defined in Chapter 1 are then considered, namely, off-farm income and redundancy as measured by very low incomes or poverty in the industry.

Sectoral Adjustment

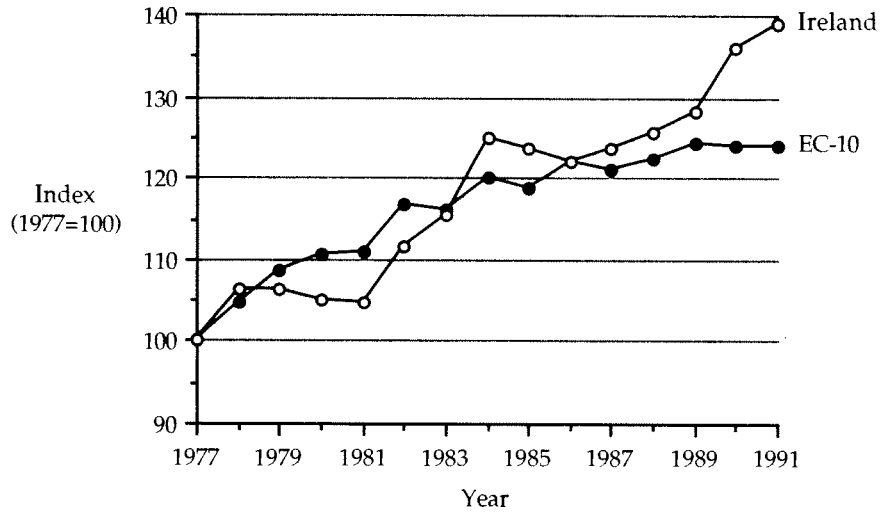
The main economic force driving agricultural adjustment is the interaction between changing demand for and supply of agricultural commodities. The increase in aggregate demand for agricultural production in the EC is estimated at about 0.5% per annum in recent years (EC Commission, 1991a). The change in EC aggregate production over the years is graphed in Figure 1. It has grown by 1.7% per annum over the full period from "1977" and "1990",[1] but it has decelerated since 1984 presumably in response to both falling real prices and increasing supply control. This deceleration on its own would lessen market inbalance, but demand has probably also been decelerating while increasing imports have added to internal EC production. Consequently, market inbalance has continued as a major problem.

In a free market situation the tendency for supply to expand faster than demand would cause prices received by farmers to fall over time. To moderate this price fall and its consequential pressure on farmers' incomes governments intervene as under the CAP. The EC government can buy up the surpluses and dispose of them outside the EC, but to do so usually involves heavy subsidisation because Third Country markets are normally depressed relative to the EC. The government's scope is therefore constrained by the budget available, the size of budget required at any given time being a function of the quantity of surplus to be disposed of and the unit cost of the disposal operation. In the earlier years of the CAP up to 1977 the available budget grew rapidly enough to finance the disposal of increasing surpluses while at the same time holding constant real prices received by farmers for their produce. Since 1977 the CAP budget has continued to grow but no longer at a rate sufficient to maintain real prices. In 1977 a so-called "prudent price policy" was agreed and since then real prices have been falling.

1 Numbers written within inverted commas in this report are three-year averages, e.g. "1977" is the average of 1976, 1977 and 1978.

FIGURE 1

Gross Agricultural Output at Constant Prices, Ireland and EC-10, "1977"=100



In the context of agricultural policy it is the pressure on farmers' incomes rather than that on prices received which is relevant. Therefore, the connection between these two variables needs to be explained. Farm income in general terms is the difference between the revenue earned and the outlay incurred in generating the revenue. The actual calculations in the official agricultural accounts are as follows:

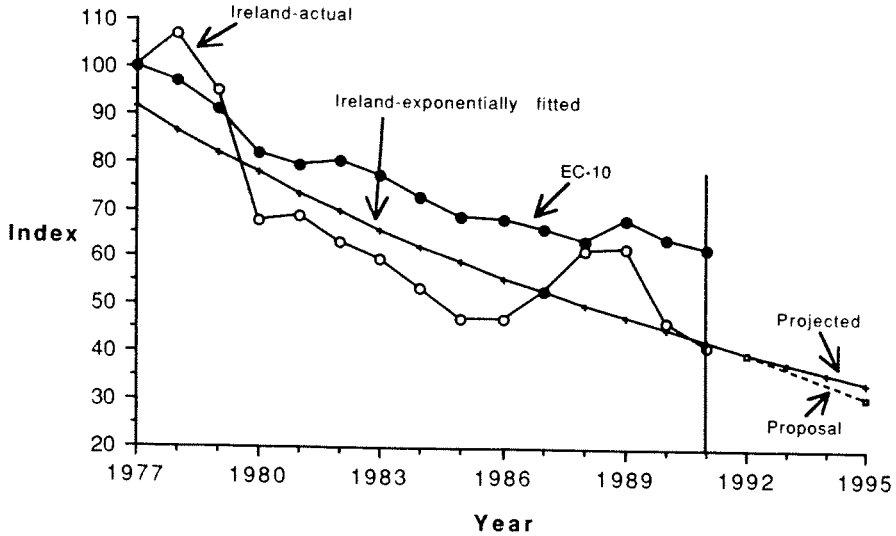
Gross Output	-	Intermediate inputs
	=	Gross Value Added at market prices
	-	Depreciation of buildings and machinery
	-	Indirect taxes or levies
	-	Wages of hired workers
	-	Rents paid outside agriculture
	-	Interest charges
	+	Subsidies not included in sales
	=	Family Farm Income

Gross Value Added (GVA) at market prices is the difference between Gross Output and Intermediate Inputs, so its magnitude is determined by movements in both the prices and volumes of these two aggregates. Since 1977 the real prices of both output and input have declined, the former more rapidly than the latter. The net effect of

these two sets of price movements on GVA are graphed in Figure 2.[2] For the EC-10 the resulting price effect on GVA was an annual decline of 3.3% from 1977 to 1991. In other words if the volumes of output and input had not changed, price movements would have caused aggregate real GVA to fall by 3.3% per annum.

FIGURE 2

Net Price Effect on Gross Value Added, Ireland and EC-10, 1977=100



The pattern of price behaviour for Ireland was very different from that of the EC-10. The rise in 1978 is explained by the increases resulting from the last two steps of the six step transition for Ireland to full EC membership. The sharp fall in 1979 and 1980 was associated with the exchange rate and inflation milieu prevailing after Ireland joined the EMS. Essentially Ireland's inflation rate remained exceptionally high compared with most other member States (13% in 1979 and 18% in 1980) while the value of the £IR was maintained against EMS currencies. No "green £" price increases were therefore forthcoming to help compensate for the relatively high Irish inflation. At the same time the overall trading balance was maintained by effective devaluation against the £UK which strengthened sharply at that time (Walsh, 1981).

The net price effect on GVA for Ireland over the entire period was an annual fall of 5.5%. In effect the "prudent price policy" pursued since 1977 has impacted much more severely on Irish farmers than on the EC-10 as a group (or indeed on any other member State). The annual rate of decline was some 67% greater in Ireland than the EC-10 average on the basis of the statistics cited above, and if the transition price increases in Ireland in 1978 are netted out the difference was some 75%. This is perhaps the least known fact of Ireland's EC membership to date and is a striking example of the uncommoness of the Common Agricultural Policy.[3]

Farmers like other business people react to such price pressure by increasing productivity. Two elements of this productivity are considered here: firstly, movements in the volume of GVA which is the result of the twin movements in the volumes of output and intermediate inputs and, secondly, movements in the family labour force.

Growth in the volumes of output in the EC-10 and in Ireland are shown in Figure 1 where it may be noted that despite the more severe price experience the volume of output grew faster in Ireland than in the EC-10. Also the Irish growth rate has not shown the tendency to decelerate in recent years evident in the EC-10; this is an interesting outcome given the widely held view in 1984 that the introduction of the milk superlevy would strangle the growth of Irish agriculture. Input volume has also grown more rapidly in Ireland, so much so that the volume of GVA actually grew less in Ireland than in the EC-10: the annual growth rate was 1.9% in Ireland compared with 2.2% in the EC-10. Therefore, gains in intermediate input productivity contributed less in Ireland to offsetting adverse price movements than it did in the case of the EC-10 as a whole. With respect to the family labour force the decline in Ireland has been faster than in the EC-10 as shown in Figure 3.

All of the foregoing trends in outputs, inputs and labour contribute to the movements in FFI per family worker. In addition, as indicated earlier, a number of other items have to be accounted for in deriving FFI from GVA. The main items are shown in Table 1 as a percentage of GVA at market prices. FFI actually increased somewhat in Ireland as a percentage of GVA because increased subsidies more than offset increases in a number of cost items, especially interest charges and depreciation. These subsidies are paid mainly in the form of headage payments.

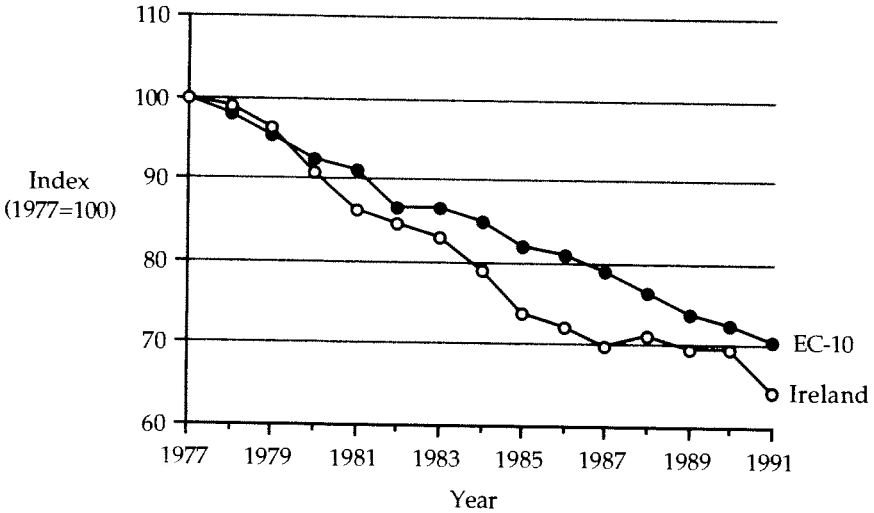
2 If in a base period 100 units of Gross Output requires 45 units of intermediate inputs and if the real price of output falls by 10% and the real price of input falls by 5%, the net price effect on Gross Value Added is calculated as follows:

	Base Period	*Price Change*	*Subsequent period*	*Net price effect*
Gross Output	100	-10%	90.00	-
Intermediate Inputs	45	-5%	42.75	-
Gross Value Added	55		47.25	-14.1

3 Another way of stating this is that farm incomes in Ireland in 1991 would have been some 45% greater if Ireland had experienced the same price pressure since 1977 as the EC-10 average *ceteris paribus*.

FIGURE 3

Number of Family Workers in Agriculture, Ireland and EC-10, 1977 = 100



The FFI per family worker resulting from movements in all of the above variables is graphed in Figure 4. The ratio has fluctuated over time but much more so in Ireland than in the EC-10. In Ireland there was in particular a very severe fall in 1979 and 1980 attributable mainly to the adverse price movement after joining the EMS referred to above. Income recovered after 1980 and by the late 1980s real FFI per family worker was at about the same level in both Ireland and the EC-10 as it had been when the "prudent price policy" was launched in 1977. In the EC-10 productivity gains in the use of intermediate inputs and labour more or less offset the adverse price movements over the period, and in Ireland a similar result was achieved by increased labour productivity and increased headage payments to farmers.

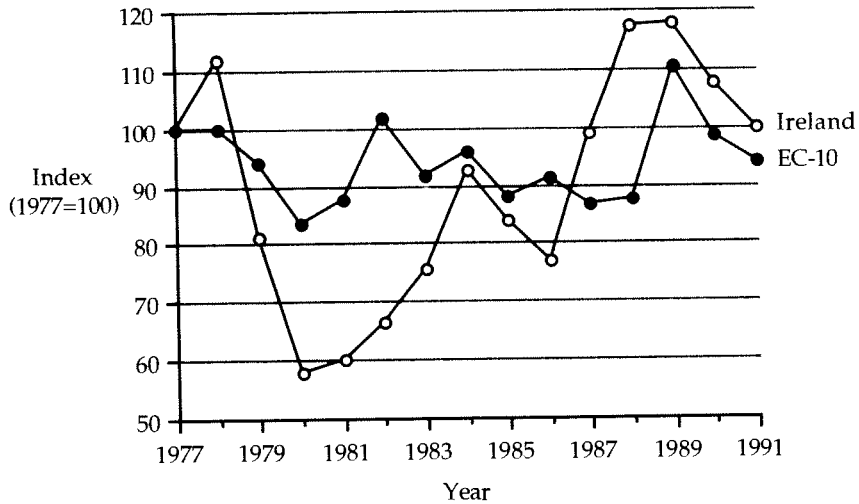
TABLE 1

Selected Items as a Percentage of GVA at Market Prices in Ireland, "1977" and "1990"

	"1977"	*"1990"*
Subsidies	3.3	16.6
Taxes and levies	3.1	2.7
Depreciation	13.2	17.9
Wages	6.2	7.7
Interest	6.9	12.3
FFI	73.4	75.8

FIGURE 4

Real Family Farm Income per Family Worker, Ireland and EC-10, "1977"=100



The final aspect of sectoral adjustment to be considered is the change in the number and area of holdings, often referred to as *structural change*. Viewing the aggregate data in Tables 2 and 3 the picture is one of very little structural change. For example, in Table 2 it may be seen that the total number of holdings declined by only 7.5% in the EC-9 between 1975 and 1987, all of this decline occurring in the under 20 hectare category. The Irish data in Table 3 show a slight increase in total holdings between 1980 and 1987 composed of a slight decrease in the under 20 hectare category and an increase in the over 20 hectare category.

TABLE 2

Number of Holdings and Percentage of Land Holders with "Other Gainful Activity" in the EC-9, 1975 and 1987

	1975	*1987*
Total holdings >20 ha, '000s	4,552.4	4,123.5
Holdings with gainful activity, '000s	1,458.2	1,311.0
% of total	32.0	31.8
Total holdings 20 ha +, '000s	1,135.8	1,140.5
Holdings with gainful activity, '000s	100.8	193.2
% of total	8.9	16.9
Total holdings all sizes, '000s	5,688.2	5,264.0
Holdings with gainful activity, '000s	1,559.0	1,504.2
% of total	27.4	28.6

Source: *Farm Structures Surveys*, 1975 and 1987

TABLE 3

Number of Holdings and Percentage of Land Holders with "Other Gainful Activity" in Ireland, 1980 and 1987

	1980	*1987*
Total holdings >20 ha, '000s	132.3	130.3
Holdings with gainful activity, '000s	45.8	63.6
% of total	34.6	48.8
Total holdings 20 ha +, '000s	82.2	85.3
Holdings with gainful activity, '000s	10.7	16.2
% of total	13.0	19.0
Total holdings all sizes, '000s	214.5	215.6
Holdings with gainful activity, '000s	56.5	79.7
% of total	26.3	37.0

Source: *Farm Structures Surveys*, 1980 and 1987

Change in the status of a holding usually occurs on the retirement or death of a farmer. The holding is transmitted to a successor through either inheritance or sale, inheritance accounting for some four-fifths of all land transferred in Ireland. The holding may continue to be farmed as a separate unit either on a full or part-time basis, or it may be amalgamated with another holding thereby losing its identity. The very low rate of change in the total number of holdings shown in Tables 2 and 3 indicates that the majority of holdings continue to be farmed separately rather than being amalgamated, but in making such an assessment one has to allow for an unknown degree of sub-division of holdings which offsets some of the amalgamation which is occurring.

While holdings change hands in these ways most of the resources involved, with the exception of labour, remain on in the industry as their opportunity cost outside of agriculture is very low. The decline in the labour force is described in Figure 3. Most of this decline occurs through non-replacement of people retiring or through their replacement by part-time farmers who are not classified in the agricultural workforce. It is because of the increase in part-time farmers that the number of holdings decline by so little over time even when the labour force is shown to be declining rapidly. While the overall number of holdings is relatively stable, the number of full-time farmers is declining and the number of part-time farmers is increasing.

Adjustment at Farm Level in Ireland

The sectoral trends analysed in the previous section provide an overall view of the adjustments occurring in agriculture in response to changing economic and technological circumstances. The modest magnitude of most of these responses is often interpreted as evidence of a relatively static industry. However, these are averages of a wide range of responses among individual farmers which are quantified in this and the following section. This evidence demonstrates a very dynamic industry contrary to the picture portrayed by averages.

TABLE 4

Characteristics of Farms Classified by Change in the Absolute Level of FFI per Farm, 1984/1985 to 1989/1990

		Worst group	*Others declining change*	*No significant*	*Others increasing*	*Best group*	*All*
% of all farmers		10.3	16.2	22.6	39.7	11.2	100.0
FFI/Farm:	1984/1985, £	8,064	3,274	2,755	5,108	15,052	5,696
	1989/1990, £	3,406	2,162	2,812	7,441	27,800	7,413
	Change, %	-58	-34	+2	+46	+85	+30
Area Farmed:	1984, ha	37.1	19.0	17.9	27.3	58.7	28.4
	1990, ha	38.1	18.7	18.3	28.3	63.3	29.4
	Change, %	+3	-2	+2	+4	+8	+4
Family Labour:	1984, AWU	1.15	0.99	0.96	1.14	1.47	1.11
	1990, AWU	1.02	0.94	0.86	1.09	1.56	1.06
	Change, %	-11	-5	-10	-4	+6	-5
Gross Output:	1984/1985, £	25,365	7,338	6,946	14,934	56,844	17,663
	1989/1990, £	24,649	6,950	7,609	19,132	77,450	21,659
	Change, %	-3	-5	+10	+28	+36	+23
Total Costs:	1984/1985, £	17,301	4,065	4,191	9,862	41,792	11,967
	1989/1990, £	21,243	4,788	4,797	11,691	49,650	14,246
	Change, %	+23	+18	+14	+19	+19	+19

The diversity of response among farmers is quantified for Ireland by the results of two surveys. One is a matched sample of 690 farmers who participated over the six year period 1984 to 1990 in the annual National Farm Survey (NFS) carried out by Teagasc. The second is a special survey commissioned by the NESC of 503 farmers with 20 or more cattle each and carried out in July 1991. These farmers were asked by enumerators to recall the farm resources and enterprises which they had in the late 1970s and they also provided data on their current resources and enterprises. Both of the survey samples are biased somewhat towards larger farmers. For example, the average area farmed in the NFS in 1990 was 31 hectares while the average in the NESC survey in 1991 was 30 hectares; these sample averages may be compared with the national average for farmers over 2 hectares in 1987 of 24 hectares.

Considering first the NFS data as presented in Table 4, the nominal FFI per farm for all farmers increased by 30% from the average of the two years 1984/1985 to the average of the two years 1989/1990. This was equivalent to a real increase of some 10%. Around this average however there was a wide range of outcomes. When these farms are classified according to the absolute change in FFI per farm between 1984/1985 and 1989/1990, the differences can be quantified and some insights gleaned as to the reasons for the divergent performances.

Of the total sample just one-half achieved a significant increase in nominal income, but only one-third achieved a real increase. Focussing on the worst group and the best group, the former experienced a decline in FFI per farm of 58% while the latter had an increase of 85%. The best group already had relatively high incomes in 1984/1985, but the worst group had the next highest income - well above average. Also the worst group consisted of farms which were above the average in area. The change in area farmed and in family labour over the period was not strongly differentiated by performance. The main difference between the two groups was the evolution of Gross Output; on the worst group there was a small decrease over the period whereas on the best group there was an increase of 36%. The components of these changes are analysed in Table 5.

TABLE 5

Composition of and Change in Value of Gross Output, "Worst Group" versus "Best Group"

	% Composition of Gross Output 1984/1985		*% Change in Gross Output 1984/1985 to 1989/1990*	
	Worst Group	*Best Group*	*Worst Group*	*Best Group*
Dairy	26.1	52.2	-41.2	+44.6
Cattle	36.2	21.2	-5.9	+31.5
Sheep	6.7	1.9	+58.0	+187.4
Other Livestock	13.9	4.6	+42.5	-5.8
Crops	17.1	20.1	-2.0	+5.6
	100.0	100.0	-2.8	+36.3

The dairy enterprise plays a key role in explaining the different performances of the two groups accounting for some four-fifths of the total difference. Dairying was twice as prominent in the best group at the beginning of the period and further increased its relative prominence over the period as dairying contracted on the farms in the worst group while expanding on the best farms. Dairy cow numbers increased by over 9% on these farms while milk production increased by about 12%. The imposition of the superlevy in 1984 did not prevent such expansion, though extra quota capacity would have had to be rented or purchased to achieve it. The other main factor in the different performances was the greater expansion on the best farms of the cattle, sheep and crop enterprises. Only in "other livestock "(mainly pigs and poultry) did performance of the worst group exceed that of the best group.

Comparing the "others declining" group with the "others increasing" group, the income trends are still strikingly different with a 34% decline for the former and a 46% increase for the latter. The "others declining" already had very low incomes in 1984/1985, so by 1989/1990 they were down to a mere £2,162 per farm. Again the main reason for the different outcomes was the trend in Gross Output and the role of dairying in that trend.

In the NESC survey it was not possible to calculate a direct income measure; instead income was estimated indirectly by multiplying a unit of each enterprise by a *Standard Gross Margin* and summing the enterprise margins to give a Standard Farm Gross Margin (SFGM).[4] This is not as specific a measure as is available in the NFS as it excludes price variation and productivity variation among farms and over time. Consequently, the range of outcome is not so great though the longer period involved - from the late 1970s to 1991 - provides greater scope for adjustment which tends to offset some of the averaging involved in the SFGM.

Again the range in performance is striking. For the purposes of the analysis farmers were partitioned into three groups on the bases of their SFGM performance. The bottom group consists of farmers who decreased their SFGM by 15% or more; the middle group experienced between a 14% decrease and a 14% increase in their SFGM; and the top group increased their SFGM by 15% or more.

