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DISCUSSION PAPER

Department of Agricultural Economics
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CAP Budget Projections to 1988

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Sections

Tables

CAP PROJECTIONS TO 1988

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1. Introduction

The development of the annual budget of the European Community (EC) has been an item of major concern for at least fifteen years. The dominating feature of this debate has been the financing of agricultural expenditure, which has always taken the largest share of the EC budget as a whole. This has led to acrimonious and continuing discussion over the nature and financing of the Common Agricultural Policy (CAP) which represents the main institutional achievement of the Community. Since the mid-1970s, a double crisis over two aspects of this issue - the exhaustion of the EC's sources of finance and resistance by the United Kingdom, and latterly Germany, towards paying their full unabated contributions - has only been averted by a combination of fiscal ingenuity and good luck. It cannot be expected that supplies of the latter commodity will last for ever, and reliance on the former will be tested to the utmost if events in the next few years resemble any of several patterns experienced in the past.

For example, it was widely expected during 1979 and the early part of 1980 that the large increases in agricultural spending would shortly exhaust available finances. Indeed, for a short period at the end of 1979, the exchequers of national states effectively bridged a gap between Commission funds and commitments to pay for intervention purchases, by delaying their demands for reimbursements to national intervention authorities from Brussels. However, world market prices for agricultural commodities rose sharply during 1980, and Community policy decisions combined with adverse weather conditions severely dampened farm output that year, so that the authorities were able to end 1980 and enter 1981 with a much healthier financial position than had seemed possible eighteen months earlier. Again, the advent of the Thatcher government in the UK led to bitter negotiations over that country's financial contribution, and a complete breakdown was only averted by a temporary and somewhat irregular facility for the return of substantial sums. At the time of writing, the approaching end of this period of grace is being accompanied by a variety of political storm signals, and the Community is effectively being forced to rethink its financial system with no assurance of success. A further example of the pressures currently building up is the proposed extension of the so-called participation by producers in the costs of disposing of surplus farm products through the co-responsibility levy system. However, this arrangement is likely to run into severe resistance by the farming sectors affected if it is used as a major weapon to avert a looming crisis.

This Discussion Paper represents an attempt to look forward over a period of several years, following established trends in the agricultural markets affected by the CAP, and deducing the probable consequences for expenditure and its financing. The first part of the exercise consists of projecting production, consumption and trade figures from a 1976-1982 base to the year 1988, which has been chosen as the end-point of the Commission's first long-term planning horizon, proposed in its 'Guidelines' paper (Commission,1981),and adopted, at least in principle, by the Council of Ministers in May 1982. The projections are carried out separately for each member-state of the Community, and the results are compared to similar forecasts made elsewhere. Subsequent to this projection exercise, budgetary calculations are carried out using a model of the CAP (reported in Buckwell et al, 1982). After certain aspects of these budgetary projections are discussed, the paper finishes with a short comment on the financing of the large sums involved.

2. EC Revenue

Table 1 shows total EC revenue and expenditure from the EC's agricultural fund - known by its French acronym FEOGA - since 1975. The Community has three main categories of 'own resources', so-called because the Treaty of Rome regards these revenues as belonging to the EC as a whole, and not to the member-states in which they happen to be collected. The first of these categories consists of import duties imposed on manufactured goods subject to the common customs tariff on trade between the EC and the rest of the world. For several years now, these duties have accounted for about a third of total own resources, having recovered from the recession-hit years after 1973. Future developments in world trade in manufactures would not appear likely to alter this situation significantly, though a severe bout of protectionism involving quantitative barriers to trade (rather than increased tariffs in the teeth of GATT resistance) might actually lead to an absolute reduction in this item.

The second major own resources category comprises levies on agricultural imports into the Community. These depend on the level of trade, the rate of levy, and the effect of various concessionary arrangements on trade in certain commodities. Rising farm production and stagnant food consumption in the EC have led to falling import quantities for most important products covered by the CAP. As a percentage of total EC imports, agricultural products fell from 29 per cent in 1973 to 15 per cent in 1981. The rate levied on these imports is continually adjusted - hence the label 'variable levy' - to bring the value of the goods up from the offer price from the rest of the world to the 'threshold price' set so as to support the EC market towards its internal 'target price' determined each year in spring by the Council of Ministers. Fluctuations in world prices, caused by the interaction of climatic instabilities and national agricultural policies around the world, are such as to cause even more violent changes in the variable levies, which have sometimes even turned negative (i.e. into import subsidies) at times of crisis in the sugar market. However, the normal situation is for these levies to imply import prices which are substantially higher than 'world' prices. Revenues from agricultural import levies accounted for over 20 per cent of the EC budget in 1971 and 1972, but fell in absolute as well as relative terms during 1973-1975 to around 5 per cent. Since then, they have varied from around 15 per cent of total own resources in 1978 (a year of low world prices) to around 8 per cent in the early 1980s.

Before dealing with the third main source of revenue to the Community budget, one or two smaller sources of funds associated with agriculture may be dealt with. For several years, sugar has been subject to a special type of regime within the CAP. Nominally, at least, producers of sugar are themselves responsible for the costs of disposing of the large surplus quantities which have been evident in all but crisis years, and this has taken place through the imposition of a special producer levy based on a system of national quotas and collected via the processing plants in which sugar beet is refined. However, this levy revenue is considered (along with the agricultural levies described above) as part of the general income of the EC budget as a whole. In 1980/81, a major revision of the sugar regime was undertaken, and revenues from this source are projected to rise substantially from their relatively low levels in the 1970s, though whether they will be sufficient to offset the expected heavy cost of storing and disposing of surplus sugar in the now-depressed world market remains to be seen. A similar tax on producers of milk was introduced in 1978 - the so-called co-responsibility levy. However, in this case, the revenue is not added to the general budget, but is used to offset expenditure on measures to dispose of milk products at reduced prices within the Community. This budgetary procedure tends to hide the full cost of the milk regime, and can be criticised as violating the normal rules of budgetary practice (Strasser). Similar co-responsibility levies have been proposed for other products, particularly cereals. However, the gradual adoption of the 'Guidelines' principle of production thresholds and associated price reductions, which tackle the question of excessive spending directly rather than through the fiscal tool of co-responsibility levies, has replaced this idea.

The addition of all the above revenues is insufficient to finance the Community's expenditures under the CAP, let alone additional policies such as the regional and social funds, or special payments to particular member-states. Moreover, the Community's budget is supposed to observe the principle of annuality in which surpluses and deficits are not allowed to accumulate from year to year. Consequently, the remaining source of funds is a variable one, adjusted (sometimes within the year by supplementary budgets) to balance the residual expenditure as closely as may be. In the earlier years of the Community, straightforward financial contributions from the member-states, based on their respective gross national or domestic products, were payable from national exchequers. However, towards the end of the 1970s, a system based on the value-added tax was introduced, under which the necessary funds were determined by the appropriate 'slice' of the VAT revenues gathered by each state, subject to an upper limit equivalent to a one per cent VAT rate, and payable on a common ('harmonised') base to overcome national discrepancies in fiscal practice. The effect of this change has been small, though it does penalise countries (such as the United Kingdom) which have high rates of consumer expenditure and low rates of investment. The own resources raised in this way now account for about half the EC's total revenues, and the VAT percentage involved has grown from 0.64 in 1978 to 0.92 in 1982, dangerously close to the upper one per cent limit governed by treaty. Although the initial draft 1983 budget proposed a fall to 0.74 per cent, the marginal nature of this VAT-based revenue source makes the Community liable to a sudden exhaustion of funds if unavoidable costs due to large surpluses of agricultural commodities are incurred under the CAP. Indeed, during the writing of this paper, the likelihood of a further supplementary budget for 1983 has been apparent, bringing the VAT percentage critically near its limit. The preliminary 1984 budget sets the VAT rate of 0.956 per cent and does not allow for future decisions on increased agricultural expenditure. Discussion of new or expanded sources of EC own resources, such as the scheme proposed recently by the Commission, has occupied several meetings of EC heads of government, but little sign of agreement on future movement is apparent as yet.

