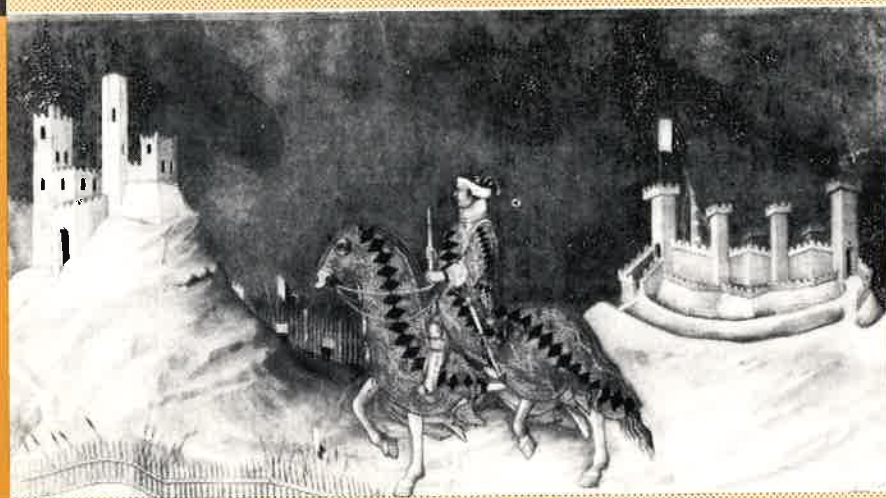
121

UNIVERSITÀ DEGLI STUDI DI SIENA

QUADERNI DEL DIPARTIMENTO
DI ECONOMIA POLITICA

Elisabetta Croci Angelini

COSTS AND BENEFITS OF THE COMMON AGRICULTURAL POLICY TO THE MEMBER COUNTRIES



QUADERNI DEL DIPARTIMENTO DI ECONOMIA POLITICA

Redazione: **Dipartimento di Economia Politica**, Piazza S. Francesco, 17 - 53100 Siena - tel.0577/298620

La Redazione ottempera agli obblighi previsti dall'Art.1 del D.L.L. 31.8.45 n.660

Le richieste di copie della presente pubblicazione dovranno essere indirizzate alla Redazione

I **Quaderni del Dipartimento di Economia Politica** dell'Università di Siena vengono pubblicati come servizio atto a favorire la tempestiva divulgazione di ricerche scientifiche originali, siano esse in forma provvisoria o definitiva. I **Quaderni** vengono regolarmente inviati a tutti gli istituti e dipartimenti italiani, a carattere economico, nonché a numerosi docenti e ricercatori universitari. Vengono altresì inviati ad enti e personalità italiane ed estere. L'accesso ai **Quaderni** è approvato dal Comitato scientifico, sentito il parere di un referee.

(Dal 1979 a tutto il 1987 la denominazione della presente Collana è stata: "**Quaderni dell'Istituto di Economia**". La numerazione progressiva rimane tuttavia la stessa).

Elisabetta Croci Angelini

COSTS AND BENEFITS OF THE COMMON AGRICULTURAL POLICY TO THE MEMBER COUNTRIES

Siena, dicembre 1990

Elisabetta Croci Angelini è Ricercatore nel Dipartimento di Economia Politica dell'Università di Siena

Abstract*

Several ways of assessing the costs and benefits of the Common Agricultural Policy to the member countries, which correspond to different meanings of this concept, are presented.

A disturbing inclination to confuse the effects of the CAP with those of EC membership is underlined, as well as a similar shortcut of applying to the common budget conclusions only appropriate to FEOGA expenditure and viceversa.

As the method chosen for the evaluation is crucial in determining accurate results, it is also emphasized how much a lack of correct information could be misleading in the decision-making process and could give rise to distorted evaluations, which may be rather prone to manipulation and are more likely to act to the benefit of sectoral vested interests than to the advantage of the whole society.

The paper argues that while budgetary figures are seldom likely to give a correct estimate of costs and benefits of the CAP to the member countries, due to the rules of financial solidarity, a more complete assessment is provided by figures based on member countries foreign trade in agricultural goods, evaluated at observed world market prices. Their validity does not depend on 'ad hoc' assumptions, but they are as much observable as budgetary figures.