The results are presented in Table 6. The overall average change in SFGM was an increase of 5.1%, but the bottom group reduced their SFGM by 47.1% on average while the top group increased their SFGM by 55.4% The size of farm, as measured by either the 1979 level of SFGM or area or family workforce, was somewhat smaller for the top group than for the others. Therefore, it was not the large farmers particularly who expanded most as might perhaps be expected.

4 The standard Gross Margins used were those used by the EC in its farm typology to base "1983".

TABLE 6

Characteristics of Farms Classified by Change in Standard Farm Gross Margin, 1979 to 1991

		Bottom group	*Middle group*	*Top group*	*All*
% of all farmers		28.4	32.1	39.5	100.0
SFGM:	1979, £	10,235	8,840	7,954	8,874
	1991, £	5,414	9,057	12,363	9,327
Change, %		- 47.1	+ 2.5	+ 55.4	+ 5.1
Area Farmed:	1979, ha	29.4	25.9	27.0	27.3
	1991, ha	25.9	28.0	34.9	30.1
Change, %		- 11.9	+ 8.1	+ 29.3	+ 10.3
Total Labour:	1979, AWU	1.7	41.5	71.5	71.62
	1991, AWU	1.5	51.6	01.6	51.61
Change. %		- 10.9	+ 1.9	+ 5.1	- 0.6

However, those that did expand most - the top group - increased both their area farmed and their family workforces, while the bottom group decreased these resources. The 29.3% increase in area farmed by the top group is notable given the very slow change in the average area per holding for the country as a whole - an increase of only 1% between 1977 and 1987. Of the total increase in area in the top group some 60% was achieved by acquiring ownership and 40% by renting. It might also be noted that the shortfalls between the 55% increase in SFGM and the 29% increase in area farmed is accounted for by increased stocking rates.

Considering the enterprise composition of change as in Table 7 the role of dairying is not as dominant as in the FMS accounting for 46% of the total difference between the groups compared with 80% in the FMS results. Changes in cattle and crops were also significant contributors, the former accounting for 19% of the differential response and the latter accounting for 26%.

TABLE 7

Composition of and Change in Standard Farm Gross Margin, "Bottom Group" versus "Top Group"

	% Composition of SFGM 1979		*% Change in SFGM 1979 to 1991*	
	Bottom Group	*Top Group*	*Bottom Group*	*Top Group*
Dairy	38.4	52.2	- 66.2	+ 39.4
Cattle	30.4	28.1	- 19.2	+ 50.5
Sheep	2.5	3.6	+ 131.0	+ 247.5
Other Livestock	3.2	2.9	- 91.7	+ 90.4
Crops	25.5	13.2	- 63.1	+ 71.4
	100.0	100.0	100.0	100.0

Trends in Non-Farming Income

Three categories of adjustment by farmers to economic pressure were identified in Chapter 1 of this paper. The first was adjustment of the farm business itself to increase productivity and thus counter shrinking unit margins. This has been studied in the previous two sections. In fact only a minority of farmers have the capacity to make these adjustments successfully and to survive as commercial farmers. However, many others succeed in procuring off-farm employment to supplement falling farm income and in this way maintain a satisfactory household income.

Data on the non-farming income of farmers are very scarce compared with the abundance of information on farming income. At EC level the only harmonised data across the member States are collected in the *Farm Structures Surveys* which are carried out periodically. The data in Table 2 from these sources indicate that some 29% of all land holders in the EC-9 (the EC-12 excluding Greece, Spain and Portugal) had other gainful activity in 1987 and surprisingly that this had increased very little since 1975.

Not surprisingly, most land holders with other gainful activity were on small holdings, but the main change since 1975 was a doubling of the percentage of holders with 20 hectares or more which had other gainful activity. Some spouses as well as the land holders themselves have other employment, the percentage of all holdings with such spouses in 1987 being 8. Some of these would be the spouses of holders who themselves had other employment but many would not, so that the percentage of couples with other gainful activity is higher than the 28.6% relating to holders alone. Information for spouses is not available for 1975.

Similar data relating to Ireland is summarised in Table 3 but extends back only to 1980. In contrast with the EC-9 results in Table 2 the Irish results show a much larger percentage of land holders with other gainful activity, 37.0% compared with 28.6%, and also show a very significant increase in the proportion with other gainful activity, rising from 26.3% in 1980 to 37.0% in 1987. Furthermore, 40,000 spouses and 44,300 other members of family who work on farms also had other employment in 1987. Again there would be some overlap between holders, spouses and other family members, but even allowing for this probably well over a half of total holdings had other sources of income in 1987.[5]

An alternative source of information for Ireland on non-farm sources of income is the *Household Budget Survey*. Unfortunately data are available on farm households for only three years from this source, 1973, 1980 and 1987, and two of those three years were abnormal with respect to farming income: in 1973 farming incomes were exceptionally high and in 1980 they were exceptionally low. (For a detailed analysis

5 In the Household Budget Survey discussed below 58% of households with farming as the principal occupation of the head had no non-farm earned income. This would amount to about 80,000 households in total or over one-third of all holdings. Therefore, nearly two-thirds of all holdings would have had some non-farm earned income.

of this data see Moss *et al*, 1991). The farm households in these surveys are those with farming as the principal occupation of the head of household; they therefore exclude those who farm but have a non-farming principal occupation.

The data in Table 8 show the composition of farm household income for the three years of the survey. In 1987 farming accounted for only 54.2% of gross household income of those people whose principal occupation was farming; 28.2% was from other direct income, and the remaining 17.6% was transfer payments received through the general social welfare system.

The trends over the years are in line with expectations in so far as non-farming sources of income grew in importance. The real increase in other direct income was 35% between 1973 and 1980 and 28% between 1980 and 1987, an increase of 72% over the full 14 year period, equivalent to 4.0% per annum. The real increase in transfer payments was 38% in the first period and a further 37% on the second period amounting to 89% over the entire period or 4.6% per annum.

TABLE 8

Composition of Gross Farm Household Income, 1973, 1980 and 1987. Values in Constant 1987 Terms

	1973		*1980*		*1987*	
	£	%	£	%	£	%
Farm Income	146.5	70.1	119.4	58.5	131.4	54.2
Other Direct Income	39.8	19.15	3.7	26.3	68.6	28.2
Transfer Payments	22.6	10.8	31.1	15.2	42.7	17.6
Gross Household Income	208.9	100.0	204.2	100.0	242.7	100.0

These are remarkable trends especially in the 1980 to 1987 period when the Irish economy was in recession and GNP was stagnant. It appears that over this period more farm households solved their income problem by obtaining off-farm employment than by increasing farm productivity.

Poverty in Agriculture

The third adjustment outcome identified in Chapter 1 is the negative one of no adjustment. Those farmers who do not have the ability or the opportunity to maintain or increase their incomes by adjusting their farm business or, by finding off-farm employment, are destined to experience declining farm incomes. They must increasingly rely on transfer payments flowing either through the agricultural support system or the general social welfare system. The increase in transfer payments shown in Table 8 has occurred through the general welfare system. But there has also been a rapid increase in recent years in direct payments to farmers which are included under farm income in Table 8 but are shown separately as subsidies in Table 1. These would nearly double over the next three years if the Commission's reform proposals are agreed.

Despite the increase in both "green" transfer payments and general transfer payments there is still a substantial poverty group in farming which has been highlighted by an ESRI study (Callan *et al*, 1989). The results are summarised in Table 9 alongside similar data from the *Household Budget Surveys* of 1973 and 1980.

TABLE 9

Risk of Falling Below the 50% Relative Poverty Line by Labour Force Status of Head of Household[a].

	1973 HBS	*1980 HBS*	*1986 ESRI*
Employees	4.6	3.7	4.4
Self-Employed Non-Farm	10.6	8.6	11.6
Farmers	21.2	27.0	35.8
Unemployed	63.8	63.1	58.9

[a] The risk of poverty was defined as the proportion of the members of a group falling below the relative poverty line.

The 1986 data for farmers are biased upwards by rather low farming incomes in that year; the 1987 figure from the *Household Budget Survey* was about 25% compared with the 35.8 in the table. It still leaves the risk for farmers at more than double that for other self-employed people and six times that of employees. This poverty problem is concentrated on holdings of small and medium acreage where agriculture is the major source of income and where that agriculture is mainly drystock. These are to be found in all regions of the country with the greatest concentration in the West and Midlands and the least in the South East (Moss *et al*, 1991).

CHAPTER 3

MARKET PROSPECTS

To evaluate the Commission's reform proposals it is necessary to take a view on the general economic environment for agriculture which is likely to prevail in the years ahead. If that view pointed towards an improvement in the fundamental supply-demand imbalance on EC markets then the reforms could be moderated, postponed or even rejected. If on the other hand a continuation or deterioration of past imbalances is in prospect, then either this package of reforms or some alternative package has to be implemented unless the FEOGA could be continuously expanded to dispose of growing surpluses. The evaluation then would consist of defining the feasible options and assessing their relative merits and demerits. Supply-demand prospects as well as FEOGA prospects will be considered in this chapter while evolving trade policy will be reviewed in the next chapter. The supply-demand prospects will be considered first with respect to the internal EC market and later with respect to the international scene.

The EC Market

The imbalance between demand and supply on the EC market has been quantified in Chapter 1. It was noted that the rate of supply expansion in the EC has decelerated in recent years, but at the same time growth in demand has also decelerated and imported produce has grown in key commodities such as cereal substitutes from the United States and cattle from Eastern Europe.

Looking ahead there is no scope for optimism on the demand side of the demand-supply equation within the EC. Population growth is minimal - projected at 0.1% per annum, while the composition of the population is ageing and its wealth growing (Perlitz, 1989). These trends are especially adverse for the main commodities which Ireland produces, milk and beef. Within the milk family of products there is some demand buoyancy for cheese, yoghurts and fresh cream, but liquid milk, butter and skim milk powder - the mainstay of Irish production - are either static or in decline (Milk Marketing Board, 1990). The demand for beef has been static and may well decline in the future. The experience in the US is ominous where per capita consumption has fallen by 12% over the past decade while the total meat diet per capita was growing by 4%: the fall in beef consumption was more than offset by a rise in poultrymeat consumption. Beef consumption in the EC is under strong threat from other meats and from vegetarian tendencies. The price of beef is high relative to other meats; poultrymeat and pigmeat are more amenable to processing into convenience forms; and beef has come under most criticism in recent years from the health point of view with BSE and Angel Dust to the forefront and bovine TB as a potential problem in the future.

There is a growing interest in food quality and safety as people's consciousness of health is increasing. This is expected to continue, propelled in particular by the ageing structure of populations. This trend provides opportunities as well as threats,

and some efforts are being made in Ireland to promote a quality image. Progress to date has however been modest.

On the supply side the source of increased production derives from the invention and adoption of new technology. The dynamics of technological change are not well understood, but it is fair to say that its thrust has been underestimated ever since Malthus enunciated his gloomy principles some two centuries ago. Today there are neo-Malthusians who take a similar view. They argue that technological innovation is slowing down and is encountering increasing environmental and safety opposition. In the case of cereals, for example, it has been argued that most of the impressive yield increases of the past 20 years, which amounted to over 2% per annum, are attributable to once-off innovations such as increased nitrogen application and a switch from Spring sown to Winter sown crops. Against this the Commission has been struggling to keep production within manageable limits and now is proposing land set-aside to take 10% of cereal land out of production. Similar excess capacity exists for the production of all major commodities in the EC.

The International Market

Turning next to the international market the global demand outlook has more possibilities than in the case of the EC market. World population is growing and will continue to grow for many years at some 85 million per year. But most of this extra population does not have the purchasing power to participate in the market place for food. The only ways they could get access to food are to be given it through food aid or to be provided with the purchasing power to purchase food. The former is only an emergency action which does not and cannot tackle the real challenge of long-term development in the poor countries. The latter could help to stimulate long-term development if properly packaged. Both approaches are expensive; one proposal for a world *food stamp plan* of the type operated domestically in the US would cost $75 billion annually. In the words of the author:

> "That is a lot of money, but by coincidence, it is roughly what is spent each year by the world's wealthier countries to support farm incomes and food aid programs. If an international food stamp program were set up to operate at this level, traditional farm programs could be drastically cut back or even eliminated because farm prices on world markets would rise by 30-35% and commercial exports of agricultural commodities would increase by 60%" (Peterson, 1991, p.44).

There is little prospect of any such upsurge in the benevolence of the rich countries, so the world's poorest people will continue to subsist outside commercial markets for food.

There are some countries however where prospects are brighter, namely, the "middle income" countries. While in advanced economies the factors which determine demand trends - population and income growth and income elasticity of demand - are so low as to give little buoyancy, in rapidly growing middle income countries

the contrary is the case. In favourable circumstances annual growth rates in aggregate demand of some 5% have been recorded. There are over a billion people in these countries, more than the population of the advanced economies. In the 1970s they were a source of rapidly growing food demand and imports, but after the second oil crisis in 1979 many of them lapsed into recession weighed down in particular by an enormous debt burden which they had accumulated during the 1970s. Their prospects for resumed growth depend on their success in overcoming their debt problems, in restoring effective management of their economies and in having access for their exports to the markets of the advanced economies. Many of them are in fact showing signs of surmounting their problems and resuming growth.

The current momentous happenings in Eastern Europe are also exposing a need for food which will have to be met from the West in the short term.

Neo-Malthusians tend to highlight such developments and to link with them evidence of resource deterioration, such as, depletion of water reserves for irrigation in many countries like the Middle East, India and the US, and erosion, salination and desertification of soils in Africa, the former USSR and South-East Asia. Global warming is also cited as a long-term threat. The conclusions of one of the leading desciples of this school are as follows:

> "At a time when demand for various biological products is rising rapidly, the earth's biological productivity is shrinking. The even greater annual additions to world population in prospect for the nineties will further reduce the earth's ability to supply our food and raw materials" (Brown, 1990, p. 7).

These views are rubbished by the majority of scientists and economists. They believe that science will continue to throw up new technologies which will enable the world population to comfortably feed its growing appetite. In so far as there is a hunger problem they argue it is caused by poverty and war rather than by scarcity of food (Sen, 1986). The following is a recent representative view:

> "More people - and a higher proportion of the world's population - enjoyed adequate nutrition in 1990 than ever before in the world's history. Record non-US crop production continued the favourable trend of the 1980s, driven by a host of new plant breeding improvements, broadening use of new farm systems, and LDC investments in fertiliser plants, tubewells, seed farms and roads. The renewed famine predictions of the past two years were erroneous - again - even though the world is passing through the peak of the population growth curve. Hunger in 1990 and 1991 is due primarily to "mistakes of governments" - civil wars and national economic policies that discourage farmers and investors" (Avery, 1991, p. 1).

While nobody can be sure about future events, the evidence of the past two centuries supports this optimistic view of abundant food supplies to meet global demands. Temporary shortages have been experienced in the past brought about by once-off events such as bad weather or radical changes in policy. Another is currently in the

offing if the former USSR and other Eastern European countries falter in their efforts to transform their agricultural economies and have to be provided with substantial Western food aid. But the Eastern European food shortages are again transient because that region has great potential to expand production especially in the commodities of greatest interest to Ireland. Some of the countries in Eastern Europe are expected to mobilise that potential within a few years; the front runners include East Germany, Hungary, Czechoslovakia and Poland. Others, including the former USSR itself, are likely to take much longer to transform their command economies into market economies. In the meantime any requirements from the West can be readily met from the surplus resources now in agriculture.

Overall then it is difficult to disagree with the Commission's conclusions that:

> "Existing price guarantees, through their direct link with production lead to growing output; this extra output could be accommodated only by adding to intervention stocks, already at excessive levels, or by exports to already over-supplied world markets" (EC Commission, 1991b, p. 3).

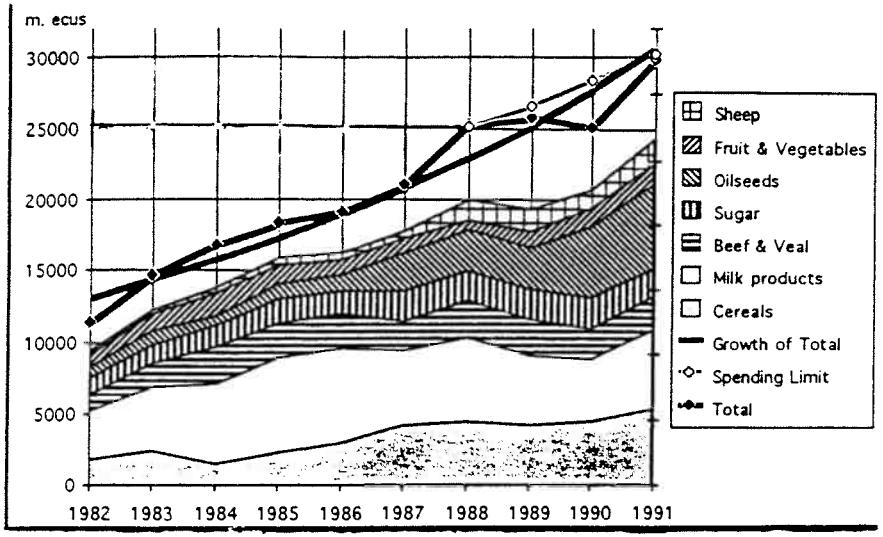
The Available Budget

The extent to which any given degree of market imbalance depresses market prices depends on the availability of budgetary resources to finance the disposal of surpluses. As indicated in Chapter 1, the available budget has not grown fast enough since 1977 to avoid a decline in real agricultural prices. In fact the size of the budget has been the fulcrum around which the on-going reform process has pivoted. In response to mounting criticism of the growing size of the budget and the uncontrolled nature of much of that growth, the EC after years of wrangling and abortive initiatives, finally agreed a budgetary discipline in 1988 which put effective controls in place. A ceiling was set on the overall EC budget up to 1992 and a maximum annual rate of growth was imposed on the agricultural guarantee expenditure, i.e. price supports. These arrangements have allowed the budget to grow to 31.5 billion in 1991, as shown in Figure 5.

It is now proposed that the ceiling for the total EC budget be raised from 1.2% to 1.37% of the Community GNP over the next five years. Commitment appropriations for total CAP expenditure would grow from 35.3 billion ECU in 1992 to 39.6 billion ECU in 1997 inclusive of the extra cost of the reform proposals (EC Commission, 1992). These budgetary proposals provide little scope for any further increases in surpluses. Furthermore, the proposals may be modified downwards by the EC Council.

FIGURE 5

FEOGA Expenditure, 1982 to 1991



Source: Harvey, D. R., "Europe: From Politics to Reality," Oxford Farming Conference, 1992

OECD Outlook

In the medium and longer term the prospects are that supply will continue to outpace demand and put downward pressure on prices and upward pressure on budgets. This is emphasised in a recent OECD report:

> "The 1990 situation and the medium-term outlook indicate that reform cannot be repeatedly postponed without severe economic consequences, because structural surpluses always re-emerge, following periods of temporary respite. Policy makers should be alert to the fact that the current situation also contains a number of possible threats to the reform process. Increased food aid needs, food distribution problems in the USSR, and environmental concerns are very important issues. However, they should not be used as arguments to once again avoid reform, as droughts and other events have been so used in the past. The structural nature of the underlying surpluses is such that they will re-emerge with all their attendant difficulties if reforms remain marginal. This has already occurred in 1990. Thus, both the current situation and medium-term outlook indicate that reform is imperative and urgent" (OECD, 1991, p. 29).

CHAPTER 4

EVOLVING TRADE POLICY

As stated earlier virtually all countries in the world intervene in agricultural markets - in developed countries to maintain prices and incomes above free market levels in the interests of farmers and in developing countries to maintain prices and incomes below free market levels in the interests of consumers. The OECD has been measuring the extent of this protection in recent years using the Producer Subsidy Equivalent (PSE) as the unit of measurement. The PSE is the percentage of total farmer revenue attributable to protection and is shown in Table 10 for some of the main trading countries. It ranges from 5% in the case of New Zealand where there is virtually no protection to 30% in the USA, 48% in the EC and 68% in Japan.

TABLE 10
Percentage of Farmers Revenue Attributable to Protection in Selected Countries, 1990

New Zealand	5
Australia	11
United States	30
Canada	41
The EC	48
Japan	68

Source: OECD (1991), *Agricultural Policies, Markets and Trade-Monitoring and Outlook 1991*, Paris, p. 115.

The origin of this protection is deeply rooted in history (Sheehy, 1989). Only the UK persisted with free trade into this century and it succumbed to protection in the Great Depression of the 1930s. Post-World War II substantive steps were taken to liberalise industrial trade, mainly under the aegis of the GATT, but at the same time agricultural protection was intensified. This divergence in the evolution of agricultural and industrial trade policy is explainable in terms of preferential attitudes towards agriculture. These have changed over time and are still changing and it is the direction and rate of that change which will determine the future course of trade policy. An analysis of the rationale for protection therefore provides the key to the future.

Rationale for Protection

The specific reasons for protection have varied somewhat by country and over time, but three general objectives can be identified as follows:

1. To support and stabilise prices received by farmers and thereby support and stabilise their incomes;
2. To promote agricultural growth; and
3. To preserve rural society.

Income support is now the predominant justification for agricultural protection. Yet this objective came to the fore only after World War II when regular measurement of the level of incomes became available through the development of both National Accounts and of farm management surveys. Prior to this the focus was on supporting prices rather than incomes.

There are two distinct income problems involved: the tendency for agricultural incomes to fluctuate widely over time as varying supply interacts with price inelastic demand - the *income instability* problem, and the tendency for agricultural incomes to fall over time as expansion in supply tends to outpace growth in demand while resources in agriculture fail to adjust - the *low income* or *redundancy* problem as described in Chapters 1 and 2.

Efforts over the years - mostly in vain - to formulate international commodity agreements are perhaps the clearest expression of stabilisation policy. In addition, many of the initiatives in the 1930s, such as the establishment of marketing boards were initially seen as means of stabilising prices rather than raising them long-term over free market levels. But even when stability was the clear intention of these initiatives it usually had to yield over time to pressures to raise the price level, so that today the stability objective is subsumed under the income support objective. Of course, in so far as stability is attained behind protection it is done largely by increasing instability on export markets on to which the fluctuating surpluses arising behind protection are dumped.