The system of financing described above suffers from a number of defects, but this is not the place to enter into a detailed explanation. Suffice it to say that the main points of difficulty arise from the fact that all three main sources of revenue do not bear a natural relationship to the patterns of expenditures for which they are raised. To some extent this is inevitable in any fiscal system: re-distribution of resources is the raison d'etre of any taxation arrangement. But when combined with powerful internal groups such as the member-states, and when both revenues and expenditures are both liable to unforeseeable fluctuations from year to year, periodic crises are inevitable. The only long-term solution would seem to be a widening of the role of the budget, to cover several more sources of finance and sectors of expenditure than the somewhat one-sided present system of concentration on agriculture. But this involves the much broader issue of the development of the Community as a whole, and the transference of more governmental activities from the nation states to the Community, since the overall burden of taxation on individuals and companies can hardly be greatly increased.

3. EC Agricultural Expenditure

It has already been stated that the bulk of the Community's budget has been devoted to FEOGA for the purpose of supporting agriculture. Table 1 shows that for several years between 60 and 70 per cent of the total budget has been accounted for in this way. Of this, by far the largest part is used for so-called 'guarantee' expenditure, spent on subsidising the export of farm products in world markets, on intervention in the internal markets through storage and withdrawal of surplus production, and on subsidies to selected groups of producers and consumers. The remainder of FEOGA expenditure is devoted to the 'guidance' of agriculture by encouraging its structural development through re-organisation of farms, retirement of unwanted resources, and the creation of marketing facilities which improve the position of producers vis-a-vis the purchasers of the commodities concerned. However, this latter guidance category has never exceeded a small percentage of the FEOGA total, and will be largely ignored hereafter.

FEOGA guarantee expenditure has grown from around 5 billion ECU in the mid-1970s to an estimated 14 billion ECU for 1983. Only in 1981 did a reduction take place, as a result of favourable world market conditions and adverse harvests. Table 2 shows this expenditure broken down by the main classes of commodity. It can be seen that the largest item has always been support for milk products, mainly butter and skim milk powder, into which milk is processed after the liquid market is satisfied, along with other higher value-added products such as cream and cheese. The disposal of these surpluses requires sophisticated storage facilities, and involvement in difficult and unpredictable overseas markets, such as those in Eastern Europe and the Middle East. In addition, the presence of major competitive products such as margarine for butter, and other sources of animal protein for skim milk powder, makes it difficult for intervention authorities to exploit apparent opportunities in domestic markets. A further factor of importance has been the role of milk production in the economic situation of smaller and more numerous farmers within the Community, who are sensitive to any slackening of support for a product playing such a large and continuous part in their finances. In 1981, however, a marked reduction in this item was achieved, partly through a temporary slackening in the rate of increase in EC milk production, and partly by a successful exploitation of the oligopolistic position enjoyed in world markets by the EC, the US and New Zealand. But recently, a resumption of fairly generous increases in milk support prices has led to renewed growth in this sector, and further budgetary costs seem inevitable, especially if the US enters world trade aggressively. In the light of recent annual price agreements, it appears that increases in the co-responsibility levy (which, as mentioned above, reduce net expenditure on milk) are too unpopular to be implemented.

The second major category of guarantee expenditure is on cereals, which have experienced rapid growth in production since the poor harvests of 1976 and 1977. With the EC's overall deficit in cereals now eliminated, secondary objectives such as reduction in competition from the so-called cereal substitutes (manioc, maize gluten feed, brans, etc.) have come to the fore. These products, used in the manufacture of animal feedingstuffs, are not covered by the variable import levy system which maintains high prices for cereals within the EC, and imports from the United States and from South-east Asia have grown rapidly since the mid-1970s to the equivalent of about 15 million tonnes of cereals. Efforts to contain or reduce these imports have met with only limited success, and are hampered by the international obligations of the GATT, as well as by strong internal pressures from the producers and purchasers of animal feeds. The Commission is currently focussing on cereals as the main area for real price reductions, both for budgetary reasons and to reduce the cost of a major input into the livestock sectors. Some aspects of this problem are discussed by the present author in an earlier paper of this series, 'Cereals and the New CAP'. Experience in the US, however, shows the difficulties of avoiding a chronic surplus of grains without much more severe policies, such as land retirement and quota schemes.

No other single commodity accounts for as much expenditure as either of the two sectors above. The oils and fats category has shown a high growth rate in recent years as a result of good harvests and the accession of Greece, and measures are being proposed for limiting future price increases for oilseed rape and colza. However, the prospect of accession to the Community by Spain and Portugal threatens to raise this component to unacceptable levels if the current regime is simply extended to these countries. Sugar is also responsible for a large sum, but a good deal of this (though by no means all) is now borne by the producers themselves through the levies on quota tonnages. In the meat sector, expenditure on pigmeat, poultrymeat and eggs is small because the intervention system is barely operated for these products, though export refunds are likely to rise if recent developments continue in exports of poultry from the Netherlands and Denmark to the Middle East and other markets. The bulk of spending on meats is on beef and the relatively new sheepmeat regime, both of which could involve increased burdens in future through higher production levels and limited expansion in consumption. The remaining sectors - fruit and vegetables, wine, and other products - have also reached significant levels of expenditure recently, and again enlargement of the Community to include Spain and Portugal could introduce serious problems. Only compensatory amounts have declined since the mid-1970s to relatively small amounts, following the ending of the accessionary period for the United Kingdom and the rise in sterling. Here, however, the prospect of greater monetary instability than was experienced in the years following the introduction of the European Monetary System in 1979 could lead to sharp and sudden increases once more.

Table 3 shows the extent to which the appearance of new surpluses of agricultural products, and increases in most of those existing in the mid-1970s, threatens the structure of the CAP. The Community, through the commodity management committees of the Commission, is faced with a choice of subsidising the export of domestically unsaleable quantities or purchasing and storing these quantities through intervention agencies, or of encouraging others to do so. Decisions are taken from week to week on these matters in the light of current and future conditions on the internal and external markets. In addition, some expenditure is incurred more or less automatically on account of subsidies and premia payable on the production and consumption of certain products. Table 4, which analyses total FEOGA expenditure since 1976 by the nature of the subsidised activity, shows that, in the event, the year-to-year balance of export refunds to intervention expenditure has remained remarkably stable at a ratio of about 45 to 55 since 1977. However, the balance between expenditure on export refunds on the one hand and storage or market withdrawal of surplus products on the other shows a change from near equality in 1976 towards a three-to-one ratio in the 1980s. This shows that the Commission has largely avoided adding to the expense of the notorious 'mountains' and 'lakes' of unwanted commodities, preferring instead to subsidise their permanent disposal by cut-price consumption within the Community or by sale on world markets. Whether this behaviour is the result of deliberate cost-minimisation policy or of avoiding the presence of politically awkward physical surpluses can only be conjectured. The former explanation would have to involve some recognition of the risk-taking nature of the oligopolistic position of the EC on at least some world markets, in terms of both the optimal timing of exports, and of the Community's role within international negotiations for stabilisation of world trade (see Buckwell and Harvey for some discussion of modelling the trade-off between storage and exporting).