The discussion devotes special attention to those situations, like Italian case, which are of particular interest as the country shifts from being net gainer to be a net loser according to the method used by the analysis.

* Paper presented at the EACES-AISSEC Conference, Verona (Italy) September, 27-29, 1990. Part of the interdisciplinary project "Futuri scenari dell'agricoltura italiana" INEA, Roma.

Introduction

Although the costs and benefits of the Common Agricultural Policy (CAP) have stimulated interest since the origin of the policy itself, the main debate about their definition and calculation arose between the end of the 1970s and the beginning of the 1980s.

The definition problem included such questions as "costs and benefits to whom?", the answer to which implies a choice in the aggregation level, which is crucial in order to characterize the results. At that time the most common choice was a disaggregation at the member state level and this choice will be retained here, too.

The calculation problem has been dealt with by several methods: either by referring to sheer budgetary figures, or by means of cost--benefit analysis, again either by the 'traditional' or by the 'new' approach. For various reasons, however, none of these methods has proved completely satisfactory.

Ten years on now since the apex of that debate, the lack of agreement on a single methodology able to assess these costs and benefits has given rise to a serious information problem whereby figures indicating some budgetary flows occurring between the EC and the member countries have too often been used for describing the costs and benefits of the CAP (and sometimes, all the more, of EC membership) to the member countries.

This situation has emerged mainly because, on the one hand, the EC does not publish official figures referring to the most common definition of costs and benefits of the CAP (i.e. at the member state level), while, on the other hand, all independent estimates have hardly achieved the same charisma as official figures, and their diffusion remains more or less restricted to academic circles and research institutions.

There is, however, a growing demand from the general public to know more about European matters, and in the absence of appropriate official figures the second best choice for the press is between correct unofficial and incorrect official figures.

The result is that the use of incorrect official figures in the vast majority of cases prevails and, in such cases as CAP costs and benefits to Italy, popularizes un-verified, and often incorrect, common-places which regrettably happen to play a significant role in opinion-making.

1 A BRIEF HISTORY OF THE APPRAISAL OF COSTS AND BENEFITS OF THE CAP

Criticism of the CAP is likely to be as old as the policy itself, but the origin of the official history of the appraisal of costs and benefits of the CAP can be dated back in 1974 when the EC Council of Ministers, concerned with the growing expenditure[1] under the agricultural fund (FEOGA) and urged by the German government, invited the EC Commission to present a complete summary of all aids and subsidies in the member states and to take stock of the CAP, with special reference to the objectives of Article 39 of the Treaty of Rome.

Strictly speaking this request did not necessarily imply a cost-benefit analysis of the CAP: such analysis examines the balance between costs and benefits and is usually performed before implementing a project. The stocktaking was rather aimed at checking whether or not the policy was attaining the stated objectives (at reasonable costs).

---

[1] increasing from 103 to around 4000 million UC between 1965 and 1973 (1542 UC being export restitutions alone) and with unlikely prospects of reversing the trend in the near future (ASIC, 1975)

The document released to answer this request[2] pointed at regional disparities and budgetary costs as major disadvantages of the CAP. The subject was treated in very aggregate terms at the EC level and did not specify to whom in particular those advantages and disadvantages were to be associated.

The dissatisfaction for the lack of details at the member state level in that document prompted a sequence of written questions by members of the European Parliament about the total financial flows occurring between the EC and the member states, and eventually to a reluctant answer by the Commission.[3]

The Commission rightly warned that "... it can be misleading to study the transfers of resources which are incidental to the execution of the budget without examining the true impact of the related costs and benefits".[4]

Nevertheless, the figures presented in the Commission's answer were 'de facto' used to calculate member countries' net payments to the common budget and gave immediately rise to a considerable quarrel about net gainers and losers from the CAP and, by extension, from EC membership. If the confusion between the different concepts of costs and benefits of the CAP, and of EC membership, did not originate from these events, they may certainly have contributed to increase it.

It is apparent that the stocktaking of the CAP and the financial inflows and outflows caused by EC membership to the member states are, in principle, two rather separate issues. However, since the bulk of the common budget is spent by FEOGA, agricultural expenditure is often mistakenly associated with the total cost of EC membership[5] and, similarly, it is often wrongly held that the budgetary figures

[2] "Stocktaking of the CAP" COM(75)100
[3] Official Journal of the European Communities C28 31/1/79
[4] OJEC C28 31/1/79, p.2
[5] This attitude is very widespread. It is far from rare to come across titles like "The Net Cost and Benefit of EEC Membership" (Whitby ed., 1979) where only the agricultural sector is actually inspected

represent the cost of the CAP.