The promotion of agricultural growth by protection to meet growing domestic demand has been an influential motive for protection especially in food importing countries, such as the UK and Japan. This has had both an economic and a food security dimension. Its economic merit has always been refuted by mainstream economists. Classical economic theory from Adam Smith forward has highlighted the misallocation of resources caused by protection and has emphasised the merits of free market allocation in accordance with the law of comparative advantage. The misallocation was deemed to be wasteful whether it had the effect of displacing cheaper agricultural imports or, more obviously, when it led to surpluses which had to be exported.

An earlier school of economists, the French Physiocrats, had however given a legitimacy to priority for agriculture (Heimann, 1974, pp. 52-63). They argued that the only productive activity in the economy was agriculture because it was the only activity which created a surplus through its regenerative processes. While this line of thinking seems rather quaint today, it still colours French thinking and is also widely reflected in the attitudes of farmers themselves.

The weakness of the economic rationale for agricultural protection was counter-balanced by the strategic argument for food security. It was claimed that a country should not be dependent on other countries for a basic necessity of life. This undoubtedly was a compelling consideration for persisting with protection in the warring world before and after World War II when multilateral efforts were under way to liberalise industrial trade.

The socio-political interest in the preservation of rural society is perhaps the aspect which most clearly differentiates agriculture from industry and has justified the contrasting treatment of the two sectors in trade policy. The economic view of the Physiocrats was complemented by the socio-political view of many influential thinkers, such as Jefferson that rural society had a superior morality and a more stable structure than the more volatile urban classes (Whitney Griswold, 1952). The political expression of these values was relatively easy to achieve in earlier times when the landed classes still retained some of their feudal power and even in more recent and democratic circumstances where rural votes were numerous.

Towards Trade Liberalisation

The foregoing rationale for agricultural protection is being gradually eroded in a changing world. The global socio-economic system is very different today from what it was in the post-World War II period. In the 1980s the resurgence of free market philosophy has been notable, whether in its Reaganomic, its Thatcherite or its Irish versions. Even nominally socialist governments have been converted in France, Australia and New Zealand, and of course more recently the socialist economies of Eastern Europe and Asia have begun to restore market forces. This growing movement reflects a widespread reaction to the growth in government intervention in economic affairs which had been in train since the 1930s. It is fostered internationally by developments in communications and transport which are rapidly reducing the world to a global village in which multinational companies can operate on a worldwide scale. Against this background the continuation of state regulation of agriculture is becoming increasingly anomalous.

At the same time the inefficiency of such intervention is being highlighted. Much of the income transfer from taxpayers and consumers accrues to the post- and pre-farm sectors rather than to farmers who are the object of the support; in so far as it does reach its target it causes more resources to be retained in the industry to share the supported income and thereby dilute the increase in average income aimed at; and by encouraging expansion it depresses world prices thus offsetting some of its beneficial affects on income. Harvey and Hall (1989) have defined *transfer efficiency* as the percentage of total support measured by the PSE which accrues to farmers' income. They have estimated that only 32% of the PSE for 16 commodities under the CAP goes to raise farmers' income.

Furthermore, the effect of protection in supporting prices above their free-market level is inequitable because it benefits producers in proportion to their turnover. This is becoming more acute as production becomes more concentrated. Today the largest 15 per cent of farmers in Ireland produce some 50 per cent of all output and gain proportionately from price supports. The EC Commission estimates that in the EC the largest 12% of cereal producers account for two-thirds of production, and the largest 15% of dairy farmers account for half the milk output (1991b). In the US the position is more extreme with projections that by the year 2000 the largest 4% of farmers will produce 75% of total output (US Office of Technology Assessment, 1985). This trend towards concentration is undermining the key political concept of

the family farm which has had a powerful influence in sustaining public support for agriculture.

The need to support the incomes of poor farmers is not being challenged; rather it is the fallacy of doing so indirectly by a price support policy operated by protecting agriculture from competition. The universal practice outside of agriculture is to address low income problems directly by payment of supplementary income. There can be little doubt that if agricultural policy, instead of being inherited, had to be constructed today to deal with the problems of the industry, it would be a policy of direct income support for those farmers deemed to be in need of it, namely, those incapable of surviving by adapting to the economic and technological forces of change.

The public is also being alienated by the focus on excessive food stockpiles. Given these stockpiles the argument for stimulating agricultural growth in Developed Countries has lost any validity it may have had in the past. Admittedly, agricultural growth can still benefit an individual farmer or one group of farmers, such as Irish farmers within the EC, but it cannot contribute to the overall EC economy if it takes place at heavily subsidised prices. In addition, agricultural growth can play an important role in many Less Developed Countries (Mellor, 1990).

The concern for food security is also diminished by these surpluses and by the receding memories of war, and the disintegration of the USSR has consolidated that process. Droughts and disasters will continue to cause temporary scarcities, and these may even become more frequent as global temperatures increase. But it is not convincing to claim that the world needs its present agricultural protection to cope with such events, because the logical approach would be to devise stock holding policies designed specifically for the purpose.

Economists emphasise the waste of price policies which generate excessive surpluses, but the immorality of these surpluses is a greater public concern especially when they are set against pictures of famine. Indeed, a wealthy world that can afford the arms race can quite readily afford the cost of food surpluses if that was all that was involved. The farmers' share of the consumer's pound in the rich countries has declined from around 30 pence at the turn of the century to about 3 pence today, so that a relatively large increase in the efficiency of farming would not be of major significance to the wellbeing of society. Even the arch-free trade editor of Agra-Europe was led to exclaim:

> "Though they may not be fully aware of it, the groups of agricultural economists who have over recent months been fulminating from Canberra, from Brussels, from Munich and from Washington have all revealed that the cost of current wasteful agricultural protection policies is so small in relation to the immense wealth of the industrial nations and the benefits' of reform to the non-agricultural population so small - not to say highly difficult to prove - that they just do not matter" (*Agra-Europe*, 1988).

If the income and growth props of agricultural protection are corroding perhaps the socio-political prop will survive - and suffice. Certainly up to this point the political influence of farmers around the world is showing remarkable durability. There is still an interest in rural preservation (EC Commission, 1988), but today that interest relates to such *public goods* as landscape and environment rather than to the more abstract nature of rural social values. While farm populations continue to decline, the geographic dispersal of the farmer vote and the special arrangements which exist in many countries to favour that vote, have enabled farmers to retain disproportionate power. Of the three major trading blocks today - the EC, the US and Japan, only in the EC are there no significant special arrangements in favour of farmers in the voting system. The US has its two Senators per State regardless of the State's population, and the Japanese have the gerrymander of lagged constituency revision which gives much more representation per rural vote than per urban vote. However, in Japan the legislature is being forced by the courts to reduce the disproportionalities among the electorate and consequently the rural influence (Australian Bureau of Agricultural and Resource Economics, 1988).

Therefore, the change in attitudes towards protection is a slow one. There remains very strong resistance to trade liberalisation as evidenced by the slow progress of the current GATT negotiations. While all parties are committed to "substantial progressive reductions in agricultural support and protection". progress on agreeing how to do this has been painfully slow. Yet Japan has reluctantly agreed, under strong pressure from the US, to begin to open its fruit and beef markets to outside competition. South Korea is being forced to follow that example. The current EC reform proposals are designed to form the basis of a GATT agreement which, if it is realised, would be a significant first step towards liberalisation. The virtual abolition of supports for agriculture in New Zealand in recent years is not perhaps too surprising given that it is an exporting country and the level of support there was already rather low at about 25% PSE. The most dramatic change is taking place in Sweden, a country with a historically very high level of protection (59% PSE in 1990). There the government decided in 1990 to phase out internal market supports and export subsidies between 1991 and 1996 and to lower protection of the internal market from imports in line with the prospective GATT agreement (Swedish Ministry of Agriculture, 1991).

Trade liberalisation will be encouraged by events in Eastern Europe. One of the greatest needs of the emerging market economies in Eastern Europe is access to markets including agricultural markets. To some extent agricultural trade can be fostered among the Eastern Countries themselves. But these countries are also seeking access to EC markets. Already associate membership has been agreed between the EC and Poland, Hungary and Czechoslovakia, and later these countries and others in the East will want to become full members. A conflict is therefore arising between the desire to protect EC farmers in the West and the moral responsibility to assist in the reconstruction of the East. The outcome must be some degree of improved access to EC markets and therefore increased competition within the EC. Indeed the very nature of the EC itself is at issue as a growing list of countries

queue for membership. Austria, Sweden, Norway, Turkey, Cyprus and Malta have already applied while Finland, Poland, Hungary and Czechoslovakia plan to do so.

Current GATT Proposals

Against this historical review it is not just an accident that agriculture is at the centre of the current Uruguay Round GATT negotiations having been on the periphery heretofore. The two main protagonists in the negotiations are the US and the EC. The US has led the case for liberalisation since the negotiations began in 1986 but is strongly supported by other agricultural exporting countries and especially the so-called *Cairns* group of countries (Argentina, Australia, Brazil, Canada, Chile, Colombia, Hungary, Indonesia, Malaysia, New Zealand, Phillipines, Thailand and Uruguay).

Originally the US proposed a total elimination of trade barriers and export subsidies over a 10-year period along with harmonisation of sanitary and phytosanitary regulations. The EC's opening position in 1986 was quite vague relative to that of the US and entailed no more than an agreement to "substantial progressive reductions in agricultural support and protection". It insisted on scope for "rebalancing" within an overall commitment to reduce the level of support measured by the Aggregate Measure of Support, the AMS. In other words given any agreed degree of reduction the EC would be free to achieve this by raising protection on some commodities, specifically cereal substitutes and oilseeds, while lowering it on others.

The current state of the negotiations is incorporated in a GATT *Draft Final Act* drafted by the Director General of the GATT on his own initiative and published in December 1991. The proposed changes would take place over the six year period, 1993 to 1999. The main changes relate to internal support, import barriers, export subsidies and sanitary and phytosanitary regulations.

Internal support would be categorised into trade distorting and non-trade distorting. The former are supports that are directly linked to current production, such as price support. They would be phased down over the six year period by 20% of their magnitude in 1986 to 1988 as measured by the AMS. Those that are decoupled from current production and therefore non-trade distorting would be exempt from GATT regulation; these would include research and extension, food aid, resource retirement programmes, aids for structural change and environmental programmes. But they would not include the compensation payments proposed in the EC reform package nor the existing headage payments which are an important measure under the CAP.

All import barriers would be *tariffed* or converted to equivalent tariffs and these would be reduced in aggregate by 36% of their levels in the 1986 to 1988 period with a minimum reduction of 15% for each tariff line. In addition, access to internal markets for specified categories of commodities would be facilitated to the extent initially of 3% of domestic consumption rising to 5% by the end of the six year period. The average level of access prevailing in 1986 to 1988 would have to be maintained and where access already exceeds the targets it would have to be increased by an unspecified amount.

Direct export subsidies would be subject to both a budgetary and volume reduction. The expenditure on such subsidies would be reduced by 36% of their cost in the base period 1986 to 1990, and the volume of exports would be reduced by 24% of their magnitude in the same base period.

A detailed set of rules would be agreed on sanitary and phytosanitary regulation.

These GATT proposals are unacceptable to the EC under a number of headings as follows. The EC wants its proposed compensation payments along with existing headage payments to be exempt from GATT regulation. Provision is sought for imposing or increasing tariffs on cereal substitutes entering the EC market - rebalancing. The proposed limits on subsidised exports are considered to be too severe and access to internal markets too generous. There is unacceptable unbalance in the proposed measures as between countries; for example the US deficiency payments would be exempt from the proposed restrictions on exporting because they subsidise exports indirectly rather than directly. There is also a lack of coherence among the respective proposals, as the proposed reduction in internal support would be well exceeded in the case of the EC if the other proposals were implemented. The EC believes that some further controls will be needed beyond those proposed to achieve and acceptable degree of market stability. Finally, the EC wants to be assured that compliance with any agreed undertakings will be sufficient to meet its commitments under the GATT; in particular there is a concern that the US might challenge the EC if US exports to the EC did not increase as much as the US would desire.

In addition to these general areas of disagreement there are many other differences between the GATT proposals and the EC on the technicalities of an agreement. The manner of tariffication, the treatment of changes in exchange rates and the method of measurement of the AMS are important examples.

CHAPTER 5

EVALUATION OF THE COMMISSION'S REFORM PROPOSALS

The Commission's reform proposals were published in July, 1991 (EC Commission, 1991b). They have been under negotiation since last Autumn and have been modified somewhat in the process. Further modification will occur as negotiations continue towards agreement. It is the original version of the proposals which is described and analysed here, though the more important modifications to date will be noted.

The Proposals

There are basically two policy instruments available to tackle surplus production, namely, price reduction and direct supply control. Not surprisingly then the current proposals consist of a blend of these two approaches along with a selection of accompanying measures all to be installed over a three year period, 1993 to 1996. Underlying the proposals is the philosophy that the farmer today has a dual role, the traditional one of food producer and a new one as manager of the countryside.

The central and most radical part of the package is a reduction in cereal prices of 42% to a level which "represents the expected world market price on a stabilized world market". In addition, milk prices would be cut by 10%, beef prices by 15%, and eligibility for the ewe premium (a form of deficiency payment) would be limited to the flock size of 1990 subject to a maximum of 750 ewes per flock in the Disadvantaged Areas and a maximum of 350 ewes per flock elsewhere. Co-responsibility levies would be eliminated in the case of cereals and milk and Community promotion programmes for dairy products and beef would be put in place co-financed by the industry and the Community including a levy on sales to intervention.

The second radical component of the package is the proposed payment of comprehensive compensation to small and medium sized farmers. Cereal farmers producing less than 92 tonnes of cereals, oilseeds and protein crops, i.e. about 15 hectares at average Irish yields, would be paid full compensation unconditionally while those producing more than this would have to agree to set aside 15% of their area of such crops; if they did so agree they would qualify for the compensation payment on all the area sown and also on up to about 5.5 hectares of the set-aside area. Thus, a farmer with 37 hectares of cereals would be required to set aside 5.5 ha and would receive compensation for the full 5.5 hectares; however a farmer with 100 hectares of cereals would be required to set aside 15 ha but would receive compensation for only 5.5 of the 15. The regulation of the market resulting from these proposals would be rather similar to that operated in the US.

The reduction in milk prices would be partly offset by cheaper cereal feed, but to prevent intensive producers receiving most compensation in this way an annual premium per cow would be paid on the first 40 cows subject to a stocking rate limit

per forage hectare; the limit proposed was 1.4 livestock units per hectare in Disadvantaged Areas and 2.0 livestock units per hectare elsewhere. Non-intensive producers would thereby qualify for this premium on all their cows up to 40, whereas intensive producers would not qualify for any premium.

The reduction in beef prices would also be partly offset by cheaper cereal feed, but again to maintain balance between intensive and extensive producers a premium would be paid on male animals up to a limit of 90 animals per herd and subject to the same stocking rate limit as for dairying. Also the premium on suckler cows would be increased and paid subject to the same herd size limits and stocking rates.

In addition to the price proposals there are a number of supply control elements in the package. For milk there would be a 3% reduction in the milk quota with compensation being paid for loss of income over 10 years. For cereals, oilseeds and protein crops there would be the set-aside requirement to qualify for compensation. For beef there would be a new scheme to pay a premium for the slaughter of male calves from dairy herds to reduce the calf supply available for veal and beef production. The stocking rate conditions for premia would also limit the intensification of production. And for sheepmeat the ceiling on flock size qualifying for the ewe premium would tend to freeze flock sizes below the upper limits at their 1990 levels and to reduce flocks which are already over the limits of 750 and 350 ewes in disadvantaged and other areas, respectively; it would not, however, prevent an increase in output from increased lamb yields.

The most recent version of the proposals being considered incorporates a sheepmeat type limit on beef, namely, premia would be limited to a base herd size. Also the base period for the ewe premium would be either of the years 1990 or 1991. The stocking rate criteria have also been relaxed to two livestock units per hectare in both disadvantaged and non-disadvantaged areas.

There is a number of Accompanying Measures in the package consisting of an Agri-Environment Action Programme, an enhanced Afforestation Scheme and an Early Retirement Scheme. In the case of Ireland each of these would be funded to the extent of 75% by the EC. Under the environmental programme farmers would be paid hectarage grants to engage in environment friendly activity, such as reduced use of potentially polluting inputs, management of the landscape both farmed and non-farmed, and long-term set-aside for environmental purposes. The afforestation measures would increase the level of establishment grants and extend them to public authorities; they would provide a management grant for 5 years for new plantations; they would increase the grants payable over 20 years for loss of income pending maturity of the trees, and they would extend them to private individuals other than farmers living in rural areas. The early retirement scheme which would be compulsory for each member state would pay a pension at age 55 or over to farmers not already in receipt of a pension to release their land to their successors or others for restructuring or for non-agricultural purposes.

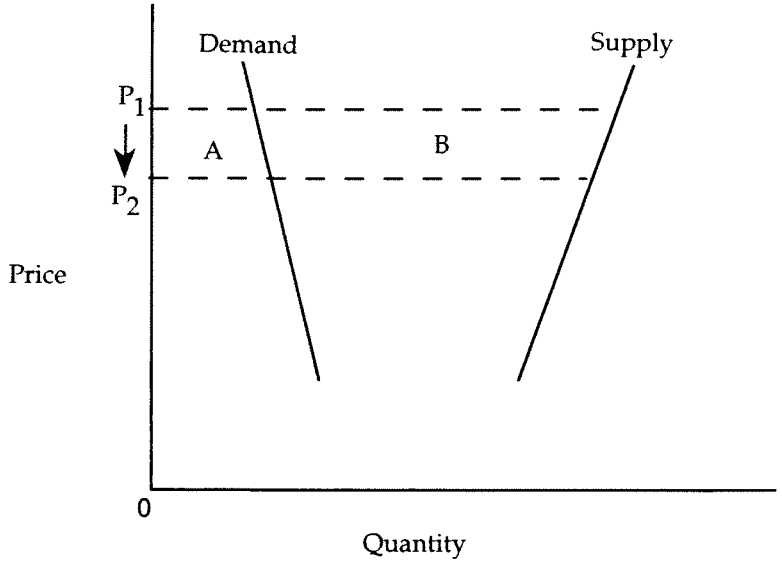
Income Redistribution

Any set of policy changes such as the foregoing involve redistribution of income among groups in society as well as some overall net welfare gain in so far as the changes would lead to a more efficient allocation of resources. The main redistribution in the proposed changes would derive from the price reductions and the compensation. The supply control measures in the package would also involve some loss to producers, but it would be small relative to the price and compensation changes.

The gains and losses from price reduction are shown schematically in Figure 6 which represents an exporting country like Ireland with supply well in excess of domestic demand; on average some 75% of Irish agricultural produce is exported and only 25% is consumed at home. The representation is a static one and does not allow for the adjustments in resource allocation and in consumption which take place over time and which tend to counteract the effect of price reductions on incomes. Nor does it account for gains to taxpayers who fund FEOGA as price reductions reduce the budgetary costs of surpluses.

FIGURE 6

Income Transfers Resulting from Agricultural Price Reduction in Ireland



If the price is reduced from P_1 to P_2 the diagram tells us that producers lose income represented by the area A + B. The losses incurred by producers flow to their customers who buy their produce and who now get cheaper food raw materials. Some of these customers are in Ireland and gain income represented by area A; the others are abroad and they gain to the extent of area B. From the national point of view there is a critical difference between the two sets of gainers: the gain to Irish customers at the expense of Irish producers is an internal transfer of income within

the country and entails no direct net national loss; the gain to foreign customers at the expense of Irish producers is however a national loss which is reflected in diminished export earnings. Because of this export loss a policy which lowers prices for agricultural produce, in the absence of compensation, is bad national economics even though it would benefit Irish consumers.

Figure 6 shows the transfers resulting from a price reduction in the case of an exporting country. If a country were self-sufficient in agricultural produce, as is approximately the case in Germany for example, all the producer loss would be reflected as a consumer gain and there would be no net national loss from lower prices. If a country were a net importing country, such as the UK, then the total domestic producer loss would be offset by a gain to domestic consumers, and in addition domestic consumers would get cheaper imported produce from foreign producers, so there is a net national gain from lower prices. Thus, the net national outcome depends critically on the trading status of the country.

The realisation of these transfers may not work out in the real world as clearly as shown in the diagram because there is a very wide margin between the farm gate and the retail customer (Lucey, 1991). A fall in farm gate prices has to be transmitted through a processing sector and then through a distribution sector to arrive at the retail level, and this transmission system may not be perfect. The efficiency of the transmission in a market economy depends entirely on the degree of competition prevailing. While farmers often suspect inadequate competition in post-farm gate markets, it is difficult to believe this suspicion in the case of the distribution sector where competition is so keen. In the processing sector there may be more scope for collusion, with the Irish meat processing sector being a prime suspect. Yet over time there have been more casualties in this sector than in most businesses which is not compatible with a monopsonistic situation.

Very little research has been done on price transmission in EC food markets. However, a review of aggregate price movements over time at farm gate and retail level provides some relevant evidence. The relationship one would expect between the two price movements depends on, firstly, the size of the post-farm sectors and, secondly, developments within those sectors themselves. In Ireland the post-farm sectors are approximately as large as the on-farm and pre-farm sectors; in other words of £100 spent on food produced and consumed in Ireland some £50 accrues to post-farm processing and distribution and the other £50 accrues to farmers and those who supply inputs to farmers. Given this 50:50 breakdown, a 10% fall in farm-gate prices, if fully transmitted to retail, should produce a 5% fall in retail prices.

But the actual experience at retail will reflect developments in the post-farm sectors as well as those at farm gate. Costs might be static in the post-farm sectors in which case, assuming competition to be effective, there would be little if any impact on retail prices deriving from these sectors. On the other hand costs might be increasing in those sectors, perhaps in line with inflation, in which case they could be expected to transmit price increases equivalent to inflation rates to the retail level. The overall

impact at retail would then be the average of the farm gate experience and the post-farm experience. Aggregate real prices of Irish agricultural produce fell by 46% between 1977 and 1990 while the real price of food fell by 22%. At EC level real prices of EC-9 agricultural produce fell by 32% between 1977 and 1990 compared with a fall of 15% in the real price of food. In both cases the results, though crude, are consistent with the hypothesis that the fall in retail prices is caused by the reduction in farm gate prices alone while the contribution of the post-farm gate sectors was neutral - neither increasing nor decreasing real retail prices.