Growth rates in the various items of revenue and expenditure described in this section are shown in Table 5. On the revenue side, the average annual increase in VAT-based payments of over 30 per cent since the mid-70s shows how this source has been increasingly relied upon to balance the overall EC budget since that period, compared to its 'natural' growth rate of about 12 per cent, corresponding to a constant VAT percentage. Total available funds have grown at only about 11 per cent over the same period. From a small base, FEOGA guidance expenditure has grown at over 20 per cent, largely as a result of pressure from the European Parliament and certain member states for policies to aid disadvantaged areas, but the dominance of the guarantee section means that the overall growth rate of the FEOGA total is still around 15-16 per cent, only slightly below the growth in total 'own resources' income, and considerably above the underlying 12 per cent rate of rise in revenue availability. The breakdown of the FEOGA guarantee total by commodity sector highlights the relative success to date in the milk sector (net of co-responsibility levies) and the alarmingly rapid rise in several other categories. Analysed by their economic purpose, storage costs have risen little since 1978 but growth in expenditure on export refunds and price subsidies have both increased by about 14 per cent per year since 1978.

4. An Agricultural Budget for the EC

For the purposes of compiling a set of accounts for the Common Agricultural Policy, official budgetary figures for the EC, such as those discussed above, suffer from a number of defects. First, nearly all Community revenue is regarded as accruing to the general budget, and not allocated to particular purposes, even though, as in the case of the sugar levies or import levies on farm products, the relevant taxation can be regarded as an integral part of the CAP rather than as a general fiscal device. Conversely, the source of the funds necessary to finance the CAP from non-agricultural sources is not explicitly recognised in the official accounts. Second, certain revenues, such as milk co-responsibility levies and monetary compensatory amounts, are netted off against corresponding items of expenditure, so that the gross flows of outflows and receipts are not clear. Third, the budgetary situations of individual member-states vis-a-vis the Community budget in respect of CAP payments are disguised, not only by the drawbacks above, but also because certain payments tend to be made in a different country from that to which the ultimate benefit accrues - the well-known 'Rotterdam-Antwerp effect' on German trade moving through the Netherlands, and the geographical location of intervention storage facilities being prime examples.

In an attempt to clarify the actual financial situation of the Community and individual member-states as regards developments within the CAP, Table 6 has been drawn up for the EC and some individual countries. The first section of this 'agricultural budget' shows all types of expenditure in gross terms (except for net MCA expenditure included in the 'other' category; this item may be positive or negative depending on the pattern of trade and the green rates of exchange in force). The final figure in this section therefore gives the effective gross expenditure under the Guarantee section of FEOGA, and represents the full sum which must be financed to pay for the main elements of the CAP. Since export refunds and intervention expenditures have been ascribed on the basis of national production and consumption levels, the country-specific figures relate to the location of the final beneficiaries, thus avoiding the 'Rotterdam-Antwerp effect' referred to above.

In the second section of the Table, sources of revenue arising from specifically agricultural activities - import levies on farm products and internal EC production levies - are reported along similar lines. Subtracting the total of such income from gross expenditure, there remains the net expenditure on agricultural support under the CAP. Increases in this net expenditure have to be financed by further subventions from non-agricultural sources of funds, i.e. customs duties on manufactured goods and the VAT-based revenues. The former are effectively fixed under international rules, and hence extra requirements will be met from the VAT-based source. Thus, in Table 6, the net expenditure total for the EC is apportioned among the member-states according to their VAT payments, so that while at EC level the agricultural budget balances exactly, individual member states may contribute more or less than their net agricultural receipts, as measured by their 'FEOGA balance'.

Further calculations are possible to arrive at a fuller measure of the foreign exchange costs and benefits of the CAP to member states. Trade in farm products between EC countries is carried on at the relatively high prices supported by the CAP rather than at the generally lower prices ruling in world trade. If the prices and quantities involved are estimated, they can be used to compute the extra benefits accruing to exporters and the extra costs imposed on importers through such intra-EC trade - the 'preferential trade effect'. Adding these non-budgetary items to the governmental balance described previously yields the 'CAP balance' for each member state - a more complete measure of the effect of belonging to the EC. Alternatively, the balance of trade in CAP products, i.e. the net loss or gain experienced by a country in buying and selling such commodities before border taxes or subsidies, may be added to the FEOGA balance to yield the overall influence on the balance of payments.

While it is suggested that Table 6 gives a clearer and fuller picture of the financial effects of the CAP on the Community and member states than most published figures, a few caveats are in order. First, a certain amount of estimation - of trade flows and of effective world prices - has been involved in the Table's compilation, due to the lack of up-to-date or reliable figures. Second, all farm products are not treated equally: individual calculations have been carried out for the sixteen main CAP products, but FEOGA expenditure on the remainder has been estimated as a total. Third, non-CAP products, such as potatoes and cereal 'substitutes', are excluded, so that the Table omits these parts of the overall economic and financial positions of member-states and the Community as a whole in the agricultural sector of their economies.

5. Projections

In order to provide budget figures for future years, projections have been made of the physical quantities of agricultural products produced, consumed and traded by the Community over the period up to 1988. Specifically, separate projections have been made for the tonnages of usable production and of total utilisation (i.e. consumption at the first stage beyond the farm gate, by direct human use, manufacturing use, or as animal feed) in each member state of the EC. These projections are based on national data from 1976 to the most recent year available on a consistent basis (usually 1981 or estimated 1982 for production, 1980 for utilisation). Trade with third countries has also been projected for each member state, again based on available data since 1976.

Before their use in projections, production and utilisation data are adjusted for changes in real price levels to remove those changes in quantity which are a consequence of movements in prices only. Intervention or equivalent prices are deflated by a GNP/GDP deflator, and multiplied by the ratio of market and 'green' exchange rates with the ECU. The changes in real prices between 1976 and 1982 thus calculated are reported for the EC as a whole in Table 7. Individual countries have experienced slightly different changes due to the altering exchange-rate ratio referred to. The resulting real price movements are then applied to supply and demand matrices of direct and cross price elasticities (Table 8). These elasticities are identical to the ones used in the Newcastle CAP model when analysing the effect of policy changes, and have been selected on a judgemental basis from available literature on the supply and demand responses of the various sectors of European agriculture. By and large, the elasticities are identical across countries, but in a few cases, national coefficients are used for the direct elasticities, and the cross-elasticities adjusted accordingly. The effect of the adjustments produced by the use of the elasticities is to convert the historical time series of production or utilisation data to a constant-real-price basis. Since real prices have generally declined since 1976, such an adjustment results in an estimated growth in production greater than that which actually occurred, and a static consumption pattern is converted into a decline.

Having obtained a series at constant real prices, a straight-line least-squares regression is fitted to the data, with weights proportional to each value's position in the series (i.e. 1,2,3,...., starting with the 1976 value) in order to place greatest emphasis on the more recent information. The effect of this procedure is particularly important for certain crop production series where the values for 1976 and 1977 are severely affected by the drought of those years. Despite this precaution, the growth rates produced by this method were not always plausible for use in projection over the next five years (e.g. over 9 per cent per year for wheat production in the UK and for maize in Germany and France). This may be due to the use of excessively high direct price elasticities or over-small cross-price elasticities in the price adjustment procedure described above. The available evidence on these coefficients is however mixed (Colman; USDA; Longmire). Consequently, annual percentage change-rate constraints (positive and negative) were placed on each individual projected 1988 value, based on the value fitted to the last 'known' point.