The country's breakdown of financial transfers so cautiously issued by the Commission for the years 1976 and 1977, and later[6] also for 1978, referred only to budgetary figures. Recorded transfers had been adjusted forMonetary Compensative Amounts (MCAs) (as since 1976 they were paid only in the exporting country) and this added difficulty to the interpretation of these figures.[7]

Subsequently, again upon request of the Council of Ministers, the Commission produced another document[8] showing the financial transfers likely to materialize when the new system of financing the common budget through 'own resources' would be fully working.

It is rather odd that, though the Commission maintains with reason that these figures do not represent the costs and benefits of EC membership for the member countries, nevertheless they are often taken officially into account as reliable proxies of costs and benefits and heavily contribute to opinion- and decision-making. Since 1980 they have played a determinant role in approving UK budgetary rebate, they have served as a basis for new members' accession negotiations, and are invariably reported by the press.

As for the Italian situation, for example, one may read that "Since the end of the 1970s Italy had become a net beneficiary in the budget balance, so that the Government assumed an attitude favourable to a certain enlargement of total expenditure. It was felt that any ceiling in this respect would clash with almost all decisions about the CAP."[9] This quotation is just one among many examples about how easily agricultural and budgetary issues are confused by policy-makers and how deep-rooted is regarded their connection.

[6] OJEC C164 2/7/79, p.11
[7] For instance, according to these tables, after having allowed for MCAs adjustment, in 1977 the Italian and the British position changed from being net contributors to net beneficiaries
[8] COM(79)462 12/9/79
[9] Petit et al. (1987) p.77

It is well known by the profession that many authors[10] pointed out that these figures do not represent the true balance between costs and benefits of the CAP to the member countries, but only that fraction which is recorded in the common budget.

In particular, they overlook the "invisible transfers" i.e. the income flows due to the price support policy which accrue to EC exporting countries' producers and are paid by EC importing countries' consumers. They are termed "invisible" as they do not appear in the balance sheets of the common budget and "transfers" as they represent income transferred within the EC, although for a single member country they represent a net cost or benefit.

Nowadays, the notion that the economic analysis of costs and benefits of the CAP to the member countries should include the "invisible transfers" is as widely accepted amongst scholars, as it falls short of being understood and popularized by the media, with the unhappy result of a partial and misleading information at the lay man level which can easily be manipulated.

In the following, the different concepts and methods will be clarified by resorting to the aid of the Venn diagram presented in its general form in Figure 1.

For the general and correct understanding of these diagrams it should be noticed that they do not try to adhere proportionally to the actual dimension of the variables under examination. Being referred to member states' inflows and outflows, rather than to EC', it would not even be possible to represent them by a scale drawing, otherwise each country would require its own diagram. On the contrary, they only aim at giving the idea of the relationship existing with each other, and in particular at visualizing the kind of data presented by the tables.

[10] in addition to the already mentioned Rollo and Warwick (1979) and CEPG (1979) see also Koester (1977), Blancus (1978), Morris (1980), Buckwell et al. (1982) and Ahrens (1984)