Analyses To-Date

Four sets of analyses are available on the impact of the reform proposals; they are by the Department of Agriculture and Food, by Leavy and Heavey of Teagasc, by Boyle and by Fitzgerald and O'Connor of the ESRI (1991). The latter analysed the macroeconomic implications of a version of the reform proposals which was leaked in early 1991. However, the final proposals were very different from the leaked version. The Leavy and Heavey (1991) analysis and the Boyle (1991) results are broadly similar to Scenario I of the Department of Agriculture and Food (1991). Therefore, the Department's Scenario I results are taken as the starting point in this paper.

The Department's results and the adjustments made to them in this paper are arrived at in a judgemental way; they are not the outcome of any sophisticated modelling as would be preferred in an ideal world. To analyse the proposals it is necessary to anticipate how they would be administered as such detail is not available. In addition, the proposals entail a complex combination of measures the impact of which is difficult to assess, so there is ample scope for disagreements as the adjustments made below to the Department's estimates illustrate.

The Department compared the outcome at farm level after three years when the reform package would be fully in place with the *status quo* as defined by the 1990 situation. Its main results are as follows:

(i) a fall in the value of Gross Agricultural Output of £504 million;

(ii) a reduction in input costs of £133 million;

(iii) compensation payments amounting to £277 million; and

(iv) a consequent reduction in aggregate farm income of £94 million.

The Department concludes "that the CAP reform proposals ... point to serious losses for the agricultural sector. Given the importance of the sector, this would translate into serious losses at the level of the overall economy" (pp. 14-15).

The Department acknowledges that its analysis is limited in scope. Firstly, it is confined to the effect on farmers whereas there would be important effects upstream and downstream in agriculture as well as on the wider economy, especially

consumers. Secondly, it takes into account only some of the dynamic effects of the reform proposals as they would operate through the market system: an induced fall of 15% in the prices of sheep, pigmeat and poultrymeat was assumed along with a reduction in the volume of inputs proportionate to the volume of output; the price of cereal substitutes was also assumed to fall in line with cereals.

Thirdly, the numbers of stock excluded from compensation because of the proposed stocking rate criteria are admitted to be at the "upper range of what is likely, as many farmers would be able to make on-farm adjustments which would mean avoidance of the loss".

Fourthly, and of most significance, the proposals are evaluated against the *status quo* as represented by the 1990 situation. But it is universally agreed that the *status quo* is not a tenable option in light of the market imbalances that exist, so the analysis should compare the proposed reforms with feasible alternatives which do not include the *status quo* .

The analysis below which is summarised in Table 11 attempts to address these limitations and in the process ends up with a very different conclusion from that of the Department. The estimated drop in aggregate farm income is first examined and this is followed by a consideration of the off-farm effects. Then the question of realistic alternatives to the reform proposals is discussed.

Effect on Aggregate Farm Income

The impact on aggregate farm income depends on the changes brought about in output prices and volumes, in input prices and volumes and in compensation. The most direct way of estimating the fall in output prices is to assume the fall would equal the reduction in support prices. But the reforms should have some firming effect on markets in which case market prices would not fall as much as support prices. The reduction in output prices estimated by the Department allows to some degree for this. Milk prices are assumed to fall by 10.5% which is 2% less than would result from the cut in support prices, and cereal prices are assumed to fall by 35% instead of the 42% cut in support prices proposed. No such allowance is made for other commodities. It is likely that markets would respond more positively than these assumptions imply, but it is not possible to make firm alternative estimates. The positive effect would be strengthened by a GATT agreement which would require all other countries to make parallel changes in their policies and thereby augment the beneficial market effects of unilateral EC action.

The reduction in output volume in the Department's analysis consists of a 3% reduction in milk brought about by the reduced quota, a 2% reduction in beef caused by the effect of the reduced quota on cow numbers, a 5.4% reduction in sheep numbers which unlike all other calculations is based on 1991 data rather than on 1990 data, and a 10% reduction in cereals as a result of the set-aside proposals.

TABLE 11

Impact of CAP Reform Proposals on the National Economy: Proposals V. *Status Quo*. £m in 1990 values

a.	Effect on aggregate farm income - Departments' estimate		- 94
	Adjusted by author as follows:		
	(i) Sheep calculations on 1990 base	+ 3.6	
	(ii) No change rather than decrease in beef volume	+ 21.0	
	(iii) Reduced cost of unsold cereal fed on farms	+ 23.0	
	(iv) Extra reduction in input volumes	+ 18.7	
	(v) Additional compensation	+ 30.6	
b.	Revised effect on aggregate farm income		+ 3
c.	Upstream/downstream value added loss		- 17
d.	Consumer gain		+ 102
e.	Effect on national welfare		+ 88

Recalculating the sheep outcome on a 1990 base instead of 1991 would reduce the volume decline to 2.8%, but the main issue relating to volume is the projected reduction in beef volume. This is at variance with experience since the milk quota was introduced in 1984. Dairy cow numbers have indeed been cut in line with quota reductions - a 7% cut in the aggregate quota between 1984 and 1991 has caused a 12% reduction in dairy cow numbers. But beef cow numbers have grown by 1.3 times the reduction in dairy cows to more than offset the fall in dairy cows. While beef cow numbers would be curtailed under the reform proposals because of the stocking rate criteria, the proposed new limits on sheep numbers would leave beef as the only major enterprise that could be expanded. It is impossible to anticipate the net effect of these conflicting forces, but an assumption of no change in the volume of beef is more plausible than the reduction estimated by the Department. Therefore, the volume reduction of £21.0 million in the Department's estimates is restored in Table 11. Indeed, an increase in beef production would be likely, and it is the fear of such an increase which has caused the proposals with respect to beef to be modified so that premia would not be payable on animals beyond a base herd number.

On the other hand the 10% reduction in the volume of cereals is minimal, as set-aside alone accounts for this reduction. In addition to the set-aside effect, the 35% reduction in cereal prices accompanied by acreage payments based on regional yields would radically change cereal/input price ratios and cause farmers to reduce input usage and yields. Any yield reduction should be matched or exceeded by reduced input usage so that the two adjustments would be offsetting. Therefore, no effort is made to estimate their magnitudes.

The impact of the reform proposals on intermediate inputs is accounted for by the Department by a reduction of 20% in the price of feedstuffs and of some 2.3% in the volume of feedstuffs and of other inputs. The price reduction for feed is a consequence of the reduction in cereal prices and an assumed equivalent price fall for cereal substitutes. However, no allowance was made for the saving resulting from cheaper cereal fed directly on farms, even though the loss on the production of such cereal is included in output. This amounts to some £23.0 million. It is likely that the prices of other inputs and especially those strongly linked to cereals would also fall as a result of reduced demand. Since 1977 the real prices of fertilisers and plant protection materials have fallen in Ireland and in the EC-10 by about 80% of the rate of decline in real prices of output. If this were to continue in the future it would mean a further saving in input costs of some £41 million, but this is not included in Table 11.

An important aim of the reform proposals is to reduce the intensity of production in the interest of an improved environment. As a consequence the volume of inputs would tend to decline for four distinct reasons:

(i) the reduction in output volume which on average is 1.8% in the estimates arrived at in this paper;

(ii) the reduced output/input price ratios especially in the case of cereals;

(iii) the extensification elements in the reform proposals in the form of the stocking rate criteria and the accompanying environmental measures which have yet to be detailed by the Commission. The livestock output/feedstuffs price ratio would improve, but the effect of this would be more than offset by the extensification measures: and

(iv) the extension of supply control to cereals and sheep which would make it more difficult for farmers to respond to price pressure as they have in the past by increasing output and would therefore focus their attention more on the possibility of reducing inputs as an alternative means of increasing productivity.

The impact of these four different forces would undoubtedly be much greater than the proportionate reduction in the volume of inputs assumed by the Department. The only model available to explore these output/input relationships produced a more plausible result showing the volume of inputs to decline by double the volume of output (Boyle, 1991). Such an outcome would mean that the total reduction in inputs would equal the reduction in output valued at post-reform prices. It would save a further £18.7 million on input purchase.

Finally, turning to the estimation of compensation the stocking rate conditions are assumed in the Department's analysis to preclude compensation for 24% of dairy cows, 20% of steers and 16% of suckler cows. These are maximum estimates as admitted by the Department and something of the order of half these percentages

would be more realistic. The additional compensation resulting would be £11.1 million on dairy cows, £14.9 million on steers and £4.6 million on sucklers, in total £30.6 million.

The result of the various adjustments advocated up to this point is to convert the Department's estimate of the impact of the reform proposals as a reduction of £94 million to a slight increase of £3 million. However, inflation would continue to erode aggregate real income. Assuming an annual inflation rate of 3% the increase of £3 million in nominal terms in the 1990 aggregate income of £1,443 million would be transformed into a decrease of £120 million. In percentage terms the Department's reduction of £94 million represents a 6.5% fall in nominal terms or a 14.5% fall in real terms. This would be moderated to an 8.5% fall in the revised estimates, and if the numbers employed in farming continue to fall as heretofore, the per capita fall in real income would be very little according to the revised calculations.

This income loss to producers would be significant but by no means unprecedented. The percentage change in real aggregate Family Farm Income (i.e. Income from Self-Employment and Other Trading Income *minus* interest charges) for each three year period since 1977 is shown in Table 12. Farm incomes fluctuated widely over this period. The estimated declines due to the reform package were greatly exceeded in the 1977 to 1982 period and also from 1983 to 1986 and 1988 to 1991.

TABLE 12

Percentage Change in Aggregate Family Farm Income in real terms, Each Three Years since 1977

	% Change		*% Change*
1977 to 1980	- 52	1983 to 1986	- 12
1978 to 1981	- 53	1984 to 1987	- 5
1979 to 1982	- 28	1985 to 1988	+ 36
1980 to 1983	+ 20	1986 to 1989	+ 48
1981 to 1984	+ 41	1987 to 1990	+ 8
1982 to 1985	+ 10	1988 to 1991	- 23

The concentration of three years of action in a single reform package tends to make the proposals seem more severe than they actually are when viewed against past trends. The annual reduction in the real net price effect on value added is in the order of 8.0 to 8.5% depending on the assumptions made about the impact of the price proposals in the market place. This is more severe than the past record of 5.5% as illustrated by projecting past trends forward in Figure 1. However, if the proposed reductions were stretched over five years instead of three they would become less severe than past experience. Even in the case of cereals where the price proposals are most severe, extending them over six years instead of three would dilute them to only equate to past reductions. Given the resistance to the proposals in the Council of Ministers some dilution of their magnitude is likely before agreement is reached.

Effect on National Income

The next stage in the analysis is to consider the effects on the rest of the economy which were not included in the Department's analysis. The main effects are to be found in the upstream and downstream industries linked to farming, in the accompanying measures in the reform package, and in the consumer bill for food.

The upstream and downstream losses would be the value added foregone by the reduction in the volume of inputs and output caused by the reforms. It is possible that the size of the value added margins per unit of output and input could also be affected - either increased because of loss of some scale economies or decreased because of increased competitive pressure in post-reform markets, but no estimate is attempted of such imponderables. The losses are calculated simply as 20% of the change in volumes of inputs and outputs excluding cereals, all valued at 1990 prices. The reduction in cereal production is deemed to give rise to no loss in downstream value added as it would be replaced by feed imports to the extent needed and such imports would have a similar downstream effect. The resulting reduction in value added amounts to £17 million.

The national benefit from the Accompanying Measures is impossible to quantify directly since the precise nature of these measures has yet to be detailed and even with such detail their up-take could not be guaged. The Department states that "these programmes could give rise to payments of £175 million from the EC over a five year period or on average £35 million per year". Against this there would presumably be some loss of income involved in complying with these measures, so on balance there might be little net gain to the economy.

The Department makes no reference to the benefit to Irish consumers flowing from the reform package. As argued earlier, the historical record suggests that reduced farm output prices are in general transmitted through the post-farm sectors to consumers. But even if the transmission is not perfect any leakage would accrue as a gain to the post-farm sectors, so the impact on national welfare would be the same. While three-quarters of the consumer benefit would accrue to non-Irish consumers in receipt of cheaper Irish agricultural exports, Irish consumers would nevertheless experience a significant gain. That can be measured as the value of the price reductions at farm gate of such output as is consumed in Ireland. The proportions of output consumed in Ireland were taken as 25% for milk, 10% for beef, 75% for pigs, 90% for poultry and eggs, 30% for sheep and 10% for wheat. Applying the appropriate price reductions to these proportions and adding similar price savings on imported meat preparations and dairy products provides an estimate of the total savings to Irish consumers of £102 million. Of course some of these consumers - about 15% - are farmers and their families, so £16 million of the £102 million savings accrues to farmers to enhance their modest gain of £3 million in aggregate farm income.

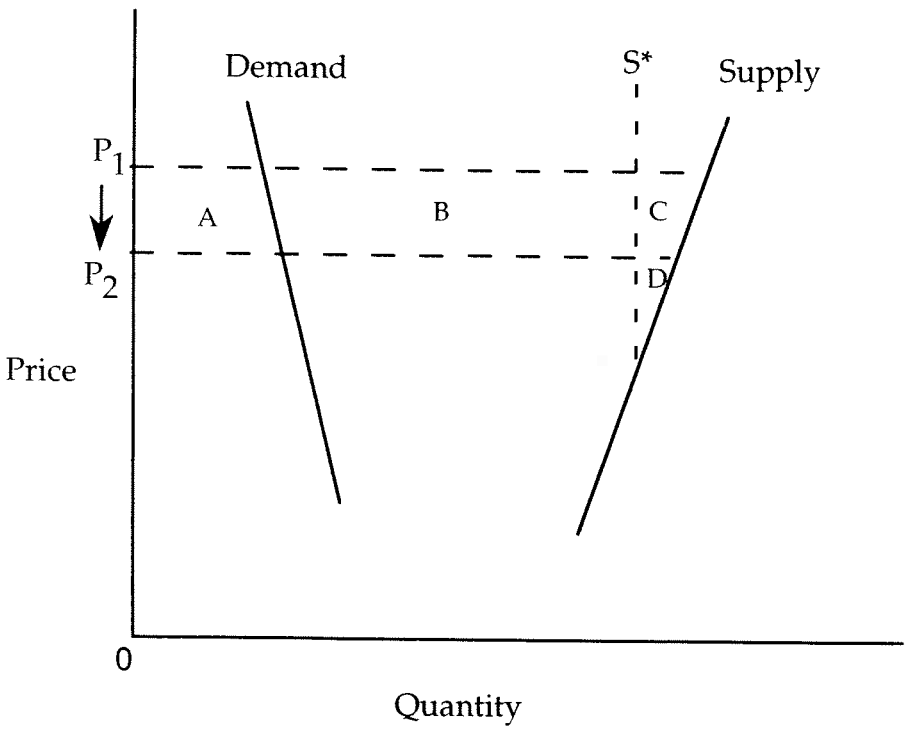
The total direct impact of the reform proposals on national welfare can now be calculated as the sum of all the foregoing gains and losses. The result is shown in

Table 11 as a net gain of £88 million. This is considered to be a very conservative estimate of gain since it would be enhanced by further gains which have not been quantified, in particular a more positive market price response to the reforms, a greater reduction in input prices, an increase rather than no change in the volume of beef production and some net benefit from the Accompanying Measures.

The outcome is illustrated in Figure 7 which is the same diagram as Figure 6 with the addition of supply control at level S*. The S* represents the supply control element in the reform proposals. The total loss to farmers as a result of price reductions is indicated by the sum of areas A + B + C and the extra loss due to reduced quotas is area D. This is estimated by the Department at £371 million, the income loss to producers in the absence of compensation and by the author at £305 million. The £277 million compensation to be paid to producers in the Department's calculations amounts to 75% of their loss and in the author's calculations it is 101% of total loss (£308 million as a percentage of £305 million). The upstream/downstream loss of £17 million is not depicted in the diagram. The gain to Irish consumers, area A, is estimated by the author at £102 million.

FIGURE 7

Income Transfers Resulting from Price Reduction and Supply Control in Ireland



The net producer and national outcomes are the sum of the relevant gains and losses in £ million as follows:

		Department	*Author*
Producer loss before compensation:	(A + B + C + D)	- £ 371	- £305
Compensation:	(75% of A + B + C +D)	+ £ 277	—
	(101% of A + B + C +D)	—	+ £308
Upstream/downstream value added		—	17
Irish consumers' gain: A		—	+ 102
Net national effect		—	+ £ 88
Net producer effect after compensation		- £ 94	+ £ 3

Feasible Alternatives

The foregoing analysis compares the impact of the reform proposals with the *status quo* which is defined as the 1990 situation. From the EC producer point of view perhaps the preferred option would be to continue to increase FEOGA to cope with ever-growing surpluses. This is not a feasible option given the budgetary discipline that is now in place, as explained in Chapter 3. Therefore, almost everyone agrees that some further action must be taken to curtail surpluses.

From the Irish point of view an alternative attractive option would be to shift the burden of reform on to Third Countries by further restricting their access to EC markets or on to other Member States by seeking and getting exemption from the proposals for Ireland. Arguments in favour of these have always been part of the Irish negotiation stance in relation to CAP reform and are a prominent part of the farming organisations' case in the current negotiations (Farm and Co-Operative Organisations, 1991). Farmers are understandably aggrieved at the import into the EC of sizeable quantities of products which are already produced in surplus within the EC. New Zealand butter and lamb, cereal substitutes and beef are the main examples. However, Ireland to date has had only very limited success in persuading the Council of Ministers to curtail or reduce these import flows, and given the pressures in the GATT and from Eastern Europe for increasing access to the EC, the prospects of success are even dimmer in the future.

Similarly Ireland has sought derogation or exemption from adverse policy changes on a variety of grounds, such as its high level of dependence on agriculture, the under-developed state of its agriculture, the extensive nature of its agriculture, its position as an *Objective 1* region in qualifying for the Structural Fund, the

commitment of the EC to economic and social cohesion etc. The most outstanding example of this was the stance against the milk superlevy in 1983 when Ireland's opening negotiation position was total exemption. After a most vigorous political campaign Ireland emerged with a concession equivalent to about 10% of the milk quota - while other Member States received a quota of only 95% of their current production, Ireland was allowed to expand its production by about 5%. There is no reason to believe that derogations or exemptions, desirable and deserving though they may be, can be won any easier to-day.

If reform is unavoidable there appears to be little option for Ireland but to participate in it. The relevant analysis then of the current Commission's proposals is not by way of comparison with the *status quo* but rather by comparison with feasible alternative reforms. Any such alternative must of necessity be worse for farmers than the *status quo* and therefore would make the present proposals look more attractive, or less unattractive, than when compared with the *status quo*.

An intensification of past reforms without compensation, as discussed in Chapter 2, would be one such feasible alternative. These reforms have consisted of reducing real prices as shown in Figure 1 and increasing direct supply control. In Ireland the annual decline since 1977 in the net price effect on value added was 5.5%, but this was partly offset by an increase of 2.3% per annum in the volume of gross value added at market prices. Projecting these trends forward for three years and assuming an annual inflation rate of 3% would entail a loss in real aggregate farm income of £179 million which would be greater than the reduction of £120 million under the current proposals. Furthermore, the gain to consumers would be only £53 million compared with a £102 million gain from the present proposals.

CHAPTER 6

PRICE REDUCTION *VERSUS* SUPPLY CONTROL

As stated before there are two basic policy instruments to curtail surplus production, price reduction and supply control. The current reform proposals are a mixture of these two approaches. The blend of the two can be varied, and in particular it has been proposed to increase the emphasis on direct supply control and reduce the extent of price reduction (Farm and Co-Operative Organisations, 1991; O'Keefe, 1991). An appraisal of the relative merits of the two options is therefore called for.

Supply Control Preferable in Absence of Compensation

To determine equivalent amounts of these two very different sets of action one plausible approach in the context of the CAP is to equate their budgetary impact as done by Sheehy (1982-83) in his analysis of the superlevy proposal. That analysis showed that, at least in the short to medium term, the supply control approach was much less damaging to farmers and the national economy than the price reductions that would have been necessary to achieve the same budgetary outcome. This derives from an elementary economic principle that if price elasticity of demand is low - and for agricultural products it is very low - then retarding expansion will prevent prices from falling and thereby maintain income. For example, assuming a plausible price elasticity of aggregate demand of - .2, a 1% increase in the quantity put on the market, *ceteris paribus*, would depress prices by 5% and incomes by a much greater amount. Clearly, there is a large pay-off for producers and for an exporting county, from preventing such expansion by supply control.

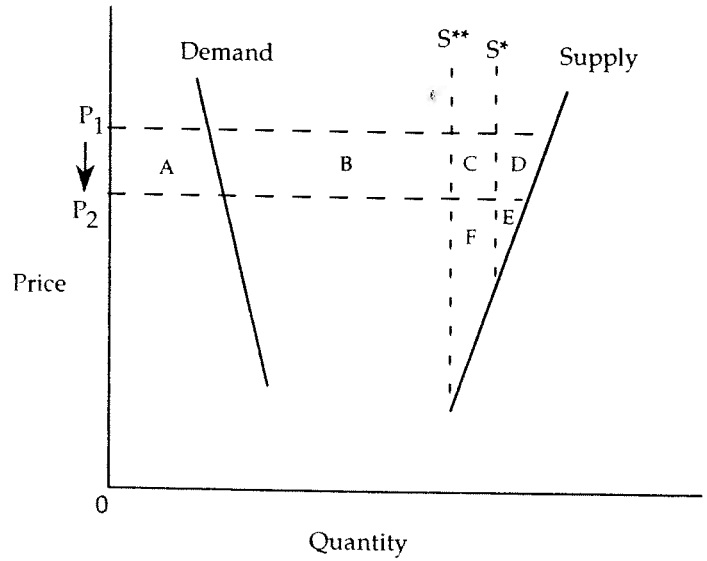
The difference between the two alternatives can be illustrated by reference to Figure 8 where S** represents the more severe supply control which would have to be imposed if prices were not reduced. The results are summarised as follows:

	Price Reduction with some Supply Control (the reform package)	*Supply Control with no Price Reduction*
Producer loss	- (A + B + C + D +E)	- (C + D + E + F)
Irish consumers' gain	+ A	0
Net national effect	- (B + C + D +E)	- (C + D + E + F)

For producers the difference in outcome is the difference between area A + B and area F; so long as the former exceeds the latter producers will be less severely affected the more emphasis is placed on supply control. For consumers the result is even clearer: they gain to the extent of area A under a price approach, but they gain nothing from a supply control approach. The difference in the net national outcome is measured by the difference between areas B and F. Clearly the size of area B is proportional to the amount of output which is exported which in the Irish situation is very high at around 75%.