Table 9 shows the maximum and calculated projected rates of change for the production and utilisation of each commodity to 1988, and reports the countries to which the constraints have been applied. Projected rates of growth for the production of the main cereal crops lie between 2.5 and 4.5 per cent per year, and would be higher but for constraints on certain countries, particularly the UK. Similarly, projections of the utilisation of wheat and barley have been constrained to 0.5 per cent per year, though here the affected countries are fewer and generally smaller. EC supplies of livestock products are also less affected by constraints, with the exception of butter in the UK, but consumption of these products is more severely influenced,especially that of milk products. The frequent occurrence of Greece in Table 9 is noteworthy, but it is not certain to what extent this is due to unusually high rates of change over the period up to and including entry into the CAP, or to defects in the limited data base available for that country.

Tables 10 and 11 show the projections alongside a historical data base to 1982. It is difficult to compare these results with alternative forecasts due to the different classifications and time-bases on which these have been made. However the EC 'Guidelines' document projects total cereals production in 1988/89 at about 143 million tonnes, significantly less than the present estimate of 151 million tonnes, and utilisation at around 122 million tonnes, slightly over the present projection. More recent figures from a commercial trading firm (Stoehr) give slightly higher estimates for 1990. For sugar, the Commission did not offer forecasts of production, but presumed consumption to hold steady at about 9.6 million tonnes rather than the decline shown in Table 11. The present projections for beef and veal are considerably lower than the Commission estimates of 7.8 - 8.2 million tonnes production and 7.4 million tonnes consumption. However, the latter figure did not appear to take into account the fall in consumption in 1981/82. Similarly, the current production projection of 6.9 million tonnes may be too gloomy, and a return to a longer-run trend is possible from the recent decline. Both these forecasts are particularly dependent on more fundamental factors - the beef 'cycle' and the relative profitability of crop and meat prices in the case of production, and the level of general economic prosperity for consumption. For milk production, the present estimate of 114 million tonnes by 1988 is significantly higher than the Commission's estimated range of 104 - 108 million tonnes, which has generally been considered too low (e.g. Hubbard). The milk consumption estimates are in line with those of the Commission in reflecting a slow overall rate of growth.

Trade data is inherently more variable (and unreliable) than information on supplies and consumption levels, due to discrepancies between different national systems of recording movements of goods between countries, and difficulties over classification and time specification. Consequently, in this case, the original data was not adjusted for real price changes, and the projections were taken as the value fitted by the weighted straight-line regression to the last 'known' data point. In effect, trade between each Community member state and the rest of the world is assumed to continue at a level close to that of the period around 1980.

Overall, then, the results obtained by an admittedly crude method are not intuitively unsatisfactory. A more careful analysis of the factors affecting the production and consumption of each commodity would no doubt lead to more plausible results at individual country level. However, the exercise is only part of a larger whole, and time and manpower resources did not permit a more detailed approach. It can at least be argued that the use of the elasticity matrices and a common data base has ensured a measure of internal consistency between the projections which would otherwise be difficult to maintain. Moreover, the development of a relatively straightforward computational procedure has enabled a good deal of trial and error to be undertaken in the process. The results in Table 9, as well as the projections themselves, act as a monitor on what would otherwise be a 'black-box' technique devoid of judgemental input at various stages.

It needs to be emphasised that the results in Tables 10 and 11 are projections based on the continuation of real prices at their 1982 levels. Such constant-real-price estimates reflect underlying supply and demand movements which would be experienced if farmers and consumers experienced price rises equal to the rates of inflation in all their other revenues and costs. Table 8 makes it clear that real CAP commodity prices have in fact fallen since 1976, and part at least of this decline is due to the 'prudent' price policy advocated by the Commission and pursued erratically by the Council of Ministers. Given the difficulty of maintaining this policy each year, it seems simplest in the present exercise to provide projections based on a continuation, rather than an uncertain modification, of the present economic environment facing EC agricultural producers and consumers under the CAP.

6. Results

The results of calculating agricultural budgets on the lines explained in Section 5 for the production and utilisation positions projected for the years 1983 and 1988 are shown in Tables 12 and 13. It should be recalled that these figures incorporate not only the trend projections of yields and consumption rates but also implicit assumptions about the continuation of the world supply/demand position experienced at the time of writing, and of EC policies towards the CAP. Specifically, changes in world prices in response to external factors are ignored, only those resulting from increased

EC exports being allowed for in the estimation. The EC is assumed to continue price support for CAP products at the same levels, in real terms, as in 1982, and to subsidise the export of surplus production rather than build up unusually high storage quantities or adopt alternative methods of disposal. While it is clear that any of these assumptions may break down in practice over the next few years, the relatively stable world trading situation for most commodities during the 1980s so far, and the robustness of the CAP under continuing pressures to reform it, provide some assurance that these conditions are not unrealistic in the present projection exercise.

Table 12 shows that, at EC level, gross FEOGA guarantee expenditure increases by 37 per cent between 1983 and 1988, from 16 to 22 billion ECU, as surplus production builds up, especially in cereals, where the exported quantity almost doubles. Though intervention expenditure on internal subsidies on production, consumption and storage increases only slightly under unchanged policies, this merely reflects a continued long-term policy of disposing of unwanted produce on the world market, and the consequences for export refund expenditure on a wide variety of commodities are obvious. Since levy income is practically unchanged, net expenditure increases even more in relative terms, by 43 per cent from 14 to 20 billion ECU. The only aspect offering any consolation is that physical surpluses of, and hence expenditure on, livestock products such as meat and milk, increase by rather smaller amounts than those for crops. This is, of course, unlikely to remain true if cereal prices are reduced without corresponding reductions in the livestock sector.

As explained in Section 2 current sources of Community finance are already almost exhausted. The question of the feasibility of such trend continuations in terms of existing institutional constraints must therefore be raised. Increases in agricultural expenditure of the order of those in Table 12 will require extra resources to be obtained. The simplest method of doing this in principle is to raise the VAT limit of one per cent. An extra 6 billion ECU represents a VAT rate of about 0.4 per cent, so that it appears that increases in the limit from 1 per cent to 1.5 or 2 per cent, as suggested by some, would permit the continuation of the present type of agricultural policy for at least the remainder of the decade, and perhaps beyond. Agreement on such a rise appears possible, Germany and the United Kingdom having apparently modified their position recently from outright opposition to wary consideration as a price to pay for short-term agreement on budget rebates, but the finance ministers of both countries, and particularly those of the latter, will try to ensure that the extra funds are not in fact directed to agriculture, but to other policies more closely attuned to their social and economic problems.

The member-state results are shown in Table 13, where the national expenditure figures reflect the changing balances of export refund expenditure and import levy income arising from the trading movements of each member state. Of particular interest is the high growth rate in net expenditure in the UK, which in recent years (and on the present basis of calculation) has become positive, as the UK's self-supply ratio in the main CAP products rises beyond the 80 per cent mark. Once VAT-based contributions to finance the large EC total net expenditure are accounted for, Germany and the UK emerge as the financial underwriters of the price-supporting mechanism of the CAP, with the latter paying about twice as much - over 3 billion ECU - as the former. On the other side of the fence, France and Denmark appear as the main beneficiaries on the FEOGA balance. Addition of the preferential trade effect in order to account for the extra benefit or cost of intra-EC trade in CAP products shows some interesting shifts in the pattern of balances, with Italy joining Germany and the UK as losers, and the Netherlands joining France as a substantial gainer. Thus the more complete 'CAP balance' reinforces and clarifies the positions of all the major EC member states. Adding the FEOGA balances to the trade balances in CAP products for each country to obtain the 'payments balances' shows marked overall improvement in the positions of France and the Netherlands, with some reduction in the UK's deficit. For most other countries, the payments balance remains remarkably stable.