Figure 1

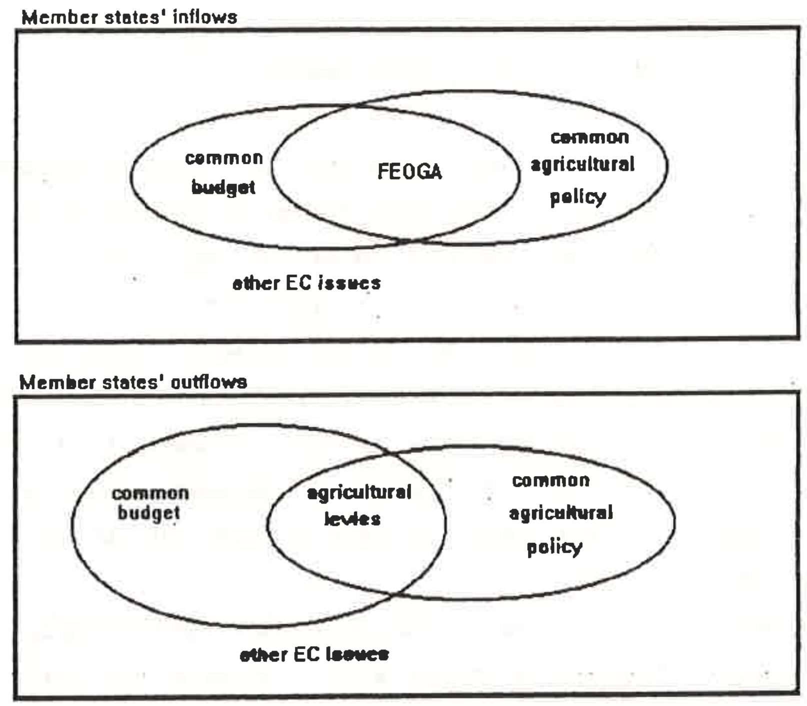


Figure 1 sketches the relation existing between the concepts presented so far:

1. the common budget includes, on the EC expenditure side, the agricultural fund, FEOGA, which has persisted around 70% on total expenditure throughout the 1980s, and, on the EC revenue side, the agricultural levies, which have declined from 13% to 7% on total "own resources" during the same period;
2. the system of budgetary revenue coming from agricultural levies, and expenditure going through FEOGA, is the backbone of the common agricultural policy, which, however, involves more income transfers other than sheer budgetary revenue and expenditure;
3. the common budget and the common agricultural policy overlap so far as FEOGA expenditure and agricultural levies revenue are concerned;
4. many more extra-agricultural policies and issues may be related to the costs and benefits of EC membership, but they do remain outside the scope of this analysis.

2 THE APPRAISAL OF COSTS AND BENEFITS THROUGH BUDGETARY FIGURES

2.1 Figures related to the whole common budget

The two sides of the balance of inflows and outflows between the member states and the EC, as published by the EC Commission in 1979, are indicated by the shaded areas in Figure 2.1 while Table 2.1 shows the resulting net budgetary transfers for 1976-1980.

It is self-evident that the balance between these two terms cannot stand either for anything reflecting a balance related to the agricultural sector - as the latter is only a subset in the common budget - or for the costs and benefits of EC membership - as this includes a number of other issues at least as important as the common budget itself.

The budgetary figures reported in Table 2.1 show the FRG as the main net contributor, followed by France with a somewhat declining trend and by the UK with an alarming tripling of its net contribution between 1979 and 1980, once the accession period effects were over. Italy records only one negative year, but this could also be due to differences in the method of calculating the national shares and the unallocated part used for the first and for the second set of data.

However, these figures are downright financial transfers with little other meaning than for general accounting and without any univocal link with the effects of EC policies. Indeed, the economic analysis of costs and benefits of EC membership should focus on EC policies and their effects rather than on budgetary accounts.