FIGURE 8

Income Transfers Resulting from Price Reduction and Two Levels of Supply Control



The advantage of supply control compared with price reduction to both producers and the national welfare is more or less cancelled when comprehensive compensation for price reduction is on offer, as in the present reform proposals. In these circumstances, more emphasis on supply control and less emphasis on price reduction would not be advantageous to producers and the nation. However, if the compensation were to be only temporary, or if in the future no such compensation were to be on offer, then the advantages of supply control would again prevail.

Duration of Compensation

There is a concern among farmers that the compensation payments might not be sustained over time. They would be more visible to the public than equivalent transfers through higher prices, and as a consequence they would be more vulnerable to criticism. This would be the case especially where the payments per farmer would be high as for large cereal farmers.

The Commission argues that the compensation will continue as it is part of an exercise to alter the *method* of farm income support but not its *level*. An alternative interpretation of such payments, much favoured by agricultural economists, would link them to trade liberalisation and make them transitional rather than permanent. (See Tangermann, 1992, for example). The payments would be to facilitate adjustment and should be phased out over time as the resources in agriculture are either retired or moved to alternative employment. As seen in Chapter 2 the income losses arising from lower prices tend to be offset over time by increasing productivity. Indeed, all of the price reduction between 1977 and 1991 was offset in

the EC-9 and in Ireland by productivity gains: real Family Farm Income per family worker was approximately the same in 1991 as in 1977 despite very large reductions in prices as may be seen in Figure 4. The form of compensation which the Swedish Government has decided upon is a transitional one in line with this rationale. It is reported that some member states, including the UK and Denmark, also favour this formula. Given the age structure and relative immobility of farmers a good case can be made for continuing the compensation for the lifetime of the present generation of farmers but not for their successors (Van Riemsdijk, 1973).

On the other hand, alternative employment might not be available for people leaving agriculture. In that situation the loss of employment from trade liberalisation is a permanent one which calls for either permanent compensation or alternative employment creating policies as under the Structural and Cohesion Funds. Furthermore, in so far as the payments are for the provision of *public goods* , such as maintenance of rural population, rural environment and rural landscape, the payment should also be permanent, or at least it should continue for as long as society is willing to pay for such goods.

In the event of the payments being permanent some basis for adjusting them over time is desired. For example, the payments could be adjusted in line with inflation or in line with social welfare payments to the long-term unemployed. In the early days of the CAP the objective with regard to income was to maintain relativity between farming incomes and non-farming incomes, and such a relativity concept could conceivably be applied to the sum of the compensation payments and current farming income. However, this relativity objective was abandoned in the mid-1970s because of growing surpluses. Price and income policy then became a matter of political expediency, a fate which will also befall the compensatory payments if clearer guidelines are not agreed.

In the final analysis the continuation and extent of compensation is a political decision as indeed is the future of any other policy instrument, such as the maintenance of high prices behind supply control. Intensification of supply control with the maintenance of high prices would also be vulnerable. While the price element of this alternative might remain relatively invisible, the supply control element would become more and more visible. A growing area of land under set-aside in the EC would be provocative, and the increasing payment of farmers for idling more and more resources would almost certainly attract growing criticism. Similarly the slaughter of calves on a large scale to maintain balance in the beef market could be controversial.

Compensation and the GATT

Given the importance for the global economy of a satisfactory GATT agreement, the compatibility of any reform proposals with that objective is a very important consideration. Any agreement will require a reduction in internal support, in import barriers and in export subsidies along the lines of the current GATT proposals outlined in Chapter 4. Such reduction in the absence of compensation would not be

politically acceptable in the EC at this time, so a GATT agreement on these terms would not be attainable. The Commission aims to resolve this dilemma by the payment of compensation. The Commission is also insisting that the compensation should be exempt from GATT control. The US is resisting this demand on the grounds that the compensation payments would be too closely linked to production and would therefore be trade distorting. Given the Commission's interpretation of compensation as payment for changing the *method* of farm income support but not its *level*, there is no justification for decoupling the payments from production. However, when the payments are considered in the context of trade liberalisation then decoupling is essential.

There is, of course, some degree of decoupling in the proposed payments in so far as they are limited to base period areas and numbers and to average regional yields. Production up to those limits would qualify for payments but production beyond those limits would take place, if at all, at the reduced post-reform price levels and without the benefit of compensation.

The decoupling could be greatly strengthened if the payments were to be made on base period areas or numbers without requiring farmers to actually plant these areas or retain these numbers. High cost producers would presumably then opt to reduce their base period production at the post-reform reduced price level, while efficient producers would still find it profitable to maintain production. The consequent cut back in production should be welcomed by the EC as a contribution to reducing surpluses because these have a low or even negative marginal value at EC level. From the Irish perspective, however, such marginal production still has a high national value, as the cost of disposing of it is funded largely by other member states. Ireland, therefore, would lose from such a change.

If some such formula can be agreed it will greatly strengthen the case for the Commission's reforms. Indeed, the proposals would have proven to be a unique opportunity to put such compensation in place before the EC became a party to global trade liberalisation under the GATT.

Supply Control in a Trade Liberalising World

In the longer term the advantages of supply control over reduced prices are less certain than in the short and medium term. Supply control frustrates technological progress - the more rigid the supply control the greater the frustration. At farm level the scope for such progress varies enormously from farm to farm as highlighted in Chapter 2. Those farms with the greatest scope would be most disadvantaged by rigid supply control. Similarly, if a country such as Ireland had more capacity for progress than its competitors it too would be relatively more retarded. There is some evidence to suggest that Ireland has comparitive advantage over many other countries, especially in dairying (Boyle, 1992), but whether this is of sufficient scale to offset the short and medium term advantages of supply control is impossible to determine. However, supply control will become increasingly incompatible with the requirements of a global economy moving towards free trade.

An essential requirement for an effective supply control policy is the control of imports into the EC. If imports were allowed to increase, then supply control would have to be intensified to keep surpluses within acceptable limits. While EC farmers continually call for more vigorous protection at the frontiers, the record is of increasing imports over time. Looking to the future the pressure for access will be greater through the GATT process and from Eastern European countries. Therefore, it will be even more difficult to operate a *fortress Europe* approach in support of supply control measures.

In addition to this internal conflict between supply control and trade liberalisation, there will also be an external conflict on export markets. Under a supply control approach, control would have to meet internal budget constraints and external GATT conditions. Farmers would find themselves more and more restricted and with increasing quantities of surplus resources, especially land. Commercial farmers in the EC would thus be isolating themselves from international trading opportunities arising from trade liberalisation, while farmers in other countries without supply controls would be free to exploit such markets as would arise.

In the cereal sector this would be avoided under the reform proposals because as prices are lowered towards world market levels set-aside would become increasingly irrelevant. In other sectors, and especially in dairying, it is already an issue. As the EC reduces its milk production under the superlevy, other countries who do not operate quotas will be reducing their milk price. Such price reductions have relatively little impact on production as technological progress continues to boost it. On the other hand, they should encourage expansion in demand both by reclaiming some ground lost to substitutes and by fostering new markets in developing countries. The EC would thus be conceding world markets to its competitors and depriving its potentially competitive farmers and processors in Northern Europe of the opportunity to supply those markets without subsidies. If those markets firm up to the extent predicted by most econometric studies exclusion from them would be all the more serious.

To avoid this outcome a mechanism is required to transform the present superlevy system into one that allows efficient producers to expand at world market prices. One such approach would be to change the CAP totally to a deficiency payment system along the lines of the proposed cereal reform. If the present level of support were to be maintained under a full deficiency payment system it would transfer an enormous burden from consumers who have been relatively willing to bear it to taxpayers who would be very unwilling to do so, especially in the EC.

A modification of this full deficiency payment approach has been proposed which would limit the deficiency payments at farm level to a proportion of total production equivalent to what would be produced under free trade, which has been estimated to be about 80% of actual production in 1986; this has been titled the Production Entitlement Guarantee or PEG Option (Harvey, 1989). Farmers would be free to decide how much to produce above the supported quantity, but such production would take place at world prices. New entrants to farming would have to either purchase or lease PEGs or else to produce at world prices without PEG payments.

A less radical approach would be to introduce a tiered quota system as in the sugar market regulation. Under this system production within a basic quota would qualify for the full support price, while supplementary production would be sold at a diminishing price, ultimately the world price. The administration of tiered quotas requires the separation of the different quota quantities in the market place, and while this is possible for sugar it would be much more difficult for milk. Alternatively, an *export levy* could be used to convert the present superlevy arrangement whereby the full price extends to all quota production into one with full price for a proportion of the present quota but a lower price for the remaining production. In effect the present quota would be reduced by a percentage, say 5% to start, leaving the quota at 95% of its present level. Production in excess of the reduced quota would be regulated only by an export levy which would be uniform across the EC and which would be adjusted over time in accordance with GATT requirements towards a level at which production would be at world price levels. The level of protection for the quota production would of course be declining over time as part of a GATT agreement.

Milk bearing the export levy would be produced by the most efficient EC dairy farmers who would still find it profitable, while inefficient producers would find it penal. Efficient producers could therefore expand while the inefficient would be forced to contract in line with the shrinking quota. The main merit of the export levy would be the freeing up of competitive producers in efficient regions such as Ireland and on efficient farms anywhere in the EC. Presumably countries and regions expecting to lose milk production, such as Southern European countries, would either resist the proposal or would seek compensation for their loss of present quota. The arguments against them and in favour of the proposal would be the Single Market dimension, its compatibility with agricultural development in the anticipated GATT framework, and the EC interest in allowing its efficient farmers to compete on international markets.

Other contracting parties in the GATT would also be affected and presumably would resist the export levy proposal. They may be concerned about the impact on world markets of extra EC production even though that production would be unsubsidised. The continuation of the heavily protected quota production might also be a provocation as it would be seen as cross-subsidising exports. However, the volume of such exports and the amount of subsidy are likely to be controlled by the GATT.

The export levy would generate revenue equal to the unit levy rate by the quantity produced above quota. This could be spent in various ways, e.g. to fund a long term marketing development strategy, to make decoupled payments to small producers, or to part fund the remaining export refunds, all within an agreed GATT framework.

Conclusion

The Commission argues that their proposals are designed to achieve seven objectives as follows:

(i) to maintain sufficient numbers in farming to preserve the rural landscape;

(ii) to discourage intensive production in the interest of preserving a clean environment;

(iii) to control production;

(iv) to meet the EC's international obligations in trade;

(v) to guarantee the competitiveness and efficiency of Community agriculture;

(vi) to achieve a better distribution of the available support among farmers; and

(vii) to promote non-food land uses (EC Commission, 1991a, pp. 9 - 12).

With respect to these objectives a pure supply control approach would be superior only for objective (iii); the reform proposals would be more likely to achieve objectives (i), (ii), (iv), and (vi); and there would appear to be little difference between the two in relation to objectives (v) and (vii).

The reform proposals are therefore a relatively attractive package given that radical action has to be taken to curtail EC surplus production and to reach agreement in the GATT negotiations. The comprehensive compensation involved is sufficient overall to prevent any reduction in aggregate nominal farm income in Ireland though aggregate real income would fall. Furthermore, the compensation offer has been improved by the dropping of the stocking rate proposals which would have discriminated against Disadvantaged Areas. Consumers would gain significantly from cheaper food. At the same time the prospects of a GATT agreement are enhanced, though this will be confirmed only if the differences between the EC and the US on compensation and other outstanding issues can be satisfactorily resolved. Nobody has identified a feasible alternative reform package with as much to offer.

CHAPTER 7

PROSPECTS

The prospects for Irish farming in the immediate years ahead depend on the outcomes of the reform proposals and of the GATT negotiations and on the overall market situation which will prevail.

A diluted version of the CAP reform proposals is likely to be agreed. This will involve less severe price reductions than those proposed, especially in the cereal sector, but compensation will be reduced accordingly. The supply control content of the proposals is likely to be increased by limiting the beef payments to a base herd as proposed for sheepmeat.

The outcome of the GATT negotiations is much more difficult to anticipate. The gap between the two main protagonists, the EC and the US, appears to be bridgeable by adjusting the magnitude of the changes proposed and perhaps some modification of the hectarage/headage payments in the EC towards further decoupling. Despite the fears among farmers of such an agreement, there is not much joy in the alternative of a break-down in the negotiations. Pressure will continue for a more rational global trading system, while trade distorting activities may lead to recurring conflicts.

Too much attention has been given to the adverse consequences of a GATT agreement and too little to its benefits. Even confining the focus to agriculture - and the GATT negotiations are about much more than agriculture - agreement will require all parties to make difficult adjustments and share in the stress of restoring a more orderly international market place. There would be opportunities in this market place as well as threats. In particular, world prices should firm up as dumping is curtailed, and access to other markets would be available to efficient EC producers in return for the access to EC markets which would have to be conceded to Third Countries.

Whatever the outcome of the current negotiations within the EC and under the GATT, the global market outlook for agricultural produce points to a continuation of price and income pressure, as supply expansion continues to outpace demand growth. Taxpayers have been willing to fund the disposal of surpluses up to a point, but the limit on such funding has forced governments everywhere to modify their agricultural policies. If a GATT agreement is reached it will add an external dimension to the internal pressures for reform which have operated heretofore. There is a convincing argument articulated in Chapter 4 that the world is inexorably moving towards agricultural trade liberalisation; it is the pace of this movement, not its direction, which is uncertain. An agreement in the current round of GATT negotiations would probably be the first of many. In addition, the pace of liberalisation is likely to increase in the years ahead, though full free trade would appear to be a distant prospect, if indeed it is ever reached.

Individual farmers will continue to respond to these evolving pressures in one of the three ways described in Chapters 1 and 2, namely:

(i) increased farm productivity;

(ii) increased off-farm employment;

(iii) increased dependency in farming on transfer payments either in the form of general social welfare or "green" welfare.

The capacity of farmers to increase their farm productivity has been highlighted in Chapter 2, though admittedly this refers to only a minority of farmers. Productivity gains in the future will be constrained by the proposed extension of supply control to all major enterprises. The severity of the constraint will depend on the rigidity of the supply control implemented, but the present inclination in the EC is towards very rigid control. Under such circumstances productivity must be increased mainly by reducing input use rather than by increasing output. The long-run direction of commercial farming in Ireland is towards the New Zealand model of large-scale, low-cost production. This will require some loosening of supply control over time as argued in Chapter 6.

The remarkable extent of off-farm income in Irish farm households and its increase in recent decades has been quantified in Chapter 2. More farm households have increased their income in this way over the past decade than by increasing farm productivity. Little is known of the dynamics of this development, so it is difficult to project its future. Clearly it will depend on the overall employment scene as well as the regional distribution of employment within the country. Solving the national employment problem would make a greater contribution to agricultural adjustment than anything that can be done within farming itself. However, the enormity of that challenge and the remoteness of its solution means that every option must be exploited to maintain and improve the incomes of people in farming.

In this regard the many initiatives of the EC are to be welcomed. The promotion of land-based and non-land-based enterprises under a revitalised rural development policy is perhaps limited in its potential, but nevertheless it is important for its contribution. (See P. Commins, 1992, elsewhere in this report).

The willingness of society to pay farmers for rural public goods might be doubted, but a valuable start has been made in the comprehensive compensation and the other accompanying measures in the current CAP reform proposals. While these proposals have been widely criticised, the real danger is that they will prove to be once-off. Reform of agricultural policy will continue long beyond the present proposals, as emphasised in Chapter 1, but compensation for future reforms may be less generous, if any at all will be on offer.

REFERENCES

Agra-Europe, (1988), "Getting on with GATT", p/1, August 5.

Australian Bureau of Agricultural and Resource Economics, (1988), *Japanese Agricultural Policies*, Policy Monograph No. 3, Canberra.

Avery, D. T., (1991), *Global Food Progress 1991*, Hudson Institute, Indianapolis, USA.

Boyle, G., (1992), *National Responses to the CAP Reform Proposals*, elsewhere in this Report.

Brown, L., (1990), *State of the World 1990*, the Worldwatch Institute, Washington DC.

Callan, T. *et al*, (1989), *Poverty, Income and Welfare in Ireland*, General Research Series, Paper No. 146, ESRI, Dublin.

Commins, P., (1992), *Rural Development: Trends and Issues*, elsewhere in this Report.

Commission of the European Communities, (1988), *The Future of Rural Society*, COM (88) 371, Brussels.

Commission of the European Communities, (1991a), *The Development and Future of the CAP*, COM (91) 100, Brussels.

Commission of the European Communities, (1991b), *The Development and Future of the CAP*, COM (91) 258, Brussels.

Commision of the European Communities, (1992), *From the Single Act to Maastricht and Beyond: the Means to Match Our Ambitions*, COM (92) 2000, Brussels.

Department of Agriculture and Food, (1991), *Quantification of Effect of CAP Reform Proposals*, Unpublished.

Farm and Cooperative Organisations Response to the CAP Reform Proposals, (1991), Irish Farm Centre, Dublin.

Fitzgerald, J. and D. O'Connor, (1991), "Economic Consequences of CAP Reform" in J. Bradley *et al*, *Medium Term Review: 1991 - 1996*, ESRI, Dublin.

Harvey, D., (1989), *The GATT and Agriculture: The Production Entitlement Guarantee (PEG) Option*, University of Newcastle Upon Tyne, Discussion Paper, DP1/89.

Harvey, D. and J. Hall, (1989), *PSEs, Producer Benefits and Transfer Efficiency of the CAP and Alternatives*, University of Newcastle Upon Tyne, DP3/89

Heimann, E., (1974), *History of Economic Doctrines*, Oxford University Press.

Larsen, A., (1992), *Impact of Agricultural Policy Reform*, elsewhere in this Report.

Leavy, A. and J. Heavey, (1991), *Interim Analysis of Proposed CAP Reforms*, Information Update Series No 45, Teagasc, Dublin.

Lucey, C., (1991), *Irish Farmers' Journal*, December 14. p. 16.

Mellor, J.W., (1990), "Agriculture on the Road to Industrialisation," in *Agricultural Development in the Third World* , Second Edition, eds. C.K. Eicher and J. M. Staatz. pp. 77 - 88. John Hopkins, University Press.

Milk Marketing Board, (1990), *EEC Dairy Facts & Figures 1990*, Thames Ditton, Surrey.

Moss, J. E. et al, (1991), *Study of Farm Incomes in Northern Ireland and in the Republic of Ireland*, Co-operation North, Dublin.

OECD, (1991), *Agricultural Policies, Markets and Trends - Monitoring and Outlook 1991*, Paris.

O'Keefe, P., (1991), "Major Changes in CAP Inevitable", *Irish Farmers' Journal*, September 7. pp. 24 - 25.

Peterson, W., (1991), "World Hunger - a Solution with Food Stamps", *Choices*, Second Quarter 1991.

Perlitz, M., (1989), "The Marketing Implications of the Ageing European Population", *European Business Journal*, Vol. 1, Issue 1. pp. 26 - 32.

Sen, A., (1986), "Food, Economics and Entitlements", *Lloyds Bank Review*, April 1986. pp. 1-20.

Sheehy, S., (1982-83), "Co-responsibility and the Future of Irish Agriculture", *Journal of the Statistical and Social Inquiry Society of Ireland*, Dublin. pp. 1-27.

Sheehy, S., (1989), *Towards Free Trade in Agriculture*, Dr. Henry Kennedy Memorial Lecture 1989, ICOS, Dublin.

Swedish Ministry of Agriculture, (1991), *The Agricultural Reform in Sweden - A Food Policy for the 1990's*, 10333 Stockholm.

Tangermann, S. (1992), "Reforming the CAP? In for a Penny, in for a Pound", *Institute of Economic Affairs*, London, Paper No. 28.

US Office of Technology Assessment, (1985), *Technology, Public Policy and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill*, Washington DC.

Whitney Griswold, A., (1952), *Farming and Democracy*, Yale University Press.

Van Riemsdijk, J.F., (1973), "A System of Direct Compensation Payments to Farmers as a Means of Reconciling Short-run to Long-run Interests", *European Review of Agricultural Economics*, Vol. 1 - 2. pp 161 - 189.

Walsh, B., (1981), *Ireland in the European Monetary System: The Effects of a Change in Exchange Rate Regime*, paper presented to Colloquium in Florence, March 12-14, 1981.

NATIONAL RESPONSES TO THE CAP REFORM PROPOSALS

Position Paper Prepared for the National Economic and Social Council

by

Dr. Gerry Boyle[1]

DEPT. OF ECONOMICS, ST. PATRICK'S COLLEGE MAYNOOTH

---

1. I would like to acknowledge the excellent research assistance given by Ms. Mary Ryan in the course of preparing this paper. I would also like to acknowledge the helpful comments of Council members, the Secretariat and Professor Seamus Sheehy on the earlier draft. None of the aforementioned are implicated in any of the errors or views which remain in the present draft.

NATIONAL RESPONSES TO THE CAP REFORM PROPOSALS

INTRODUCTION

Reactions to the CAP Reform proposals (see EC Commission) depends very much on what one's views are of the role of the agricultural sector in the national economy. The perspective of this paper can be baldly stated at the outset. We consider that agriculture's primary role is to enhance wealth creation in the economy as a whole. This view strongly influences our views on the appropriate public policy stance towards the sector. Our principal focus is the primary sector but we will allude briefly to the food processing industries.

How is agriculture's contribution towards national wealth creation to be maximized? We believe there are two main mechanisms. First, producers need to operate in an appropriate economic environment. Producers must receive the correct market signals in terms of relative prices[2]. The CAP dictates this environment for Irish agriculture and must therefore be assessed in this light. At the outset it is worth stating our view that while the broad outlines of the CAP system is beyond the influence of the domestic authorities this ought not to proscribe a proactive stance towards proposed reform measures emanating from the Commission.