The overall conclusion from these results must be that the continuation of the CAP in its present form, under unchanged world conditions, will worsen, perhaps to breaking point, the pattern of unequal costs and benefits arising from the policy. These patterns can be analysed at several levels as shown in Table 13. First, in terms of gross expenditure, which reflects direct flows of Community funds to farmers and other agricultural operators, the sums involved increase by at least 25 per cent in real terms for all countries except Greece, and by nearly 40 per cent for France, Italy and the United Kingdom, representing further channelling of public financial resources towards an already well-protected sector of the European economy. Net of EC income derived from import levies and from producers themselves, expenditures rise by even larger percentages. Thus the burden on consumers and taxpayers of supporting farming through the present CAP system of price support during a period of increasing physical surpluses will become considerably greater than at present. Whether this situation will be allowed to come about will depend on political factors beyond the scope of this paper. However, the financial hurdle of the one per cent limit on VAT-based contributions represents a point at which explicit recognition of the increasing cost of the CAP will be required.

Second, accepting the continuation of the current financial mechanisms of the EC budget, the pattern of national balances of payments from, and contributions to, the FEOGA section of CAP shows no radical change between 1983 and 1988 under present trends. The United Kingdom continues to pay around two-thirds of the net FEOGA payments to beneficiary countries, with Germany about one-third, and a small contribution from Greece. (It will be recalled that the present budgetary calculations have been carried out on the guarantee section of the CAP, and without consideration of non-agricultural EC expenditures or financial refunds to specific countries.) Amongst the beneficiaries, Denmark continues to receive about a third of the net gains, and France about a quarter, although Italy increases its share at the expense (in relative terms) of the Netherlands and Eire. Thus, in general, the pattern of resource flows between the public authorities of member states arising from the operation of the CAP continues to favour countries with economies weighted towards farming. Again, whether this 'bias' in the CAP will continue to be tolerated depends on the relative political weights placed by the parties concerned on other EC policies, including budgetary adjustments, and on EC membership in itself.

Third, once the effects of preferential trade in farm products within the Community have been taken into account, the pattern of costs and benefits between countries - the set of 'CAP balances' - remains one in which four countries - France, the Netherlands, Eire and Denmark - are the gainers, with the first two countries benefitting almost equally, while losses increase to all other member-states except Italy. With this exception, the inclusion of the trade effects serves to magnify rather than alter the basic pattern of economic costs and benefits of the policy.

Some comments on individual countries can be made. It is true that, by increasing its own agricultural self-sufficiency under the stimulus of high support prices, the United Kingdom is itself now a beneficiary in its own right from the CAP budget. However, the need to finance a rise of nearly half in real total EC guarantee expenditure on the basis of VAT over the next 5 years must give rise to as serious difficulties as those encountered in 1979-80 when the recent package of special rebates to the UK was negotiated. Re-negotiation of similar treatment must take place with certain additional factors now having to be recognised. First, the other member-states have already shown themselves unwilling to repeat an exercise which in the event proved more expensive and longer-lasting than originally envisaged. Second, the EC budget as a whole is under serious threat, and leeway no longer exists for straightforward extra Community expenditure being directed to Britain. Third, the current surplus of FEOGA expenditure on agriculture over import and producer levies enjoyed by the UK may be exploited as evidence that the CAP is no longer as distortive as in the days when UK farming had not expanded to the current extent.

The Republic of Ireland also shows some interesting features in the present calculations, in that, although a country with a high agricultural self-supply ratio, the projections do not lead to any significant increase in its current benefit level, as measured by any of the suggested criteria. This arises from the continuation of the rather low ratio of livestock product prices to crop prices, particularly for beef and butter. In contrast, countries with large cereal sectors exhibit marked increases in net benefits (at least in purely agricultural terms) as the EC experiences the consequences of this already-admitted bias in its price structure.

7. Summary and Conclusions

The objective of this discussion paper is to explain the growth of agricultural spending in the EC over the past decade and to provide forecasts for the year 1988, the end of the European Commission's first period of production guidelines. The first two main sections of the paper deals with the sources of revenue available for the financing of the overall budget of the Community, and with the details of expenditure on agricultural guarantees under the FEOGA section of the budget, which is responsible for the bulk of spending on the Common Agricultural Policy. It is noted that, among the three major sources of revenue - common customs duties, agricultural levies, and VAT contributions - the first two are not expected to increase significantly, and may even fall, while the VAT contributions have been approaching, albeit erratically, the upper limit of one per cent of total relevant consumer expenditure. FEOGA expenditure has grown from about 5 billion ECU in the mid-1970s to an estimated 14 billion ECU in 1983. The bulk of this sum is directed at the milk sector, but rapid growth has characterised several other components, including cereals, oils and fats, and wine. In terms of growth rates, total available funds have been rising at around 11 per cent per year since the mid-1970s, while the growth of FEOGA expenditure has fluctuated around 15-16 per cent per year. The potential for a budgetary crisis of severe proportions is clear, even before additional pressures from outside farming, such as national financial rebates and programmes for other sectors, are taken into account.

Section 4 of the paper explained and constructed a special set of accounts for the presentation of the agricultural features of the EC budget. Gross expenditure on export refunds, market intervention, and on monetary adjustments, is offset by income from import levies and producer levies, yielding net expenditure on agricultural guarantees under the CAP for each member-state and for the Community as a whole. Further calculations can then be performed to obtain the national balances of net costs and benefits after account is taken, respectively of VAT-based contribution, intra-EC trade in farm products, and overall balances of trade. It is suggested that such budgets give a clearer picture of the impact of the CAP on the EC budget and on national balances of foreign exchange, than the conventional published EC accounts, despite the need for certain assumptions, and the approximate treatment of specific features.

The following section of the paper described the procedure underlying the calculation of projections of production and consumption quantities for 16 commodities in each member-state for the years up to 1988. After adjustment for real price changes prior to 1982 (taken as the base year), simple trend values, constrained by exogenously-chosen maximum allowable rates of change, are used to produce the 1988 projections employed in the remainder of the paper. By and large, the forecasts do not differ greatly from other comparable figures, although the beef projections appear rather low following the depression in this sector in 1981/2, and the milk production estimates are rather higher than the Commission's published figures. The overall EC self-supply ratio in the products covered by the calculations rises from a value of 108 in 1983 to 114 in 1988, with cereals at 127 and sugar at 168.

The budgetary implications of these projections, which assume unchanged policies, are reported in the penultimate section. Both gross and net expenditures at EC level are seen to rise by around 40 per cent in real terms between 1983 and 1988, leading to a total requirement for external financing of about 20 billion ECU in 1988. The commodity group showing the greatest relative rise is cereals, but the milk sector still retains its predominant share of total gross expenditure. At country level, the essential pattern of financial and economic costs and benefits of the CAP remains unaltered and indeed emphasised, though the United Kingdom improves its position in terms of direct agricultural flows, and the less expansive trends in the beef sector militates against Eire. Other agriculturally-strong countries such as France, Denmark and the Netherlands show further substantial gains on most measures of net effect. Italy, Belgium/Luxembourg and Greece show no improvement, or some deterioration in position over the projection period.

This paper has not been primarily concerned with the reason for past or future changes in policy, whether internal to the CAP, or at the overall budgetary level. Rather, it has attempted to quantify the implications of recent trends in the production and utilisation of farm products for the agricultural part of the EC budget. The total Community budget for 1983 projected by the Commission in late 1982 was 23 billion ECU, or just larger than the 1988 FEOGA guarantee expenditure figure forecast in this paper for 1988. Thus, within the next five years, agricultural expenditures would completely exhaust EC revenues raised at the present level. Since the VAT percentage for 1982 was 0.92, or only 0.08 below the maximum of 1.00, the scope for raising further sums through the existing mechanism is virtually restricted to the underlying growth of consumer expenditure in the Community, offset by any fall in customs duties due to trade protectionism. It seems unlikely that such expenditure will grow by more than 2 per cent in real terms in the five years under consideration, to a level of about 24.5 billion ECU at 1982 prices. Indeed, the outcome could be a good deal less, depending on the results of world-wide efforts to end the current recession. Only about a quarter of the projected 43 per cent rise in agricultural expenditure would be capable of inclusion in an expanded version of the existing budget. If other EC programmes could be reduced in size to permit growth in the FEOGA section to the suggested 20 billion ECU, about 4.5 billion would remain for non-agricultural purposes, or half the present level. This is clearly impossible in political terms.