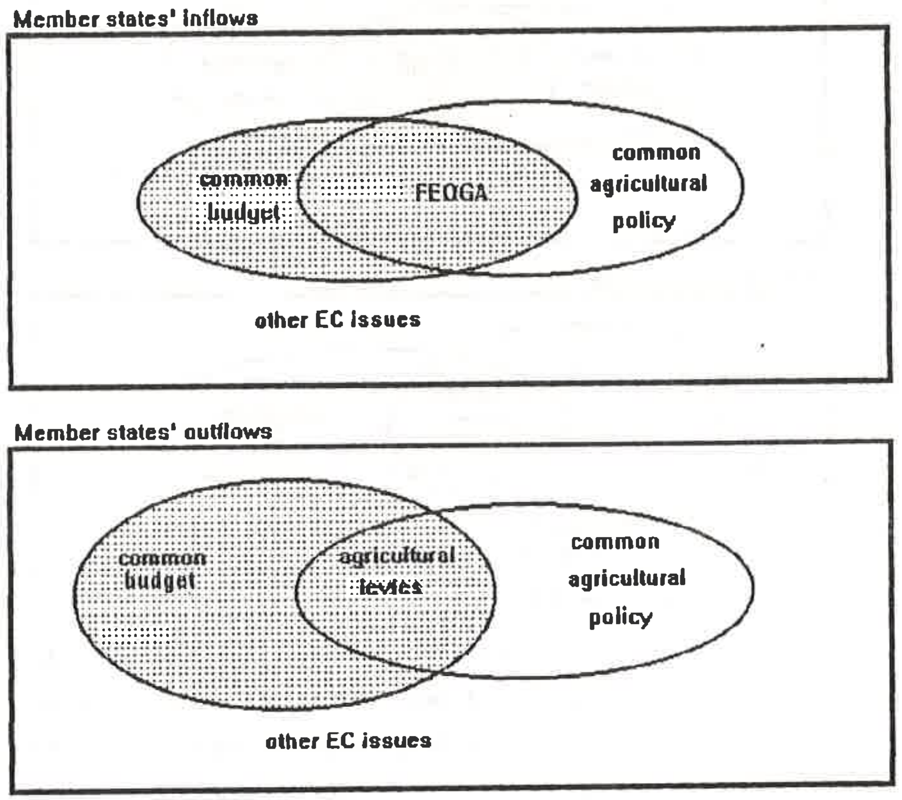
Leaving aside the wider issue of costs and benefits of EC membership, which should include the economic and non-economic effects of a very comprehensive range of policies, the following notes will focus only on agricultural matters.

Table 2.1 EC Budgetary Transfers - Mio Eua -

Countries	1976	1977	1978	1979	1980
Belgium	346.2	328.8	350.3	338	538
Denmark	294.0	293.0	381.3	224	283
FRG	-1053.6	-1466.9	-519.8	-1155	-1107
France	58.1	-309.9	-321.0	-322	-120
Ireland	155.1	212.0	320.1	365	436
Italy	247.8	293.6	-304.9	754	871
Luxembourg				251	292
Netherlands	220.8	87.5	57.0	72	359
UK	-89.8	125.8	-407.0	-527	-1552
Total	178.6	-436.1	-444.0	0	0
(1)	21.5	16.7	39.0		
(2)	-299.0	324.3	393.9		
(3)	98.9	95.1	11.1		
Total	0	0	0		
Source:	OJEC C164 2.7.79, p.11.			COM(79)462 p.15-16	

(1) Other currencies
(2) Change in Commission's balances with national treasuries
(3) Differences on exchange rates

Figure 2.1

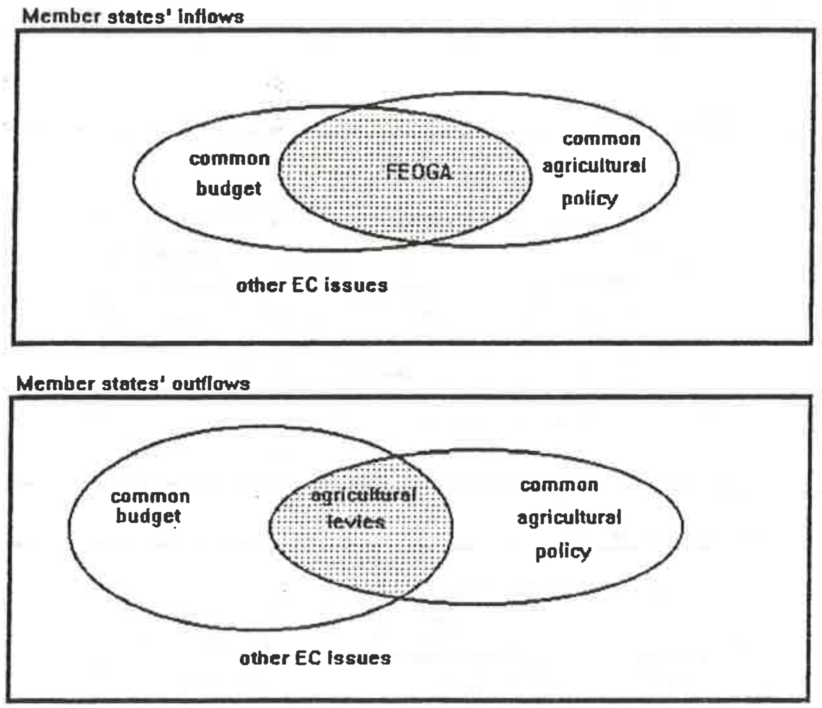


2.2 Budgetary figures strictly related to agriculture

When one endeavours at striking a balance between costs and benefits of the CAP to the member countries through the budgetary figures connected to the agricultural sector, a first difficulty arises because, in the EC common budget, agricultural expenditure does not have earmarked funds within "own resources".