While a benign economic environment is a necessary requirement for the enhancement of national wealth creation it is not sufficient. So the second mechanism is the establishment of an appropriate agricultural infrastructure (for example, R&D, education and training, land mobility, access to credit etc.). The latter policies do not feature prominently within the CAP and have traditionally been perceived as under the substantial control of domestic authorities.

The concern of this paper is on the first mechanism through which wealth creation may be maximized.[3]

THE CONTEXT OF THE REFORMS

The necessity for the ongoing reform of the CAP and the prominence assigned to adjustment in agricultural policies in the current Uruguay round of the GATT negotiations stems from the fundamental distortions caused by government intervention in the sector throughout the developed world. These distortions are not transitory in their impact and consequently nothing short of a root and branch

2 Imbalances also exist in the macroeconomic environment which distort signals such as high real interest rates and a debt overhang. In the recent past it is arguable that there have been occasions when these factors were of much greater consequence for the sector than the CAP of itself.

3 In the course of preparing this paper for the Council we also prepared a paper on the role of State investment in R&D in the context of developing sufficient conditions for maximizing agriculture's contribution to the national economy (see Boyle and Ryan). The remaining elements of the agricultural infrastructure identified above are properly the subject of separate papers in their own right.

overhaul of the nature of support will yield permanent solutions. The acceptance of this perspective has profound implications for national responses to the reform measures since it ought to force countries like Ireland, with a high dependence on agriculture, to develop positions which take a long view of the nature of agricultural support. In effect it ought to force such countries to contemplate a scenario where agricultural support policies, as traditionally perceived, will no longer exist and thus to adopt policy stances in the light of this highly probable eventuality. While the territory is relatively familiar it is worth reviewing the nature of the fundamental distortions caused by government intervention which render comprehensive reform unavoidable.

Market Price Distortions

Government intervention in the sector drives a wedge between the prices received by producers or paid by consumers and the price which applies in the absence of intervention - the competitive or "world" price. These incorrect price signals distort production and consumption and undermine trade based on comparative advantage. A summary index of the extent of price distortion is the Nominal Assistance Coefficient or NAC (OECD, 1991). We will focus here on the producer NAC which is defined as the ratio of the distorted price to the "world" price. A ratio of unity implies no distortion while values in excess of unity imply corresponding degrees of distortion. In Table 1 we exhibit producer NACs for selected commodities and OECD regions which obtained in 1990.[4]

TABLE 1

Producer Nominal Assistance Coefficients (NACs) 1990

	Wheat	*Milk*	*Beef & Veal*	*Sheepmeat*
Australia	1.17	1.42	1.09	1.09
Canada	1.66	3.16	1.45	NR
EC	1.77	3.00	2.07	3.61
Japan	7.63	5.01	2.07	NR
New Zealand	1.10	1.03	1.03	1.04
US	1.70	2.38	1.40	1.08
OECD	1.80	2.91	1.70	2.60

Source : *Agricultural Policies, Markets and Trade : Monitoring and Outlook 1991*, OECD, Paris.

NR: Not relevant.

4 The "world" market is very much a residual market and consequently the price is subject to a good deal of inter-year variation. The data in the table are to be interpreted as indicative of the extent of protection conferred by agricultural price support policies in selected regions and on certain products.

With the notable exception of New Zealand which abolished all forms of sectoral protection in 1984 - and to a lesser extent Australia - all the remaining trading blocks practice significant market support measures which has lead to price distortion on a grand scale. In the OECD area as a whole we see that wheat prices are nearly twice the "world" market level; milk is nearly three times; beef and veal nearly the same as wheat and sheepmeat in excess of two and a half times competitive prices. Japan is seen to be a severe outlier in wheat and milk where prices are respectively nearly eight and five times world levels! The EC producer price wedges are well above the OECD average for milk, beef and veal and sheepmeat.

Chronic Supply/Demand Imbalances

Against a background of market price distortion of the scale indicated above stretching back over several years, the rational responses of producers and consumers has lead to a problem of chronic surpluses. These surpluses in turn have generated budgetary problems for the support agencies and have heightened trade tensions as increasingly large amounts of product appear on the world market than would be the case in the absence of the support regimes. These problems show no sign of abating in the medium term. Table 2 presents OECD estimates of present and prospective supply/demand balances for selected commodities.

TABLE 2

Supply/Demand Imbalances in the OECD Area

	Wheat m. tonnes	*Milk '000 tonnes milkfat*	*Beef & Veal '000 tonnes*	*Sheepmeat '000 tonnes*
1990	99.1	941	252	222
1995	96.9	929	979	306

Source : OECD (ibid).

Chronic surpluses are expected to remain a feature of agricultural markets well up to the new century. Problems are likely to be acute in the red meat sectors where beef and veal imbalances are expected to grow nearly fourfold.

The transition of the Eastern European and Soviet Union economies to free market systems is apt to add to the fundamental market imbalances, especially in the EC, and thus threaten in a powerful way the network of support and market distortion. The USSR is likely to continue to be a food importer for the foreseeable future. Fundamental and painful reforms will be required in relation to the land tenure system, producer and consumer prices. The potential is there for product prices to at least double (OECD, ibid). In time this will result in substantially increased levels of production.

The picture in the Eastern European countries is different. Despite there being a good deal more to be done in terms of upgrading the agricultural infrastructure - especially

in the area of land reform - in countries like Poland, Hungary and Czechoslovakia, reforms are further advanced than in the Soviet Union. The potential for increases in production is substantial. In the grains sector the OECD suggest that a 50% per cent expansion is feasible. In the near term imports could be depressed as the general economic reforms work their way through the economic system.

The Costs of Agricultural Support Policies

Support costs comprise two main elements : budgetary or taxpayer costs and consumer costs. The former are a highly visible cost and thus the focus of most political concern while consumer costs are non-transparent but of no less economic significance. OECD estimates are provided in Table 3.

TABLE 3

Taxpayer and Consumer Costs of Agricultural Support Policies, Billion US $, 1990

	Taxpayer costs[a]	*Consumer costs*	*Total costs*
Australia	0.3	0.4	0.7
Canada	4.7	3.6	8.3
EC-12	48.3	85.1	133.4
Japan	4.3	54.7	59.0
New Zealand	0	0.1	0.1
US	46.2	27.9	74.1
OECD	110.7	188.3	299.0

a: net of government revenues.

Source: OECD(ibid).

By any standards the costs involved are significant. As noted already countries like Australia and New Zealand have virtually zero support to the sector. These countries are the most vociferous in demanding fundamental reform through the GATT. It is no coincidence that these countries are prominent traders on world markets. They have a vested interest in promoting policies which permit comparative advantage to operate.

Apart from the scale of total support the division between taxpayer and consumer costs is of interest. In the total EC area consumer costs dominate. Such costs of course never prominently appear on the political agenda and it is thus difficult to fundamentally reform policies which rely on such instruments. The EC and Japan are prime culprits in this regard. The US exhibits the reverse pattern because of the dominance of deficiency payments which are less distorting of market signals.

The Equity and Efficiency of Transfers

The magnitude of the transfers from consumers and taxpayers outlined would perhaps generate much less concern if they achieved their stated objectives. A

primary objective of agricultural policies in most countries is to ameliorate the chronic low-farm income problem which besets many agricultural sectors. The efficiency of support mechanisms of the existing hue in achieving this objective can be questioned on two grounds.

First, only a fraction of every $ spent on agricultural support actually gets to farmers. Blandford, citing a study of Roningen and Dixit, suggests that only 40-45 cents of every $ of taxpayer and consumer transfers actually wends its way to farmers in the US and EC. The leakage comprises producer and consumer deadweight losses and the fact that a proportion of support in any given region is required to counteract the support policies of other regions. Blandford further suggests that the net receipts for every $ of gross cost is probably an underestimate since no account is taken of higher input, processing and storage costs as a result of the policies.

Second, the fraction of every $ which the sector receives in the main goes to producers who because of the scale of their activities are not deserving of support on any reasonable equity criteria. This outcome arises because with a price support policy the producer who produces the most gets the lion's share of the transfers. Blandford refers to a study of his using US data (Blandford, 1987) which found that "... the smallest farms in the United States (less than 100 thousand dollars in farm sales) which account for over 85 per cent of those eligible for direct payments received less than 33 per cent of those payments". Similar sentiments oft expressed recently by Mr Mac Sharry have yet to be contradicted.

DOMESTIC RESPONSES TO THE REFORM MEASURES

Ireland has been a net beneficiary of the CAP (Matthews). Thus the perfectly rational response of producers to the CAP price signals was consistent with the maximization of the wealth creation potential of the sector. The national response to the CAP from the period when we joined the Community and through the sequence of reform measures which have emerged over the years has been to seek a maximization of the transfers from the EC in the given circumstances. This is a highly sensible tactical but not a strategic response and especially not in the present circumstances. Optimal strategic domestic responses have to be influenced by the changed context within which the CAP operates.

The arguments set out above regarding the chronic nature of the problems created by agricultural support policies make an incontrovertible case for fundamental reform by which we mean the ultimate elimination of market-distorting support mechanisms.

It is against this background that a strategic national position must be formulated. A balance between the tactical and strategic responses is clearly needed. In this author's view too much energy has been absorbed in the former stance to the virtual neglect of the latter.

TACTICAL RESPONSES : MAXIMISING COMPENSATION

In this section the reform measures are assessed in terms of their impact on the farm and non-farm economy. This is achieved with the aid of a model of the farm sector (Boyle and O'Neill) which evaluates the impact on the farm economy. This model sets out the interrelationships between the various outputs produced by the "national farm" and the inputs consumed. It is particularly designed to model the effects of the milk quota. We then assess in a preliminary way the impact on the overall national economy.

The CAP Reform proposals are set out in Annex 1. Before considering the results of the model exercise it will be helpful to establish the static impact on the main enterprises affected: milk, beef, cereals and sheep production. This assessment simply involves applying assumed product and feed price falls to the base situation together with estimates of the effect of compensation. Thus no volume responses by way of production or input consumption are assumed.[5]

Static Effects on the Main "National Farm" Enterprises

Milk
The 3% reduction in the quota would reduce the value of milk output by about IR£28m. Compensation would probably amount to an annual payment of about IR£7m., or, about 21p/gl. payable over 10 years. As the annual loss by not producing milk is around 26p/gl. and given that the dairy cows no longer required for milk production will have some value, the level of compensation proposed seems reasonable. The 10% price reduction will cost around IR£100m. Compensation of IR£66 per cow is paid on the first 40 cows in herds satisfying a maximum stocking rate limit. A payment of about IR£60m. is estimated for the total sector. The abolition of the co-responsibility levy will probably save IR£11m. The reduction in feed prices on foot of the fall in cereals price could save IR£33m. if feed costs were to fall by say 20%.

Thus the national dairy sector could gain to the tune of about IR£4m. on a 1990 base.

Beef
On the strong assumption that the reduction in intervention prices of 15% will lead to an equivalent fall in producer prices, this would cost the sector IR£186m. The additional payments under the *male cattle* and *suckler cow* premia could yield compensation of around IR£117m. Reduced feed prices will also involve a gain but to a lesser degree than the milk sector because of the lower intensity of feed consumption. A saving of around IR£20m. is possible.

The net effect of the measures could result in an income fall of around IR£50m.

5 This section on the individual enterprise effects and the degree of compensatory payments likely benefits considerably from discussion with Mr. Brendan Kearney of Brendan Kearney & Associates, Agribusiness and Economic Consultants.

Sheep
The limitation placed on the number of ewes qualifying for the *ewe premium* payments could result in a loss of IR£7m. which will be offset to a degree by the fall in feed prices. On balance a loss of IR£4m. is likely.

Cereals
If producer prices were to fall by the full 35% then the value of cereal output would decline by around IR£90m. Compensation is tied to the requirement that cereal land be set aside and unused for cereal production. This will result in an additional income loss which will only be partially compensated. When we include the compensation for the price reduction, the net impact will be a marginal loss of about IR£7m.

For all the sectors combined, the net loss on the basis of this static analysis could amount to an income fall of about 3% or around IR£56m. on the 1990 outturn.

It is clear that the biggest net losers are likely to be beef producers. The problem is the inadequate rate of compensation rather than the stocking rate qualifications for compensatory payments. This is a somewhat ironic outcome for two reasons. First, in Ireland these are the very producers who suffer from a severe low income problem and who have benefited least from the price support system in the past. The spirit of the reform proposals would not appear likely to be realised in practice. Second, in the majority of beef producing farms in Ireland the production system in operation is extremely environment friendly. Again for this reason we would have expected this sector to be the least adversely affected.

In the dairy sector, while an overall net gain is possible, it is likely that the stocking rate qualification will exclude significant numbers of producers particularly in the Less Favoured Areas.

The sheep and cereal sectors will not be severely affected relative to a 1990 base.

The Overall Impact on the Farm Economy

Producers will be likely to respond to the change in relative product and input prices and the cut in the milk quota by adjusting the volume of supply and input demand. The extent of this response and the impact it generates on "national farm" income[6] can be gauged from simulating the farm income model mentioned earlier.

The model outcomes only reflect the assumed changes in determinantal variables which can be directly attributed to the Reform proposals. The only obvious exception to this restriction is our assumed fall in animal feed and pig and poultry prices - the latter are highly sensitive to changes in the price of cereals.

No account is taken of long-term productivity growth since we presume this effect would be present in the absence of the reforms. Neither do we allow for any dynamic

6 Income from Self Employment and Other Trading Income (Irish Statistical Bulletin, Central Statistics Office).

effects, such as: the possible decline in land prices which would be expected to follow in the wake of a major fall in farm output prices; a possible increase in world product prices as marginal producers cease production or additional reductions in the prices of the "red meats" which might result from a gain in competitiveness by the "white" meats.

The results of the model simulations are shown in Table 4.

TABLE 4

Model Estimates of the Impact of the CAP Reforms on the Irish Farm Economy

		% Change Relative to 1990	
		Price	*Volume*
Total outputs		**- 12**	**- 1**
	—Milk	- 10	(- 3)
	— Beef	- 15	- 2
Total inputs		**- 7**	**- 6**
	— Fertiliser	0	-13
	— Feed	- 20	2
Subsidies (nominal terms)		+ 47	
Farm Income (nominal terms)		**-1.6**	

The model results imply an overall income fall of under 2% which represents an income loss of around IR£27m. on the 1990 farm income outturn. Output is seen to fall only slightly despite the magnitude of the price adjustment. This outcome arises from the relatively low elasticity of supply in the beef and cereal sectors. Input consumption is seen to fall appreciably, especially fertilisers. This result stems from the relatively high elasticity of input demand employed within the model. Notwithstanding the savings in input use, farm incomes would be significantly reduced if it were not for the substantial increase in subsidies. On foot of the proposals we assume a subsidy figure of about IR£560m. compared with a base figure, adjusted for once-off payments, of about IR£300.

An aggregate income loss of the magnitude suggested here can hardly be reasonably construed as amounting to less than "full compensation" especially when we consider the outcome against any reasonable alternative such as even greater price cuts without commensurate compensation. However, there are some producers, especially in the beef sector, who, despite their already straitened circumstances, will be substantial net losers as a result of the measures. If the Reforms have as one of their main objectives the tilting of support towards the more disadvantaged producer, they have singularly failed to achieve this in the case of the Irish beef sector. Of course it is also true that producers who do not satisfy the various criteria for receipt of compensatory payments will be significant net losers.

The Impact on the Non-Farm Economy

The impact on the non-farm economy will operate through a number of channels: the reduction in prices which will feed through to food prices, economy inflation and wage setting. The fall in farm incomes will affect consumption and investment. The reduction in gross output will negatively affect food processing and the fall in input use will affect profits, output and employment, in the farm input-supply industries.

In terms of the effects on industries upstream and downstream of agriculture adverse consequences for food processing firms are likely since the throughput of raw materials will be reduced. This in turn will place a greater emphasis on rationalization to enlarge the competitive scale of these firms. Moreover firms will come under pressure to diversify. Job losses can be expected as a consequence of these adjustments. The downstream industries should also be affected. We have noted the likely reduction in input use which will adversely hit profits and employment in the affected industries.

Farm investment is likely to be subject to a relatively severe setback. Investment in buildings and machinery is driven by the evolution of real incomes, real interest rates and the all important confidence factor. Real interest rates are at historically high levels at present. Real incomes on foot of the reform measures will decline significantly and confidence will be dented for some time.

The impact on the farm labour force is unlikely to be significant for a number of reasons. The decision to stay in farming depends on a number of factors. The income decline consequent on the reform proposals, if implemented, will be an important "push" factor. As against this the "pull" factors will be weakened over the period of implementation. These factors depend on the employment and pay prospects in the non-farm economy. Neither of these elements is expected to be particularly attractive over the short to medium term. Thus farmers may have little option but to remain in farming as their principal occupation. This does not rule out greater take up of part-time off-farm employment.

Any quantification of the likely effects on the non-farm economy can only be speculative given the many imponderables in the domestic and world economies.[7] The dominant CAP-reform related factor will be the reduction in agricultural output prices since the decline in farm income (in nominal terms) is fairly modest as is our assumed fall in the volume of gross agricultural output. The fall in agricultural output prices of about 12% would be expected to have positive effects on the volume of consumption. This will directly *increase* GNP/GDP growth. A second, and potentially more powerful effect, will operate through a possible gain in competitiveness. The fall in agricultural output prices will push down overall

7 The remarks here are based on an updating of a study conducted by the Economic and Social Research Institute (ESRI). This study was based on the "Reflections'" paper of the Commission and thus the full scale of the increase in subsidies was underestimated. We take responsibility for the interpretation of the results of the updated study.

consumer prices. This in turn will place downward pressure on wage rates. If Irish wage rates increase more slowly than our competitors this will increase exports, reduce imports and boost GNP/GDP growth. If GNP grows as a consequence of the measures this will positively affect employment and unemployment.

A preliminary quantitative assessment of the impact of the proposals on the overall economy indicates a possible net gain[8]. In summary, on the face of it, the effects of the Reform measures could prove beneficial to the overall economy.

STRATEGIC RESPONSES : THE ADOPTION OF PRO-COMPETITIVE ADJUSTMENT POLICIES

A datum for any discussion of strategic policy responses is that the move towards free trade is inexorable. One can only conjecture when this point will be reached, but that we're heading for an era when agricultural price support as we have known it will no longer exist, cannot seriously be questioned. The political climate has changed irrevocably. We in Ireland do not welcome such a prospect but the issue is the inevitability of the free trade outcome. It is against this background that we need to seriously question what policy choices will best enable us to manage the transitionary process.

In our view the optimal choice of adjustment strategy hinges on whether we think we can or have the capacity to successfully compete in a free trade environment whenever that situation eventually emerges. If we think we *cannot* compete then our optimal adjustment strategy is simple. We aggressively defend the status quo; we batten down the hatches and we try to elongate the adjustment process - the "Fortress" Europe position.

On the other hand, if we think we are competitive, or have the potential to be competitive, then it seems axiomatic that we should favour the adoption of pro-competitive adjustment policies. Such policies are in our view necessary to allow our commercial producers to obtain a "window" to the marketplace. In essence the argument is a "learning curve" argument. This "window" will enable them to adapt and adjust better to the requirements of the market.

This perspective is buttressed if "world" prices were to firm in the wake of significant policy reform. Competitive regions by surviving in the marketplace during the

8 Based on the farm income, output and price responses given in Table 4 and using the ESRI model. it appears that consumer prices could fall by up to 5% and the volume of consumption could grow by in excess of 1%. Consumers thus clearly benefit. The full impact of the measures could add up to 0.5% to the GNP growth rate. This benign outcome for growth reflects the increase in consumption and the gain in competitiveness - the latter effect is problably less well based than the former in that it requires assumptions about foreign wage rates. With extra growth there should be marginal gains in employment and a reduction in unemployment.
These estimates implicity assume no alternative to the reform proposals. We take up this point below.

adjustment phase then stand poised to reap the benefits of any increases in "world" prices which might follow the implementation of reforms. Most trade simulation models point to a substantial firming of world prices in the wake of multilateral trade liberalization (see Blandford and Harvey for useful summaries) for precisely those products which are of most importance to Ireland. Indications are that dairy products could increase by 25-30%; "red meats" by 10-16% and wheat by 2-10% (Harvey).[9] Such a scenario would only arise in a GATT context so if Ireland can compete successfully we ought to adopt a relatively benign view of multilateral liberalization.

To sustain competitiveness requires that a country's competitive advantage does not at least deteriorate with the passage of time. Competitiveness thus implies that a country can offset the costs of price adjustment by increasing its market share. The question then arises whether the Irish agricultural sector is competitive and whether the Reform proposals are likely to be pro-competitive in their impact?

To suggest some answers to the first question we look initially at the evolution of the Total Factor Productivity (TFP) of the Irish agricultural sector as a whole from the period of EC accession up to the present. The TFP concept is obtained by dividing a Volume Index of Gross Agricultural Output by a Volume Index of Total Input Use. Total inputs comprise purchased materials (feedstuffs, fertilisers, etc.), labour and capital. The TFP index purports to capture the evolution of a sector's technical efficiency rating. International comparisons of TFP indices may thus be used to draw inferences about a country's intertemporal competitive standing. For instance. if country B's productivity index exhibits a faster positive rate of growth than country A's, and if the trend in total input prices is similar in both countries and the exchange rate stable, we can conclude that A's competitiveness - production costs per unit of output volume - is deteriorating relative to B's.[10]

It is only possible to implement the TFP approach at the level of the whole sector. We are also concerned about the competitiveness of individual enterprises. In this case it is feasible to consider competitiveness for only a few points in time so a trend cannot be strongly determined. To obtain this information we draw on a recent study which explored Ireland's competitive advantage in milk, beef, cereals and sheep production.[11]

9 Given the degree to which internal Community prices exceed existing "world" levels, any likely increase in "World" prices will only partially lessen the scale of downward price adjustment to be experienced in the move towards freer agricultural trade.