Put the other way round, since resources are practically exhausted at present, continuation of the trends described in this paper will almost certainly lead to exhaustion of the budget in 1984. It is true that unusual production conditions, such as poor harvests in 1983 and 1984, or unforeseen events on the world market, or even emergency action by the Commission to minimise cash expenditure on storable surpluses,could postpone such an event for a time, as happened in 1980/81. But it seems inevitable that, in the absence of substantial changes in the CAP, or in the structure of EC revenues, a 'final' budgetary crisis will develop in the next 12 months. The first steps towards avoiding this crisis have been taken by agriculture ministers in their 1983 price agreement, when they agreed to relatively low common price proposals from the Commission. However, monetary factors have already undermined the apparent rigour of the farm ministers' decision and, through the green-money system, are an ever-present threat to expenditure control. On the budget question, the Commission has published its ideas for new revenue sources. A 'simple' raising of the one per cent VAT limit to 1.5 or 2 per cent would avert the crisis for a number of years, but some member states have strong incentives to use the current budgetary pressure to force the implementation of structural changes in the finances and policies of the community. It remains to be seen if heads of government can reach accord on the budgetary proposals before the pressure of events overtakes them.

Once again, then, the Common Agricultural Policy appears to be approaching a stage at which fundamental decisions will have to be taken. The experience of the last five or ten years breeds caution about predicting the timing or nature of these decisions. But the approach of the present paper, relying on the underlying technological and behavioural forces in agricultural production, leaves little room for financial or political manoeuvring. Of the various extraneous factors which could substantially alter the medium-term implications of the results, few encourage optimism. It seems more likely that the day of reckoning will be advanced rather than postponed by such issues as the enlargement of the Community, price fluctuations and relations with major partners in world trade, or unexpected events amongst EC farms or consumers. The future should be approached with apprehension rather than confidence.

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TABLE 1 - EC Revenue and FEOGA Expenditure, 1975-83

(billion ECU)

				RESOURCES					FEOGA EXPENDITURE[2]		
	Custom Duties	Ordinary Levies	Sugar Levies	VAT[1] etc.	Total	VAT available	Total	Guarantee	Guidance	Total	Net of Levies
1975	3.0	0.5	0.1	2.0	6.3	-	-	4.5	0.2	4.7	4.1
1976	4.1	1.0	0.1	2.5	8.5	-	-	5.6	0.2	5.8	4.7
1977	3.7	1.8	0.3	2.6	9.6	-	-	6.8	0.3	7.1	5.0
1978	4.4	1.9	0.4	5.3	12.2	8.3	15.2	8.7	0.3	9.0	6.7
1979	5.2	1.7	0.5	7.0	14.6	8.9	17.5	10.4	0.4	10.8	8.7
1980	5.9	1.5	0.5	7.3	16.2	10.0	18.9	11.3	0.6	11.9	9.9
1981	6.4	1.3	0.5	9.3	17.5	10.0	20.0	10.9	0.6	11.6	9.8
1982[3]	6.9	1.9	0.8	12.2	21.8	13.3	22.9	13.3	0.8	14.1	11.4
1983[4]	7.6	1.6	1.0	10.8	21.0	14.6	24.8	14.1	0.7	14.7	12.2

SOURCE: E.C. Commission. 'Financing the Market Side of the Common Agricultural Policy EAGGF - Guarantee'. Green Europe No. 182 (1981), Annexes 5, 6 and Agricultural Situation in the Community, 1982, pp 158-159

NOTES : (1) Includes financial contributions linked to GNP in earlier years and from Greece since 1980.

(2) Net of milk co-responsibility levies and MCA revenue.

(3) Provisional.

(4) Draft 1983 budget.

TABLE 2 - FEOGA Guarantee Expenditure by Commodity Sector, 1976-83

	Cereals & rice	Milk products	Oils & fats	Sugar	Meat & eggs	Fruit & vegetables	Wine	Other(1)	Compensatory amounts(2)	Total
1976	674	2278	247	229	660	185	134	339	840	5587
1977	643	2924	248	598	531	178	90	407	1190	6830
1978	1130	4015	325	878	722	101	64	531	807	8672
1979	1606	4527	606	940	932	443	62	616	709	10441
1980	1728	4752	687	575	1617	687	300	669	299	11315
1981	1943	3343	1025	767	1867	641	459	856	238	11141
1982	2099	4018	1213	1225	1914	853	416	1305	278	13320
1983(3)	2255	4013	1443	1536	1825	932	469	1283	241	14087

SOURCE : EC Commission. Agricultural Situation in the Community, (1979, pp 254-5 and 1982, pp 268-9).

NOTES: (1) Tobacco, fishery products, other intervention products and non-Annex II products.

(2) Includes accessionary amounts, and net of monetary compensatory amount revenue.

(3) Draft 1983 budget.

TABLE 3 - Self-supply Ratios in Certain Agricultural Products, 1969 and 1974-81

(EC9)

Year(1)	Total Cereals (exc.rice)	Wheat (Total)	Barley	Grain Maize	Sugar	Butter	Skim Milk Powder	Total Meat	Beef & Veal	Sheep-meat	Oils and Fats
1969	86	94	103	45	82	91	140	93	90	56	-
1974	92	104	106	56	91	101	137	95	91	54	93
1975	91	106	104	56	95	100	135	97	100	65	42
1976	88	106	101	49	98	104	126	97	99	64	41
1977	87	100	103	50	111	111	110	96	97	64	42
1978	91	105	106	52	117	111	110	97	97	65	44
1979	97	108	112	60	124	119	107	98	100	67	41
1980	101	116	113	62	125	119	115	99	100	78	110
1981(2)	105	123	113	65	159	120	-	-	104	80	-

SOURCE: EC Commission. Agricultural Situation in the Community, annual issues

NOTES: (1) For cereals and sugar, the crop-year ending in the calendar year specified.

(2) Calculated from supply/demand balance sheets.

TABLE 4 - FEOGA Guarantee Expenditure[1] by Economic Category, 1976-83

	Export Refunds		Intervention						FEOGA Guarantee Total
			Storage and Withdrawals		Price Subsidies & Guidance Premiums		Total		
	MECU	%	MECU	%	MECU	%	MECU	%	MECU
1976[2]	1666	29.9	1525	27.4	2378	42.7	3904	70.1	5570
1977[2]	2704	40.6	1227	18.4	2752	41.3	3959	59.4	6662
1978	3750	43.2	2034	23.5	2889	33.3	4923	56.8	8673
1979	4982	47.7	1774	17.0	3685	35.3	5459	52.3	10441
1980	5695	50.3	1915	16.9	3705	32.7	5620	49.7	11315
1981	5208	46.7	2068	18.6	3865	34.7	5933	53.3	11141
1982	6239	46.8	2159	16.2	4922	37.0	7081	53.2	13320
1983[3]	6256	44.4	-	-	-	-	7831	55.6	14087

SOURCE: EC Commission. Agricultural Situation in the Community, annual issues.

NOTES: (1) Includes ACAs and MCAs

(2) Mua, not MECU.