In other words, since all member states' contributions to the common budget are pooled together and then spent according to the obligations of the various funds, there is no separate budget where agricultural revenue and expenditure can be compared.

Figure 2.2



However, it is possible to attempt an agricultural balance between member countries' outflows towards the common budget through agricultural levies and inflows from FEOGA expenditure (shaded areas). Figure 2.2 shows the approximation to this concept.

There is, moreover, an additional difficulty: although in the early times, when the CAP was devised, "... it was generally expected that [import levies] would more than cover agricultural expenditure",[11] the CAP developed in such a way that FEOGA has always needed funds from other sources to bridge the gap between continuously-declining revenues from agricultural levies and its expenditure, on which has proven so difficult to keep a check.

Since 1980, the value of FEOGA expenditure in absolute terms has always been over six times that of agricultural levies, with a maximum of more than ten times in 1986. Being the agricultural balance to be established between numbers of very different size, it was calculated in relative terms (N_i) by subtracting each country's percentage share of agricultural levies ($A_i/\Sigma_i A_i$) from its share on FEOGA expenditure ($E_i/\Sigma_i E_i$) for the i=1,..,n (n=12) countries.

Table 2.2. shows the breakdown of values for N_{ij}: a negative value indicates that the country's percentage share of contributions to the common budget in the form of agricultural levies exceed its share of revenues from the bommon budget through FEOGA for a given country and year.

The set of net gainers and losers has changed vis-à-vis to the previous table. While the UK always shows negative figures, the FRG is no more a unambiguous net contributor, and France is always a net gainer (with the exception of 1984 and for a small difference). Italy is more often recorded among the net contributors than the net gainers. Given the structural characteristic of the sector and in absence of dramatic policy changes, this cannot be entirely due to the effect of a different reference period.

---

[11] see Tracy (1989) p.270

Table 2.2 Net balance between percentage shares of FEOGA expenditure and agricultural levies

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Belgium	-5.86	-7.31	-8.39	-11.80	-8.28	-8.01	-5.06	-9.04	-5.65
Denmark	4.29	2.93	3.03	2.28	2.90	1.75	2.31	2.21	2.29
FRG	4.24	.92	-1.23	1.31	-2.80	-1.29	1.30	-.34	-.76
Greece		.26	2.08	3.95	3.75	4.66	4.53	4.82	3.83
Spain							.15	-1.59	-3.35
France	13.06	13.50	10.47	6.60	-1.42	4.12	3.34	6.55	3.72
Ireland	4.74	3.45	3.45	3.06	3.89	4.96	4.74	3.59	3.21
Italy	-6.55	.79	3.67	-.18	6.44	-.62	-4.91	-1.66	-3.58
Luxembourg	.10	.03	.02	.02	.01	.02	.00	.00	.01
Netherlands	.15	-1.69	1.10	1.28	2.12	-.45	1.11	4.69	6.25
Portugal							-.68	-.72	-.85
UK	-14.29	-12.89	-14.25	-6.53	-6.65	-5.18	-6.84	-8.51	-5.18
Total EC	0	0	0	0	0	0	0	0	0

Source: own calculations from ASIC & OJEC data (various years)

2.3 Budgetary figures notionally related to agriculture

Another (more common) method of finding the balance between member countries' inflows and outflows with the EC budget and due to agriculture was first employed by Rollo and Warwick (1979) for 1977 and 1978.[12] They circumvented the obstacle given by the absence of an agricultural budget by imputing to FEOGA the same share each member country was paying to the common budget.

Their study showed the UK, Italy and the FRG among net contributors both in 1977 and 1978, and their results were fostered by those published by the Cambridge Economic Policy Group (1979) for the same years. Employing a similar method Thomson (1989) shows a FEOGA balance for Italy in 1986 amounting to a deficit of 100 million Ecu, while France now joins the UK and the FRG in the group of net contributors.