10 To see this, let $[(C/Q)_a/(C/Q)_b]$ be the ratio of total production costs (C) per unit of output volume (Q) in country A relative to country B expressed in a common currency. This ratio can be expanded as:

$$[(Q/I)_b/(Q/I)_a]PI_a/PI_b$$

where, (Q/I) is the TFP index and PI the input index. If input price trends are similar then a rising TFP index in A relative to B implies declining competitiveness in A.

11 This forthcoming study by Boyle et al was funded by the AIB Group and coordinated by the Irish Farmers Journal. We are grateful to the project's sponsors for permission to reproduce some of the material from his study in this paper.

The Productivity of Irish Agriculture 1973-90

The following table contains an updated version of estimates of Ireland's TFP first presented by Boyle. The methodology followed in this study is similar but here we use revised CSO data which was made subsequent to the earlier publication and our labour input is measured in terms of Annual Work Units (AWUs) as reported in various EC Structures Surveys.

TABLE 5

The Total Factor Productivity of Irish Agriculture, 1973 to 1990, (1973 = 1.00)

Year	*Volume of Gross Agr. Output*	*Volume of Total Inputs*	*Total Factor Productivity*
1973	1.00	1.00	1.00
1974	1.00	0.96	1.04
1975	1.02	0.94	1.08
1976	1.01	0.98	1.04
1977	1.11	1.01	1.11
1978	1.17	1.05	1.11
1979	1.17	1.10	1.06
1980	1.15	1.06	1.08
1981	1.15	1.07	1.07
1982	1.22	1.06	1.15
1983	1.26	1.07	1.18
1984	1.37	1.07	1.29
1985	1.35	1.07	1.26
1986	1.33	1.08	1.23
1987	1.35	1.05	1.28
1988	1.37	1.06	1.30
1989	1.40	1.07	1.31
1990	1.51	1.08	1.39
Growth (%)	2.42	0.45	1.94

These data suggest that Ireland's productivity growth was 1.9% for the period 1973 to 1990.

For most of the 1970s, and the first two years of the 1980s, output performance was poor and consequently only moderate productivity performance was achieved. With the benefit of hindsight this period is seen to be an aberration about a long-run productivity trend of under 2% as suggested as one possibility for the apparent productivity slow down observed in the earlier study which used data up to 1982 (see Boyle 1986). Despite the introduction of the milk quota in 1984 it is clear that the volume of production has grown impressively since the early part of the 1980s as producers switched to alternative products. Total input consumption on the other hand has been remarkably stable yielding a favourable productivity performance.

These results imply that total production costs per unit of output have been steadily falling since EC accession. Whether our competitiveness has been improving will

depend on whether Irish production costs have fallen vis-a-vis other countries. Some evidence on this point can be discerned from a published study relating to the EC.

In a comparative analysis of the development of TFP in the EC for the period 1965-1985 Henrichsmeyer and Ostermeyer-Schloder find a narrow range of estimates. Ireland emerges as joint second after Italy and the UK but better than Denmark, the Netherlands, France and Germany. The implication of these findings is that Ireland's inter-temporal competitiveness has been improving.

The Competitiveness of the Main Enterprises

The competitiveness of the principal Irish farm enterprises (milk, cattle, cereals and sheep) is assessed relative to the main trading nations in Tables 6 and 7. The data for the EC analysis is drawn from the Farm Accounts Data Network (FADN) of the EC Commission while that for other countries is taken from a variety of national sources. Two indices of competitiveness are considered, namely, cash costs expressed as a percentage of the value of output and in IR£s per 100 kgs of product volume. The first index indicates the flexibility of the agricultural sector to withstand downward price adjustment relative to market rivals. The second index indicates where production should be concentrated if costs are to be minimized for a region or group of regions. Cash costs comprise all actual outlays on purchased inputs by producers. No imputed costs are involved.

TABLE 6

The Competitive Advantage of Irish Agriculture - Cash Costs as a % of Output (1989)

	Milk	*Beef*	*Wheat/ Cereal*	*Sheepmeat*
Germany	60	77	—	—
France	60	66	58	78
Italy	52	—	—	—
Belgium	46	—	—	—
Netherlands	57	—	—	—
Denmark	74	—	99	—
Ireland	52	54	60	60
UK	64	68	78	81
US	86/77	128	79	81
Australia	64	75	64	—
Canada	72/52	—	54	—
New Zealand	56/68	na	—	—
Argentina	—	79	na	—

Source: Boyle et al (1991, forthcoming).

These results allow a number of conclusions. For a given product, the lower the ratio of cash costs to the value of production the greater the capacity of the sector to absorb a price reduction at least in the short to medium term. With this perspective in mind it is evident that Ireland is considerably well placed for virtually every commodity both within an EC and non-EC context.

Consider the milk product. In the European Community the only country which is in a marginally better position to withstand price cuts is Belgium and Ireland is seen to vie with Italy for second position. In particular, we demonstrate much greater flexibility to absorb price shocks than the UK, Denmark, France and Germany. On the basis of this index we are also better positioned to withstand price cuts than the US, Canada or Australia. Indeed on the basis of our data we are in a slightly stronger position than New Zealand. In New Zealand's case and also for many other countries, there is a vast difference in the scale of activity vis-a-vis Ireland. This implies that unit margins can be more restricting because of the large volumes produced.

A similar story emerges in the case of beef production. While the EC data are not as firmly based as for milk production it is not unreasonable to infer that our beef sector exhibits much greater slack when confronted with significant reductions in prices. On our figures we are even better placed than Australia or Argentina.

In the case of cereals/wheat production Canada is clearly in an ascendant position but Ireland is just pipped by France for second berth. Our index value suggests superiority to the UK, Denmark, the US and Australia.

In the main EC lamb-producing sectors we are clearly seen to have a lower proportion of costs in output than either France or the UK.

The data in the following table identify cash costs in units of the Irish currency per 100 kgs of product volume. This index views competitiveness from the perspective of a particular geographical region where the concern is to minimize the cost of production in the region.

TABLE 7

The Competitive Advantage of Irish Agriculture Cash Costs - IR£ per 100 kg of Product Volume (1989)

	Milk Actual solids	*Beef Liveweight*	*Wheat/ Cereals*	*Sheepmeat Liveweight*
Germany	15.8	na	—	—
France	12.6	na	6.7	122.7
Italy	15.6	—	—	—
Belgium	10.0	—	—	—
Netherlands	14.7	—	—	—
Denmark	19.9	—	12.6	—
Ireland	11.3	na	7.1	84.1
UK	13.2	na	10.2	89.6
US	17.8	124.7	7.8	—
Australia	6.5	47.0	4.3	—
Canada	13.3/23.4	—	5.4	—
New Zealand	5.2/7.5	35.0	—	40
Argentina	—	42.0	3.0	—

Source: Boyle at al (1991, forthcoming).

In the case of milk, as far as purchased resources are concerned, the Irish and Belgian sectors are rivals for premier efficiency status. We are clearly superior to Denmark, the Netherlands and Italy. For the non-EC countries, New Zealand and Australia compete for first position with a cash cost of around IR£7 per 100 kgs of product volume or about 64% of the Irish level. This is a highly creditable performance from Ireland's viewpoint given that the New Zealand sector has been free of market distortion since 1984. Apart from a downward adjustment in product prices which accompanied the withdrawal of subsidies in New Zealand's case there was a concomitant squeeze in profits and prices amongst input-supply firms. There is no reason why a similar experience would not apply in the EC.

For the cattle sector any conclusions suffer because of the paucity of suitable data especially for the EC. However, we can draw some broad conclusions. There is little significant difference between cash production costs in Australia, New Zealand and Argentina so a figure of about IR£43 per 100 kgs of liveweight would be a reasonable ballpark estimate of costs for these countries. US costs would appear to be at least double if not three times this level. It is difficult to identify a precise figure for the Community countries but we can suggest a possible order of magnitude. Within the EC Ireland is possibly the lowest cost producer. We are possibly 20% more cost efficient than France and at least 20% more efficient than Germany and possibly the same minimum gap separates us from the UK sector. Irish costs are in turn perhaps over a third greater than the US. The tentative conclusion then is that Ireland is quite cost efficient in a Community context in the short to medium term but is not competitive in the global trading arena.

Now let us consider the cereals/wheat sector. The data suggest that competition under full price deregulation is likely to be vigorous since the divergences between producing countries is not excessive. A hierarchy is nonetheless apparent. Argentina and Australia would appear to have a slightly lower level of production costs than Canada - possibly IR£10 per tonne. There is little to separate Ireland and France and both share a cost advantage over the US of up to IR£10 per tonne. Ireland is seen to enjoy a significant advantage over the UK and Denmark of between IR£50 and IR£30 per tonne.

New Zealand is capable of producing lamb at a maximum of IR£40 per 100 kgs of liveweight. This is an impressive performance when viewed against EC costs. In our estimation Irish and UK costs, which are quite close, are possibly three times as great as in New Zealand. France has cost levels nearly 50% higher again.

To sum up, therefore, as far as our EC competitors are concerned we are quite cost efficient in all of the products examined. Taking account of non-EC countries the message which emerges is that *as far as cash costs are concerned* we have a healthy competitive status in milk and cereals production. The same is not true of beef and sheepmeat.

The latter observation ought not to be grounds for pessimism about the capacity of these sectors to survive a free trade outcome. To be competitive does not imply being the lowest cost producer but rather as Isermeyer remarks the competitive producer is one who can sell his product at a lower price than that of the weakest competitor remaining in the market. On this basis we are competitive.

Our discussion of competitiveness above has focused exclusively on comparisons of total cash costs since in our view this is the concept which is the most reliable in the absence of a harmonized database. However there are drawbacks which limit the applicability of inferences regarding competitiveness to a short to medium term horizon. Competitive advantages can be conferred on a country simply because of its land tenure, labour hiring or capital financing practices. In the long run these advantages ought to dissipate. The most general concept of cost in the sense of its applicability across a spectrum of policy regimes and time horizons is total economic cost. In Boyle et al an attempt was made to construct such an index for the EC sectors. The results in all cases imply that Ireland will have to resolve fundamental structural impediments if it is to be competitive in the long run. The healthiest sectors would appear to be milk and cereals.

There is little doubt therefore that the average scale of activity will have to be upgraded to ensure the long-run competitiveness of our main enterprises.

In the case of the dairy sector, which is the linchpin of the Irish agricultural economy and a sector severely curtailed by a rigid supply control regime, the competitiveness findings cited above are confirmed by many other studies which employ different methodologies, datasets and time periods (see Annex 2 for a summary of the more important studies). International comparative cost analyses which include Ireland for the other sectors are not available on a global basis. Some work, however, has

been published for the EC using the FADN database which confirm the broad findings given in Tables 6 and 7 for the beef, sheep and cereals enterprises. In our judgement the conclusion that the Irish dairy sector, in particular, is internationally competitive and well placed to face trade liberalisation in the longer term is well nigh incontrovertible.

COMPETITIVENESS AND POLICY INFERENCES

Arising from the Reform proposals we would like to focus on three issues which impinge on the competitiveness of Irish agriculture :

— the continued existence of the dairy quota in its present form;

— whether the compensatory measures will impair the competitiveness of commercial producers; and

— whether the reform proposals are to the competitive detriment of grass-based production.

Cap Reform and the Dairy Sector

In the dairy sector the existing quota regime is anathema to the exploitation of competitive advantage. It is the one sector where policies, namely compulsory supply control measures, directly impair the exploitation of competitive advantage and the proposed changes reinforce the detrimental effects of the policy. For that reason it merits extended comment.

The core of the reform measures involves a quota cut of 3% and a price reduction of an estimated 10%. It is our contention that the production quota as currently implemented is anti-competitive in its effect. It protects the inefficient and at the same time prevents the efficient producer from exploiting his efficiency.

If we are or have the potential to be competitive, the continued existence of the dairy quota regime prevents that competitive advantage from being fully realised. If we are not competitive or would not be competitive in time, then there is no point in altering the status quo.

Given that we may be competitive in dairy production what policy implications can be reasonably inferred? This is clearly a matter of some contention and for which there is room for much discussion. The view of this paper is that at the very least it suggests we should look very seriously at pro-competitive adjustment policies which might open that "window" of opportunity to the marketplace for our commercial producers. Two policy options are suggested - international quota tradeability and a PEG system. Both of these policies provide a bridge between the existing policies and the world of free trade.

The strength of the argument regarding competitiveness lies in considering its obverse, that is, if we are not competitive or would unlikely be competitive in time, then clearly there would be little point in even raising the issue of pro-competitive policies. The fact that we may be competitive, however, behooves us to consider more complex choices.

At least two strong counter arguments can be made regarding these policy inferences. The first runs something like this. If Irish dairy production is competitive, farmers have nothing to worry about, so this type of argument undermines their strenuous opposition to freer trade? Being competitive does not imply rosy prospects in the face of continuing price liberalisation. Being competitive means that the dairy industry is likely to *survive* these price adjustments - an issue of profound concern to the economy as a whole - and at the end of the process we would still maintain a strong trading presence in the marketplace. But in the adjustment phase there will be severe income losses among competitive and non-competitive producers alike. This is undeniable and farmers are rightly concerned about the issue of compensation. The concern of this paper is that we need to plan *now* for that period when the adjustment to free trade is completed. We need to set in motion *now* the policies which will enable us to prosper in that free trade environment. The danger with emphasising the adjustment losses is that we may fail to see the light at the end of the tunnel, and worse, we may fail to initiate the necessary policies which will enable that light to shine all the brighter.

A second reasonable criticism regarding the policy inferences set out above suggests that even if we are competitive at the present point in time, this is not a sufficient basis for altering the policy status quo, that is, the dairy quota system in its existing form. This is a fair point and one which we accept. In the transition to free trade we need to adopt policy positions in relation to R & D, education and training, land mobility etc. These policies are required to sustain and hopefully enhance our competitive position.

However, another issue arises here, namely, the costs of adhering to the status quo relative to the adoption of pro-competitive adjustment polices. In our view doing nothing is the more costly option since it fails to provide that "window" to the marketplace in the adjustment phase. Of the two policy options discussed below there would appear to be no major downside risks in the PEG proposal. On quota tradeability there exists a risk of losing national quota in that macroeconomic variables, such as differential real interest rates and fiscal divergences might influence trade flows in addition to the microeconomics of milk production. It is a matter of judgement as to where one thinks the balance lies.

International Tradeability of Dairy Quotas

Much of the rigidity inherent in the supply control measure, however, could be eliminated if quotas were made freely tradeable on both an international and intranational basis. We are not naive enough to suggest that quota trade flows across national boundaries will be dictated by comparative advantage. Inefficient capital

markets and inconsistent macroeconomic policies will have their effect and policies would need to be shaped with these in mind. Free trade in quotas would allow new entrants to bid for the production rights and thus permit "new blood" to infuse the sector. With a more efficient quota market the price of quotas should bear a closer relationship to the economic fundamentals of milk production.

The main impetus towards enhanced cost efficiency over time is the development of better techniques of production which principally emerge in the agricultural sector from public funded investment in R&D. The level of State funding has been declining in real terms in recent years precisely at a period when R&D was never more essential to the maintenance of a strong trading presence in international markets. A quota environment, however, engenders myopia and the incentive to conduct R&D and to lobby for increased funding becomes increasingly blunted.

The PEG Proposal - A Half Way Measure Between Supply Control and Price Adjustment

An intermediate strategy between a quota and a price system could be considered as a stepping stone towards free trade. One such strategy is the so-called Production Entitlement Guarantee or PEG scheme (see for example Harvey, Sheehy(1990) and Riethmuller et al). Such schemes are closely related to the current EC "C" quota regime in the sugar sector. There are two variants of the scheme. The first would involve support prices being maintained by consumers. The amount which would be supported by this higher internal price would be set at that amount which would be produced if all production received the world price. Any production in excess of this amount would only receive the world price. The scheme could be implemented by producers receiving marketing certificates for the supported production levels or by the levying of a tax equal to the difference between the support and world price on amounts of production in excess of domestic requirements. Since support prices are maintained above world levels by consumers the mechanism is not entirely trade neutral as domestic demand is depressed and exports are greater. The trade distortion is clearly considerably less than under an open-ended support arrangement. The second variant is identical in all respects except that support prices are maintained by deficiency payments and hence financed by taxpayers. Since consumers are free to purchase at the world price this variant is entirely trade neutral and effectively support is virtually decoupled from production and consumption decisions.[12]

These schemes preserve the concept of price support but limit the amount supported to domestic requirements while at the same time permitting those producers with a competitive advantage to produce additional amounts at world prices. How do such schemes gel with the drift of present policies?

12 Riethmuller et al argue that in the long-term such neutrality may not apply since greater investment could be encouraged by the deficiency payments and farmers' exposure to risk would be diminished.

The intent of present policies is to nudge EC production towards a level which would be sustainable under free trade. This is clearly going to be achieved through piecemeal cuts in support prices and by a "...progressive reduction in the quota as the EC market for dairy products declines" (Sheehy, 1990). PEG-type schemes would appear to have a role to play in the management of the adjustment to free trade in a manner which would permit production and trade on the basis of competitive principles. It is our contention that present policies will not achieve this end. Clearly producers who would be vulnerable under free trade would prefer an elongation of the adjustment process. Countries on the other hand (like Ireland) who ought to be competitive in such an environment will have their competitive capacity blunted under present arrangements. As Sheehy (1990) remarks our global trading partners in the interim who are pursuing the price option will be gaining a foothold in new markets. Moreover the quota system will continue to lead to a slower pace of structural change relative to the price option; a slower pace of technological change and a reduction in productive capacity. We would contend that a continuation of this system is not the best preparation for the heat of the marketplace. The PEG schemes serve to alleviate the "sharp shock" impact of an abrupt move to lower prices while also allowing more efficient producers to become accustomed to the requirements of competition.

CAP Reforms and the Competitiveness of Grass-Based Production

The policies in place in the non-dairy sectors cannot be considered to be anti-competitive in terms of their direct effects. However, the 35% reduction in cereal prices contained in the Reform proposals is greater than for any other product. The argument is often made that because milk and beef production is more extensive in Ireland than most other Member States that Ireland's 'grassland' products will be less competitive if the reforms are implemented, in the sense that costs of production will be reduced more in other Member States than in Ireland.

There are a number of facets to this question which merit attention. The first is the likely reduction in feedstuffs prices and a second key concern is how this effect would translate into gains or losses in the competitiveness of the livestock enterprises in the Community.

The extent of price reduction in animal feed consequent on a fall in cereal prices is open to speculation. On the presumption that the price of cereal substitutes track cereal price movements we assumed in our analysis of the likely income loss to the sector that feed prices would decline by 20% in each Member State. Thus, arising out of the reform proposals two factors will impinge on profitability, namely, a reduction in livestock product prices and a fall in feed prices. While in an individual country both of these effects together will reduce profitability, the extent of reduction will differ across countries. The central question is then whether the commercial Irish livestock sector will be more or less likely to survive in the wake of the Reform measures?

In the Community there is a wide diversity in the intensity of purchased feed consumption - measured in terms of the share of enterprise output accounted for by feedstuffs - in the livestock and dairy sectors of the Member States (Boyle et al). For competitiveness to be adversely affected the price of concentrate feed must fall relative to forage. It is important to note that the relevant price of forage is not simply the variable costs of production (fertilisers, seeds, contract charges etc.) but the total economic costs. Since farmers presumably pay the full economic price for purchased feed we must compare like with like. A major element of the economic price of forage is the foregone income or opportunity cost of production. In other words, for every extra unit of forage production, how much income is being foregone from producing livestock? The relevance of this point to the CAP Reform proposals of course is that the opportunity cost of livestock production, especially beef production, is set to fall by a significant amount. This will create a greater incentive to extensify production, that is, to produce more grass. Thus there are two offsetting factors which will impinge on competitiveness, namely, a fall in concentrate feed prices and a fall in the opportunity cost of grass production. Both these effects arise as a direct result of the Reform proposals. Clearly circumstances where these two tendencies cancel cannot be ruled out *a priori*.

We attempt to quantify the short-run impact on profitability of the reform proposals in the case of milk and beef production in Table 8. This analysis takes no account of any producer response by way of volume change in either outputs or inputs nor do we take any account of the adverse competitiveness effects of cheaper pig and poultry production. It simply applies the feed and product price cuts to the base situation. The outcomes reflect the intensity of bought-in feed consumption in the different countries and the intensity of input-use generally.

TABLE 8

Estimated Static Impact on the Profitability[a] of EC Milk and Beef Production Sectors of the CAP Reform Measures % Change

	Reduction in feed 20%	*Reduction in price*	*Net effect product price[b]*
		% Change in profits	
Milk production			
Germany	+13	- 42	- 28
France	+10	- 36	- 26
Belgium	+ 8	- 22	- 15
Netherlands	+11	- 30	- 19
Denmark	+28	- 57	- 29
Ireland	+ 6	- 25	- 19
UK	+16	- 38	- 22
Beef production			
Germany	+60	-214	-154
France	+ 9	- 80	- 71
Ireland	+ 5	- 42	- 37
UK	+23	-108	- 85

a: Profits before compensatory payments, production taxes or return to family labour and equity capital.

b: a 10% fall is assumed for milk and a 15% for beef production.

Source: Boyle et al.

It should be remembered that, since these data are in terms of the percentage change in profits, large changes are in respect of relatively low absolute bases. These data allow a number of important conclusions. If we only consider the effect of the feed price cut then clearly Ireland will gain appreciably less than other countries. However, because of the relatively high intensity of total input use in our competitor countries, the effect of a given product price cut will be proportionately greater. When we obtain the net effect on profits we see that Ireland should lose by less (in percentage terms) than other countries - especially in the beef sector - and thus our competitiveness at the very least ought not to be impaired.

The same reasoning would not operate in the sheep sector. Reductions in output prices are compensated by deficiency payments so effectively from the producers viewpoint he faces no change in his product price. The exclusive effect on competitiveness therefore is through the effect of cereals price. In this instance our competitiveness would be adversely affected.