(3) Draft 1983 budget: the intervention total is not completely allocable between components.

TABLE 5 - Growth in EC Revenues and FEOGA Expenditure to 1982

-average annual percentage rates of growth -

Revenue (1)

Customs Duties	11.5
Ordinary levies	4.8
Sugar levies	29.9
GNP/VAT contributions	31.4
Total:	17.9
Available VAT (2)	12.5
Available total (2)	10.8

FEOGA Expenditure (1)

Guarantee	15.4
Guidance	22.8
Total:	15.7
Total net of levies	16.3

FEOGA Guarantee Expenditure

By commodity sector: (3)	
- cereals	20.8
- milk products	5.5
- oils and fats	34.7
- sugar	16.6
- meat and eggs	24.6
- fruit and vegetables	40.7
- wine	34.1
- other	25.1
- compensatory amounts	-21.8
By economic nature (4)	
- export refunds	13.6
- storage and withdrawals	1.5
- price subsidies and guidance premiums	14.2
- total intervention	9.5

NOTES: (1) 1975-77 to 1982.
(2) 1978 to 1982. See Table 1 and related text.
(3) 1976-78 to 1982.
(4) 1978 to 1982.

TABLE 6 - EC Agricultural Budget (billion ECU)

					1982 (at 1982 prices)
Expenditure	Germany	France	United Kingdom	Others	EC 10
Export refunds	1.3	2.4	0.2	2.8	6.8
Intervention	1.0	1.0	0.7	1.7	4.4
Other	0.7	0.9	0.2	2.1	3.8
Gross Expenditure (1)	3.0	4.3	1.2	6.5	15.0
Import levies	-0.3	-0.1	-0.5	-0.6	-1.5
Producer levies	-0.2	-0.2	-0.1	-0.2	-0.8
Income (2)	-0.5	-0.3	-0.6	-0.8	-2.2
Net expenditure (3 = 1-2)	2.5	4.0	0.6	5.7	12.8
VAT-based contribution (4)	-3.5	-3.1	-2.8	-3.4	-12.8
FEGOA balance (5 = 3 + 4)	-1.0	+0.9	-2.2	+2.4	0
Preferential trade effect (6)	-0.8	+1.1	-0.7	+0.4	0
CAP balance (7 = 5 + 6)	-1.8	+2.0	-2.9	+2.8	0
Trade balance (8)	-1.0	+5.6	-2.6	+2.8	+4.9
Payments balance (9 = 5 + 8)	-2.0	+6.5	-4.8	+5.2	+4.9
(Self-supply ratio)	(99.7)	(128.3)	(82.8)	(111.2)	(107.0)

SOURCE : Newcastle CAP Model. Figures may not add due to rounding.

TABLE 7 - Changes in Real EC Agricultural Support Prices 1976-1982

Common Wheat	-10.0
Durum Wheat	-13.9
Barley	-10.0
Maize	-6.7
Sugar	-9.4
Pigmeat	-2.4
Beef and Veal	-5.7
Sheepmeat	+8.9
Milk	-4.4
Olive Oil	-7.6

SOURCE : Newcastle CAP model

TABLE 8 – Selected Supply and Demand Price Elasticities

Percentage change response to one per cent price change in quantity of:

Price of:	Supply							Demand						
	CW	DW	B	S	P	BV	M	CW	DW	B	S	P	BV	M
Common wheat (CW)	1.0	–	–0.1	–0.1	–	–	–	–1.0	–	0.1	–	–	–	–
Durum wheat (DW)	–	1.0	–	–	–	–	–	–	–0.2	–	–	–	–	–
Barley (B)	–0.1	–	1.0	–0.1	–0.75	–0.2	–0.5	0.4	–	–2.5	–	–	–	–
Sugar (S)	–0.1	–	–0.1	1.0	–	–	–	–	–	–	–0.5	–	–	–
Pigmeat (P)	–	–	–	–	1.0	–	–	0.15	–	0.3	–	–0.5	0.2	–
Beef & Veal (BV)	–	–	–	–	–	1.0	–	0.1	–	0.2	–	0.3	–0.5	–
Milk (M)	–0.25	–	–0.25	–	–	0.5	1.0	0.08	–	0.16	–	–	–	–0.15(4)
Total(2)	0.35	1.0	0.35	0.6	0.05	1.2	0.7	–0.09	–0.2	–1.1	–0.5	–0.22	–0.18	–0.13(4)
Aggregate(3)				0.55							–0.38			

SOURCE : Newcastle CAP Model

NOTES:

(1) Values given are those used in absence of more reliable national estimates.

(2) The 'total' coefficients give the response to a one per cent change in all commodities included in the model, i.e. those specified above plus: maize, other cereals, poultry meat, eggs, sheepmeat, milk products and olive oil, and are calculated by addition of the completed column above each coefficient.

(3) The 'aggregate' coefficients give the response to a one per cent change in all commodities, the individual commodity responses being weighted according to intervention value.

(4) These two coefficients refer to consumption of milk in liquid form. Direct price elasticities of demand for butter, skim milk powder and cheese are each set at –0.5. Production of these commodities reflects changes in total milk production in excess of liquid consumption.

TABLE 9 - Projection Constraints to 1988

Commodity	Production Limit(1)	Production Actual(2)	Production Countries(3)	Utilisation Limit(1)	Utilisation Actual(2)	Utilisation Countries(3)
Common Wheat	4.0	3.8	UK, Dk, Gr	0.5	0.5	N, Gr
Durum Wheat	4.0	4.3	Gr	2.0	1.4	G, N, B
Barley	4.0	2.0	I, Gr	0.5	0.2	B, Gr
Maize	4.0	3.2	G, F, B, Gr	0.5	-0.4	B, UK, Gr
Other cereals	4.0	-1.9	N, B, UK, E, Dk, Gr	0.5	-0.2	B, UK, E, Dk
Sugar	4.0	3.0	Gr	2.0	0.4	-
Pigmeat	2.0	1.4	Gr	2.0	1.6	Gr
Poultrymeat	2.0	1.9	-	2.0	2.0	-
Eggs	4.0	0.5	N, Gr	2.0	0.6	-
Beef and Veal	4.0	0.4	-	2.0	-0.6	Gr
Sheepmeat	4.0	2.7	-	2.0	1.2	N, Gr
Milk	4.0	2.4	-	2.0	0.4	Gr
Butter	4.0	1.5	UK, Gr	2.0	-0.4	N
Skim milk powder	4.0	-0.1	Dk, Gr	4.0	-2.5	G, N, B, UK, E, Dk
Cheese	4.0	3.2	Dk, Gr	2.0	1.9	Gr
Olive oil	4.0	2.2	-	2.0	1.3	F

SOURCE: Newcastle CAP Model.

NOTES: (1) Maximum permitted annual change in national production and utilisation levels from value fitted to last 'known' data point.

(2) Overall EC annual rate of change after application of constraints. For some meats, MLC 1983 estimates were used as last 'known' data.

(3) Countries to which constraints apply.