[12] for a survey of these results see for instance Buckwell et al. (1982) chapter 4 where several studies have been compared

By means of the usual diagram, Figure 2.3 shows how the two sides of the balance change: member countries' inflows from FEOGA expenditure now are matched by the notional outflows towards the common budget (shaded areas). With reference to Table 2.2. above only the distribution of member countries' outflows changes: this reflects now the distribution of "own resources" outflows among the member countries, while the previous calculations employed the distribution of agricultural levies only.

Figure 2.3

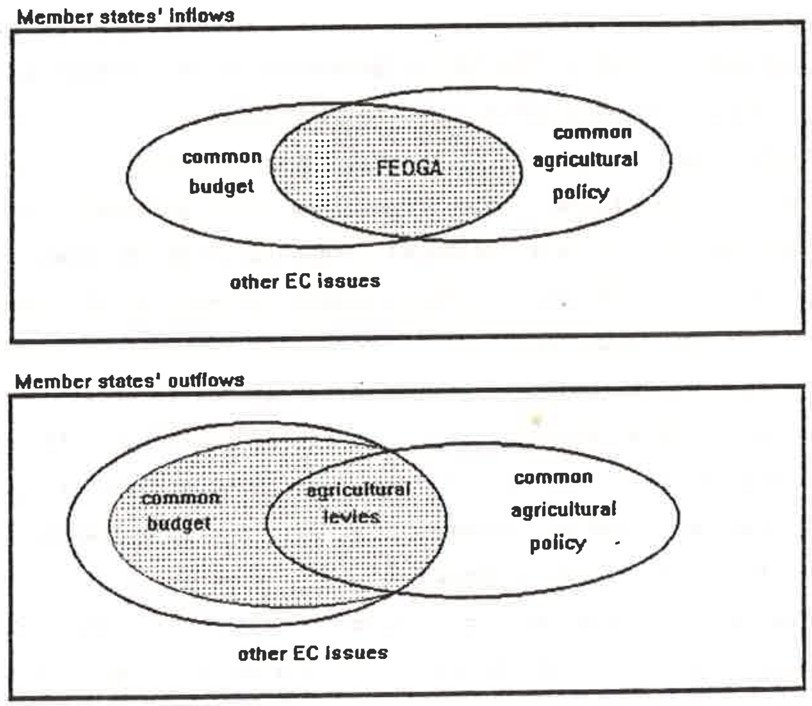


Table 2.3. is calculated by subtracting from each country's FEOGA receipts (E_i) a share of total FEOGA receipts proportional to its share on the common budget ($((Q_i/\Sigma_i Q_i)*\Sigma_i E_i)$), where Q_i is a country's outflows to the common budget, for the i=1,...,n (n=12) countries.

Table 2.3 Net balance between FEOGA expenditure and equivalent budget revenue

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Belgium	-144.8	-155.3	-156.2	-284.7	-252.0	-112.6	-15.6	-284.2	-545.6
Denmark	384.5	277.4	322.6	350.5	488.2	374.6	554.6	533.6	583.8
FRG	-978.7	-1235.9	-1368.4	-1488.8	-1935.9	-2281.5	-1814.2	-2352.4	-2981.3
Greece		-9.2	464.2	816.5	741.8	1041.7	1086.4	1134.3	1134.5
Spain							-1272.0	-874.9	-61.6
France	730.6	929.1	414.0	467.2	-94.4	512.6	905.5	1174.7	487.0
Ireland	525.5	402.8	469.8	533.1	752.9	1006.5	1054.5	820.5	907.1
Italy	414.7	730.1	1028.9	930.0	1567.4	704.2	-87.5	594.6	278.9
Luxembourg	-2.8	-10.9	-11.9	-19.7	-24.4	-34.1	-42.2	-41.2	-46.9
Netherland	612.8	335.3	562.8	597.3	711.3	602.9	790.2	1238.9	1908.4
Portugal							-132.1	-22.6	2.6
UK	-1541.9	-1263.4	-1725.6	-1901.3	-1954.9	-1814.2	-1027.5	-1921.3	-1667.1
Total EC	.0	.0	.0	.0	.0	.0	.0	.0	.0

Source: own calculations from ASIC & OJEC data (various years)

A quick comparative look to the tables presented so far reveals that:

1. the UK is the only unequivocal net contributor
2. Denmark and Ireland are always net beneficiaries
3. for the remaining member countries the situation varies according to the set of data employed: in particular the French and the Belgian positions change to the opposite vis-á-vis the figures published in the EC documents.