THE PRODUCTION NEUTRALITY OF THE COMPENSATORY PAYMENTS

Producers who do not satisfy the criteria for compensatory payments owing to a combination of regional, scale and production intensity circumstances will clearly experience severe income losses. From an equity standpoint this may be judged acceptable if their income levels are already considered to be large. Thus it could be argued on equity grounds that they can afford some income loss without suffering undue pain and in any event they are the producers who are perceived to have benefitted to a proportionately greater extent from the existing set of support policies. The opposition being voiced to the general thrust of the reforms, and in particular to the effective substitution of targeted compensatory payments, on the basis of disadvantage, for price support, by the political lobby on behalf of such producers could be construed as nothing more than "sour grapes".

From an economic perspective the key point is whether such producers will be competitive. In other words will they survive the price shocks? The evidence presented already suggests an affirmative answer. However, there is one important caveat. If the package of compensatory proposals is not production neutral then the competitiveness of the commercial sectors could be impaired. In other words if the menu of compensatory measures targeted at the smaller scale producers results in increased production across the Community, or if it prevents uneconomic producers from ceasing production, it could well place downward pressure on prices which would be to the competitive detriment of commercial producers in Ireland and elsewhere. Moreover, the cost of this additional production to society will be excessive if these smaller scale producers are relatively inefficient. On the face of it the Reform measures contain the danger of not being production neutral. For instance, there will be strong incentives for producers to produce up to the thresholds to qualify for maximum compensation.

PRO-COMPETITIVE POLICIES AND THE FOOD PROCESSING INDUSTRY

While the central concern of this paper is the primary agricultural sector some of the issues outlined already extend naturally to the processing sectors. Our treatment here is not intended to be comprehensive. We wish simply to raise some issues for debate.

A view which permeates most policy discussions on the Irish food processing industry is that the EC intervention mechanism is responsible to a large degree for the failure of the industry to produce and export significantly greater amounts of "high-value-added" products. The intervention system many believe reinforces the underlying seasonality "problem" of Irish commodity production. The clear implication is, if this argument were valid, is that if the system were to be modified, and amendments are probably technically feasible, we would at the very least ameliorate the "seasonality" problem.

This view begs several fundamental questions. First, would there be a significantly different mix of processed products in the absence of the CAP? Second, is Ireland's

seasonal production of milk and beef products a bad thing? On the first question our answer is probably not. The reasons for this are related to why we believe that our seasonal production of commodities is not necessarily a bad thing.

Many strategies can be identified for a *nation's* food industry. Porter summarises them under two categories, namely, "low cost" and "product differentiation":

"To gain competitive advantage over its rivals a firm must either provide comparable buyer value but perform activities more efficiently than its competitors (lower cost), or perform activities in a unique way that creates greater buyer value and commands a premium price (differentiation)".

In the context of the food industry these can read as the "commodity" versus "high-value-added" strategy. The food industry involves a sophisticated value chain. In schematic form its structure can be described in the following hierarchy, in ascending order of added value (see Crocombe et al)[13]:

Food Industry Value Chain

Commodities
Food ingredients
Consumer goods — standard — speciality

It is important to indicate that neither strategy is necessarily better than the other despite the frequent suggestion to the contrary in the Irish debate. This is not to deny that there are problems with sustaining competitive advantage in the case of the "low cost" strategy. The source of competitive advantage is commodity production is usually the abundance of particular factors of production. This advantage can be eroded if the factor conditions are easy to replicate or imitate. The most obvious case is competitive advantage based on low wage costs. If the advantage is politically based then clearly it can evaporate quickly depending on the political climate. Moreover, as Crocombe et al point out, in the progression up the value chain margins tend to be greater and production and trade becomes less sensitive to price developments. But there is no point in a nation through its industrial or agricultural policy pursuing a "differentiation" strategy if the economic basis for such a strategy does not exist. There will always be individual firms in all countries which will pursue strategies which are at variance with the national tendency. It would be a mistake, however, to extrapolate from these experiences to the entire industry.

It is the argument of this paper that the economic basis for Ireland's concentration in commodity production and exports is because it possesses a comparative advantage at this end of the value chain. In commodity production competitiveness principally depends on the price of the raw material which in turn depends on the competitiveness of the producers of the raw material. We have already argued that Irish primary output production is competitive. The main reasons for our strong

13 Porter was one of the co-authors of this study on New Zealand and the methodology is based on Porter's own study.

competitive position are our relatively low feed and overhead costs (Boyle et al). These factors in turn stem from our grass-based production system which of course is highly seasonal. Thus the abundant factor is our seasonal grass growth. In other words our competitiveness in commodity production is intimately related to seasonality. Both phenomena are two sides of the same coin.

If the above argument is accepted, it follows that a structure of output and exports which is based on the principle of comparative advantage cannot be reasonably argued to be deficient. But can it be sustained?

The nature of Ireland's comparative advantage cannot be readily imitated. It is perhaps only replicated in one other country - New Zealand. However, political factors in the guise of trade distortions, support prices and quotas have lessened the gains countries like Ireland should be reaping from its base of comparative advantage. In terms of Ireland's strategic response to the CAP Reforms it is clearly in our interest that production and trade be determined on the principle of comparative advantage. Any policy which blocks this development is not in our long-term strategic interest.

Our view therefore is that the concentration on commodity production and trade is solidly based and not something which should be decried. This of course is no argument for not continuing to seek competitive improvements or to extend the range of product differentiation.

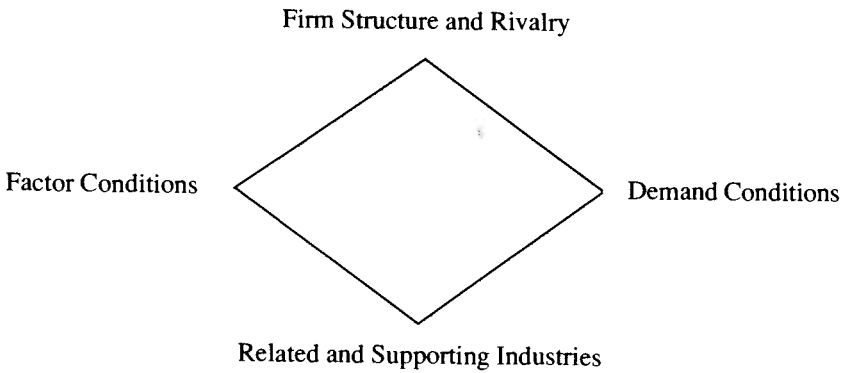
Many competitive gains will come from the primary sector as R&D advances are made and human resources and scale are upgraded. Commodity processing will continually seek pressure to effect economies in processing, marketing and distribution. This will inevitably result in consolidation, amalgamation of domestic firms and joint ventures with foreign firms.

On product differentiation it is manifest that merely willing for firms to diversify from commodities will not be successful especially if our view is taken that this line of processing is rooted in comparative advantage. But as we move up the value chain the comparative advantage in the production of the raw material becomes substantially diluted. This is simply because raw materials costs comprise a progressively lower fraction of total costs as value-added is enhanced. In other words sets of factors other than our seasonal grass growth and other market related circumstances assume a greater importance. Thus while we may have a comparative advantage in primary and commodity production it is a giant leap to infer any comparative advantage in the production of higher value-added food products.

The analysis of the New Zealand dairy industry by Crocombe et al provides an excellent case study[14].

14 The New Zealand food processing industry has so much in common with Ireland that it is very likely a great deal would be learned from a study of their strategy in relation to the food sector. The period since the removal of agricultural price support (1984) would be of particular interest.

Porter's thesis of competitive advantage is based on his set of four reinforcing conditions - the "Porter Diamond". These are:



In the commodity end of the value chain "Factor Conditions" dominate as we have already argued. As one moves up the value chain the nature of the "Factor Conditions" changes appreciably and other points of the "Diamond" come into play. The factors of production become, according to Crocombe et al, much more sophisticated. They tend to be factors which are generated by the nation - such as technology and human capital - rather than endowments. "Firm structure and rivalry" becomes delineated along product and process innovation lines. "Demand Conditions" assume an important role. The presence of sophisticated buyers as in the case of the food ingredients' industry in the US engenders tremendous competitive pressure. The existence of "Related and Supporting Industries" also becomes significant. In the case of New Zealand, the authors suggest that no elements of the "Diamond" are wholly suited towards the upgrading of the food production value chain. It is perhaps interesting that nowhere in the study is their any reference to the obstacles placed on diversification by the highly seasonal structure of production.

Whether one accepts Porter's thesis or not, it is clear that the shift of a nation's food production mix will not be easily achieved. It would be a grave error to assign all our ills to the issue of seasonality. Our seasonal structure is a reflection of the basis of our competitive advantage in commodity production. Thus any significant tampering with this structure would involve a national loss. Nor can seasonality be validly identified as the exclusive culprit of the relative lack of product diversification. We must look to other and unfortunately more complicated sources.

SUMMARY AND CONCLUSIONS

National responses to the CAP Reforms of the EC Commission can conveniently be classified into *tactical* and *strategic* responses. The traditional domestic stance towards the CAP has been to maximise transfers from the Community in the given circumstances. This is rational but tactical response especially in conditions where a fundamental overhaul of the agricultural support mechanisms is inevitable. The

problems created by the market distorting support measures in the OECD area are chronic. The gap between the support price and the competitive price is substantial in regions like the US, Japan and the EC. This has resulted in massive consumer and taxpayer costs and a persistent problem of surpluses which spill over to the world market causing deep seated trade tensions. Nor can the support policies be considered efficient in terms of delivering support to producers - substantial leakages emerge because of deadweight losses, compensation for the effect of the support policies of trade rivals and higher input and storage costs - or equitable in terms of the main producer beneficiaries.

Domestic responses must take cognisance of the fundamental nature of the problems besetting global agricultural policies and the likelihood that within a relatively short time span traditional support measures will be eliminated. We understand responses motivated by this perspective to be strategic.

Tactical responses to the Commission Reform proposals will centre around the adequacy of the non-price support measures in compensating for the proposed price and quota cuts. Our estimates would suggest that as far as the "national farm" is concerned the nominal income fall should be quite modest - possibly of the order of 1.6% on a 1990 base. The fortunes of individual enterprises vary. The beef sector will suffer the most severe income loss while dairying may register a modest gain. From a tactical viewpoint therefore we ought to pursue greater compensation for beef producers on the grounds that this enterprise suffers the lowest income levels and also because the typical beef system is compatible with the environmental objectives of the Community.

In terms of the national economy a net gain is possible. The reduction in food prices clearly benefits consumers and may also impinge positively on competitiveness.

In the face of an inexorable move towards free trade we need to address ourselves to optimal strategic responses. Our central argument is that countries which are competitive should vigorously pursue pro-competitive adjustment polices. We have outlined evidence which suggests that Ireland has a healthy competitive status especially in the dairy sector. Thus on the face of it we ought to pursue pro-competitive adjustment policies.

When judged against this criterion the proposals of the Commission are deficient especially in the dairy sector. The existence of the rigid quota system is anathema to the exploitation of Ireland's competitive advantage. The quota regime is preventing us from acquiring additional market share at the expense of our less efficient European competitors. As a means towards freeing up the system in a manner consistent with pro-competitive policies consideration should be given to either permitting free international trade in quotas within the EC or to the introduction of PEG-type schemes.

It is our view that the Reform proposals do not impair the competitiveness of grass-based production. Many commentators have stressed that relatively greater

income gains will accrue to livestock sectors which are relatively intensive in the use of purchased feed thus implying a loss in Irish competitiveness. This is true but it is not the whole story. Since livestock product prices are also set to fall this will impact to a proportionately greater extent on the intensive input-using sectors. The net effect would be that, ignoring the compensatory measures, while all countries will suffer an income loss Ireland should suffer least. Thus on balance our competitiveness could be enhanced rather than diminished.

Another concern is that the compensatory measures could turn out to be anti-competitive or non-production neutral. They may have the effect of either encouraging additional production amongst the smaller scale producers in the EC and thus weakening prices to the competitive detriment of commercial producers. Even if the measures have no impact on marginal production they may succeed in maintaining producers in business who would otherwise leave the industry. This outcome would negatively affect countries like Ireland with a competitive advantage independent of subsidies.

While the main focus of our paper is the primary sector many of the arguments extend to the food processing industry. Two broad development strategies can be identified for the food sector, namely, a "low cost" or commodity based strategy and "diversification" or high value-added strategy. It is important to note that there is no basis for implying that one of these strategies is necessarily superior to the other.

Our main view is that Ireland's comparative advantage lies in commodity production. This advantage is based on an abundant supply of grass which is highly seasonal in its production. Thus our comparative advantage is intimately and positively related with seasonality. If this view is accepted then the predominance of commodity exports cannot be readily decried. There is also the implication that the pursuit of pro-competitive policies in the primary sector would allow us to fully exploit our competitive advantage in processing. This is not to suggest that there are not disadvantages with being so dependent on commodity products and that policy should not endeavour to seek greater product diversification. But this will not be readily achieved.

While we may enjoy a competitive advantage at the commodity stage this does not permit us to infer any competitive advantage at progressively higher points of the food value chain. Establishing a competitive presence in these areas appears to have very little to do with the availability of natural resources. Other factors may come into the picture such as the presence of sophisticated factors of production; the nature of the customer base; the character of inter-firm rivalry and the existence of clusters of complementary industries. It is thus clear that the failure to diversify cannot be readily assigned to the "problem" of seasonality. Any tampering with the seasonal structure of production would simply undermine the basis of our comparative advantage in commodity production and trade.

REFERENCES

Blandford, D., (1987), "Distributional Impact of Farm Programmes and the Adjustment Dilemma", *American Journal of Agricultural Economics*, 69, pp. 980-987.

Blandford, D., (1990), "Agricultural Trade Liberalisation : Will Ireland Gain?", *Address to the Annual Conference of the Agricultural Economics Society of Ireland*, October.

Baker, D., M.C. Hallberg, R. Tonjuakio, J. Elterich, R.L. Beck and B. Liebrand., (1990), *Estimates of the Costs of Producing Milk in Seven Major Milk Producing Countries, 1986*, USDA, Economic Research Service, Commodity Economics Division, Staff Report NO.AGES 9056.

Boyle, G.E., B. Kearney, T. McCarthy and M. Keane, (1991), *The Competitive Advantage of Irish Agriculture*, forthcoming.

Boyle, G.E., and D. O'Neill, (1990), "The Generation of Output Supply and Input Demand Elasticities for a Johansen-type Model the Irish Agricultural Sector", *European Review of Agricultural Economics*, 17, pp. 387-405.

Boyle, G.E., (1987), "Measurement of the Total Factor Productivity of Irish Agriculture : 1960-1982", *Irish Journal of Agricultural Economics and Rural Sociology*, 12.

Butault, J.P., (1991), "Couts, Prix et Revenues Selon les Produits dans les Agricultures Europeennes en 1984, 1985 et 1986 : Resultats Generaux du Modele", in *Couts de Production et Competitivite des Agricultures Europeennes*, J.P. Butault and M. Cyncynatus (eds.), *Journee D'Etudes*, Institut National de la Recherche Agronomique (INRA), Paris.

Crocombe, G.T., M.J. Enright and M.E. Porter, (1991), *Upgrading New Zealand's Competitive Advantage*, Oxford University Press, Auckland.

EC Commission, (1991), *The Development and Future of the Common Agricultural Policy*, COM(91)258, July, Brussels.

Harvey, D.R., *The GATT and Agriculture : The Production Entitlement Guarantee (PEG) Option*, Discussion Paper No. DP1/89, Department of Agricultural Economics and Food Marketing, University of Newcastle Upon Tyne.

Henrichsmeyer, W. and A. Ostermeyer-Schloder, (1988), "Productivity Growth and Factor Adjustment in EC Agriculture", *European Review of Agricultural Economics*, 15 pp. 137-154.

Isermeyer, F., *Produktionsstrukturen, Produktionskosten und Wettbewerbsstellung der Milcherzengung in Nordamerika, Neuseeland und der EG*, Wissenschaftsverlag, Vauk, Kiel.

Matthews, A., (1988), "Common Agricultural Policy Reform and National Compensation Strategies", *Paper read to the Statistical and Social Inquiry Society of Ireland*, November.

Porter, M.E., (1990), *The Competitive Advantage of Nations*, Macmillan, London.

Riethmuller, P., I. Roberts, L. O'Mara, G. Tie, V. Tulpole, M. Hossain and K. Klizn, (1990), *Proposed Strategies for Reducing Agricultural Protection in the GATT Uruguay Round : A Synthesis and Assessment*,Project 6133.01, Australian Bureau of Agricultural and Resource Economics, Discussion Paper 90.6.

Roningen, V.O., and P. Dixit, (1987), "Impact of Removal of Support to Agriculture in Developed Countries", USDA, *Economic Research Service*, Washington, D.C.

Sheehy, S.J., (1990), "Adjusting the Milk Superlevy to the World of the GATT", *Address to the FAB Annual Training Conference*, Cork, October.

ANNEX 1
The CAP Reform Proposals Outlined[15]

Milk Proposals

— The national quota will be reduced by 3% to be achieved by reducing individual quotas by 4% and redistributing 1% of this to special categories of producers.

— Annual compensation for the quota cut would be paid over 10 years operated through a bond issue.

— There is provision for a voluntary cessation and redistribution scheme once the new quota arrangements are in place.

— The support prices for dairy products will be reduced by 10% (15% for butter and 5% for SMP) to take account of *inter alia* the reduction of production costs following the price decrease for cereals.

— Compensation for the price cut will be introduced at a rate of about IR£66 per cow for the first 40 cows in every herd, subject to a stocking rate limit of 1.4 livestock units per hectare of forage in disadvantaged areas and 2 livestock units in other areas.

— The payment of premium to producers with annual deliveries of less than 24,000 litres (c. 5,300 gallons) would not be subject to the stocking rate limit.

— The milk co-responsibility levy will be withdrawn.

— The reform measures would be phased in over three marketing years.

Beef Proposals

— Intervention price will be reduced by 15%: 10% to reflect the lower prices for feed inputs and the remaining 5% to maintain the competitive position of beef with other meats.

— To compensate for the loss from the price reduction for more extensive beef producers the *Male Cattle Premium* will be increased to about IR£158 on the first 90 animals, payable in three annual instalments over the animal's life.

— The *Suckler Cow Premium* will be increased from IR£52.20 to IR£82.65 for the first 90 cows.

15 This section draws on material supplied by Mr. Brendan Kearney of Brendan Kearney and Associates. Economic and Agribusiness consultants.

— The same stocking rate limits will apply in the case of the Male and Suckler Cow premia as for the dairy cow premium.

Sheep Proposals

— The reference ewe flock for the ewe premium will be the level qualifying in 1990 and the new limits qualifying for the premium will be 750 ewes in the disadvantaged areas and 350 elsewhere.

— The existing payment of IR£4.83 per ewe in Less Favoured Areas will be maintained.

Cereals Proposals

— A new target price of 100 ECU per tonne (IR£87.88) is to be established, some 35% below the existing average buying-in price.

— The stabilizer and co-responsibility arrangements are to be terminated.

— A system of compensatory payments will be introduced on a per hectare basis and unrelated to current levels of output; participation in the scheme will be voluntary.

— Compensation will be at a rate of 55 ECU (IR£48.33) but "professional" or commercial producers must set aside 15% of their area under cereals, oilseeds and protein crops; smaller producers (that is, those producing less than 92 tonnes) are exempted from the set-aside requirement.

— For each region a historical three year average yield is taken from the last 5 years - omitting the highest and lowest figures.

— The payment per hectare will be related to a reference yield which is taken as 4.6 tonnes for the Community; Ireland would want its reference yield set at our higher national average figure.

— Compensation for set-aside will be at the same rate per hectare as for the price reduction but limited to an area equivalent to the production of 230 tonnes (that is, 50 hectares at average EC yield); every participating farm of 50 hectares or over would receive compensation for 7.5 of the hectares set- aside.

ANNEX 2
Summary of Some Comparative Studies on Agricultural Production Costs

TABLE 2.1

INRA[a] Estimates of Total Production Costs by Product in the EC - IR£(1989) per 100 kgs of Product Volume

Period : Average 1984-85-86
Cost Concept : Cash Costs + Depr. + Imputed Fam. Lab. Cost

	S. Wheat	*Barley*	*Potatoes*	*S.Beet*	*Pigmeat*	*Milk*
D	16.1	19.3	6.2	3.3	137.0	24.3
FR	14.5	13.4	6.8	2.6	132.6	23.1
IT	8.1	11.0	4.4	1.8	109.1	15.9
B	12.7	11.0	4.8	2.6	117.5	16.9
NL	17.3	—	6.6	3.6	122.8	21.2
DK	19.9	19.9	7.8	3.0	132.5	25.4
IR	12.5	13.0	12.8	3.6	107.2	17.0
UK	12.5	16.2	8.7	3.8	119.1	18.3
Comp. Ind.%[b]	88.1	100.0	176.0	117.6	87.7	84.0

Source: Butault.

a: Institut National de la Recherche Agronomique.
b: Irish costs expressed as a percentage of the average cost of all countries.

TABLE 2.2

USDA Estimates of Production Costs in Major Milk-Producing Countries - IR £ (1989) per 100 kgs of Product Output

Period : 1986
Cost Concept : Total Economic Cost & Variable Cost

CAN	D	FR	IRL	NL	NZ	US	Comp. Index %
Variable costs							
17.0	20.2	20.0	5.2	12.4	5.0	10.1	40.5
Total costs							
20.9	28.5	25.9	9.7	15.0	6.2	14.9	56.0

Source: Baker et al.

TABLE 2.3

Isermeyer's Estimates of Global Milk Production Costs - IR£(1989) per 100 kgs of Product Volume

Period : 1983

Cost Concept : Total Econ. Cost & Variable Cost

	Median Herds		*Herds 70+*	
	Total Costs	*Variable Costs*	*Total Costs*	*Variable Costs*
CAN	30.8	16.9	29.8	20.4
US	30.4	16.7	29.8	17.0
NZ	9.9	3.5	11.3	3.0
D	33.6	9.8	24.2	14.2
FR	27.5	9.6	21.2	11.2
NL	21.7	11.8	20.7	12.0
B	27.4	9.6	19.1	9.8
UK	21.4	13.7	22.4	14.1
IRL	22.1	6.8	19.9	9.8
DK	25.8	14.5	23.6	15.2
Compet. Index %	88.4	60.6	89.5	77.3

Source: Isermeyer (1988).