TABLE 10 - EC Production Trends and Projections

	1976(1)	1978	1980	1982(2)	1983(2)	1988(2)
Common wheat	35.6	46.0	50.1	54.5	56.0	66.4
Durum wheat	3.6	4.3	4.7	4.6	4.9	5.9
Barley	29.9	40.4	40.3	41.2	42.1	46.4
Maize	11.1	16.9	17.6	19.5	20.4	23.7
Other Cereals	10.2	12.7	11.1	10.0	9.8	8.9
Total Cereals	90.4	120.2	124.7	130.0	133.3	151.2
Sugar	10.0	11.8(1)	12.3	13.7	14.3	16.5
Pigmeat	8.5	9.3(1)	10.1	10.2	10.5	11.3
Poultrymeat	3.3	3.6(1)	4.0	4.4	4.4	4.8
Eggs	3.8	4.1	4.1	4.2	4.2	4.3
Beef and Veal	6.5	6.4	7.7	6.6	6.8	6.9
Sheepmeat	0.5	0.6	0.7	0.7	0.7	0.8
Milk	83.8	91.6	96.4	99.6	102.7	115.0
Butter	1.8	2.0	2.0	2.0	2.1	2.1
Skim Milk Powder	2.1	2.2	2.1	2.1	2.1	2.1
Cheese	3.0	3.4	3.7	4.0	4.1	4.7
Olive Oil	0.3	0.7	0.7	0.8	0.8	0.9

SOURCE: Newcastle CAP Model projections.

NOTES: (1) Excluding Greece.

(2) 1983 and 1988 values are projections. 1982 values are constant-real-price projections except for (most) cereals.

TABLE 11 - EC Utilisation Trends and Projections

	1976 (1)	1978 (1)	1980	1982 (2)	1983 (2)	1988 (2)
Common wheat	31.4	33.7	39.9	39.7	40.9	48.6
Durum wheat	4.1	4.0	5.2	5.5	5.2	6.7
Barley	30.7	33.2	36.6	33.9	35.3	35.7
Maize	28.0	27.7	27.0	25.0	25.3	24.8
Other Cereals	10.6	11.6	10.3	9.9	10.4	10.3
Total Cereals	104.8	110.2	119.0	114.0	117.1	118.5
Sugar	9.6	8.9	9.2	9.3	9.6	9.8
Pigmeat	8.5	9.3	10.1	10.2	10.3	11.1
Poultrymeat	3.2	3.5	3.8	3.9	4.0	4.4
Eggs	3.8	3.9	3.9	4.1	4.1	4.2
Beef and Veal	6.5	6.9	7.0	6.6	6.7	6.5
Sheepmeat	0.8	0.8	1.0	1.0	1.0	1.1
Liquid Milk	19.5	19.4	19.9	20.2	20.2	20.6
Butter	1.7	1.7	1.6	1.6	1.7	1.8
Skim Milk Powder	1.9	2.1	1.5	1.4	1.4	1.3
Cheese	3.0	3.3	3.4	3.6	3.6	4.0
Olive Oil	0.7	0.8	0.9	0.9	0.9	1.0

SOURCE: Newcastle CAP Model.

NOTES: (1) Excluding Greece for cereals, liquid milk, skim milk powder.

(2) 1982, 1983 and 1988 values are constant-real-price projections.

TABLE 12 - EC Agricultural Budget Projections, 1983 and 1988

(billion ECU at 1982 prices)

	1983	1988	% Change
Export refunds	7.3	10.6	+45
Intervention	4.4	4.6	+4
Other	4.3	6.9	+60
Gross Expenditure	16.1	22.1	+37
Import Levies	-1.4	-1.4	0
Producer Levies	-0.8	-0.8	0
Net Expenditure	13.9	19.9	+43
Gross Expenditure by Commodity Group			
Cereals	2.5	3.6	44
Sugar	2.2	2.8	27
Milk	4.8	6.1	27
Livestock	2.0	2.5	25
Self-supply Ratios			
Overall	108	114	
Cereals	113	127	
Sugar	149	168	
Milk	113	119	
Livestock	101	103	

TABLE 13 - EC Agricultural Budget Projections, 1983 and 1988, by Country

(billion ECU at 1982 prices)

	Germany		France		Italy		Netherlands		Belgium/Luxembourg	
	1983	1988	1983	1988	1983	1988	1983	1988	1983	1988
Gross expenditure	3.3	4.4	4.6	6.3	2.7	3.8	1.6	2.1	0.8	1.1
Net expenditure	2.8	3.9	4.2	6.0	2.2	3.4	1.4	1.9	0.7	1.0
VAT-based contribution	-3.8	-5.5	-3.3	-4.8	-1.8	-2.6	-0.7	-1.0	-0.6	-0.8
FEOGA Balance	-1.1	-1.6	0.9	1.2	0.4	0.8	0.7	0.9	0.1	0.2
Preferential trade effect	-0.8	-0.9	1.2	1.4	-1.9	-2.2	1.4	1.7	-0.3	-0.5
CAP Balance	-1.9	-2.5	2.1	2.6	-1.5	-1.4	2.2	2.6	-0.2	-0.3
Trade Balance	-0.9	-0.4	6.1	8.0	-5.1	-5.5	3.9	4.8	-0.2	-0.4
Payments balance	-2.0	-2.0	7.0	9.2	-4.7	-4.7	4.6	5.7	-0.1	-0.2
(Self-supply ratio)	(101)	(105)	(130)	(140)	(76)	(76)	(184)	(206)	(104)	(104)

	United Kingdom		Eire		Denmark		Greece		EC-10	
	1983	1988	1983	1988	1983	1988	1983	1988	1983	1988
Gross expenditure	1.3	1.8	0.3	0.4	1.5	2.0	0.2	0.2	16.1	22.1
Net expenditure	0.7	1.3	0.3	0.4	1.5	2.0	0.1	0.1	13.9	19.9
VAT-based contribution	-3.1	-4.4	-0.1	-0.2	-0.3	-0.4	-0.2	-0.3	-13.9	-19.9
FEOGA balance	-2.3	-3.1	0.2	0.2	1.2	1.6	-0.1	-0.2	-	-
Preferential trade effect	-0.6	-0.1	0.7	0.7	0.5	0.3	-0.2	-0.3	-	-
CAP balance	-2.9	-3.2	0.9	0.9	1.7	1.9	-0.3	-0.5	-	-
Trade balance	-2.3	-0.8	2.0	2.1	2.6	2.6	-0.5	-0.6	5.7	9.9
Payments balance	-4.6	-3.9	2.2	2.3	3.8	4.2	-0.6	-0.8	5.7	9.9
Self-supply ratio	(84)	(92)	(244)	(246)	(233)	(251)	(88)	(86)	(108)	(114)

SOURCE : Newcastle CAP Model, May 1983.

NOTES : Figures may not add due to rounding.

See text for explanation of budget items.

The Department of Agricultural Economics and the Department of Agricultural Marketing launched a new series of Discussion Papers in the Spring of 1982. The titles available are:

DP 1 Evaluation of 1982/83 Price Proposal for the CAP
Kenneth Thomson and Lionel Hubbard

DP 2 Forecasting EEC Support Prices
Christopher Ritson

DP 3 Cereals and the CAP
Kenneth Thomson

DP 4 CAP Budget Projections to 1988
Kenneth Thomson

DP 5 Herd Size and the Impact of Reducing EEC Dairy Support Prices
Lionel Hubbard

DP 6 The CAP for Fruit and Vegetables: Its Impact on Third Countries
Christopher Ritson and Alan Swinbank

DP 7 The Urban-Rural Income Gradient and the Pressure of Demand for Labour
Martin Whitby and Lionel Hubbard

Forthcoming titles are:

DP 8 The Effects of the 1983/84 CAP Price Agreement
Kenneth Thomson and David Harvey

DP 9 UK Agricultural Trade Since Entry into the European Community
Allan Buckwell

These papers are priced at £2.00 each (including postage and packing in the UK and Eire) and are available from the Department of Agricultural Marketing, The University, Newcastle upon Tyne, NE1 7RU, or by telephone on Newcastle (0632) 328511, extension 2932 (Agricultural Marketing) or extension 2900 (Agricultural Economics). Please make cheques payable to The University of Newcastle upon Tyne and send to the Department of Agricultural Marketing.