As for the Italian position (a net gainer in the EC official data as well as in popular beliefs), it is worth stressing that the more the calculations are specific to the agricultural sector (i.e. balance between FEOGA and agricultural levies) the more a minus sign is found in front of Italian figures.

This is not surprising for, being Italy a net importer of agricultural produce, it is likely to contribute comparatively more than other countries to common budget agricultural levies and receive comparatively less through FEOGA expenditure (except for structural policies).[13]

[13] This is proved by computing Table 2.2 with reference to FEOGA Guarantee, rather than to total FEOGA expenditure. However, since FEOGA Guidance is such a small fraction on total FEOGA, results cannot change dramatically

What is more surprising is that, in the views of the Italian government quoted above, benefiting from the common budget equals to benefiting from the CAP. Indeed these data show that, in terms of sheer budgetary figures, Italy benefits proportionally more from the non-agricultural, than from the agricultural, part of the common budget. The opposite is true for the FRG, while for France the results of Table 2.3 reflect those of Table 2.2.

However, it should be stressed that these figures do not tell the entire story of costs and benefits of the CAP to the member countries. So far only that part of the CAP which overlaps with the common budget has been examined, while the rest of the area, which symbolizes other effects of the policy, has remained still unexplored.

The following part of the paper aims at presenting a more complete evaluation of the balance between costs and benefits of the CAP to the member countries. This is not only a need for policy-makers, but is called for by private as well as public decision-makers and is also of interest to the general public. Therefore it is worth trying to obtain a more accurate picture through a cost-benefit analysis specifically directed to the CAP.

3 THE APPRAISAL OF COSTS AND BENEFITS OF THE CAP THROUGH COST BENEFIT ANALYSIS

Though the origins of cost-benefit analysis, a popular branch of applied welfare economics, can be traced back to the work of Dupuit (1844), only since the early 1960s it has currently been employed as a basic tool in project evaluation. In some respect policies can be regarded as projects undertaken by the government and therefore explored by cost-benefit analysis.

Reflecting in some way the difficulty of welfare economics in reconciling equity and efficiency issues, also cost-benefit analysis may be differentiated into two approaches.[14]

The 'traditional' approach, more directly deriving from 'new[15] welfare economics', is generally associated with the names of Harberger (1974, 1977) and Mishan (1975, 1981) and, in the economic assessment of a project, stresses the efficiency aspects by means of the Marshallian surplus analysis.

The 'new' approach, on the other hand, is not restrained by the application of a strict efficiency criterion, but, being more concerned with equity issues, lets other considerations affect the analysis, mainly through the use of distributional weights. This approach follows the work done by Little and Mirrlees (1968, 1974) for the OECD, where the social profit is evaluated in terms of variations in foreign exchange taken as the numeraire, and the work done for the UNIDO by Dasgupta, Marglin and Sen (1972), where consumption is taken as the numeraire and shadow prices are calculated for foreign exchange, investment and wage rate.

[14] see on this, for example, Ray (1984) or Chakravarty (1987)
[15] see Hicks (1939, 1940, 1946)

Shadow prices, or, in earlier Tinbergen's terminology, 'accounting prices', which "... reflect the 'true value' of a certain product or factor to the country"[16], represent a central element in cost-benefit analysis. They differ from market prices when the economy is not in competitive equilibrium (or if the project to be undertaken is likely to affect the structure of relative prices in the economy) and should replace market prices in the economic evaluation of public intervention.

It is then apparent that shadow prices are bound to be somewhat arbitrary, ultimately depending on the government's objective function and constraints. To circumvent this difficulty a common working assumption is postulating the existence of a unitary government with a given social welfare function.

However, when the government deciding a project or a policy is a supranational organization like the EC, whose members are committed to economic integration through the composition of diverging interests, the hypothesis of a unitary government does not strictly hold true. Actual negotiations among member states take place reflecting geographically relevant preferences. Unlike a single country which is usually identified with a single market for a given product, several markets can be identified. The assessment of shadow prices then becomes really critical because only under very restrictive and unlikely hypotheses the common objective function would be exactly the same as that of each country individually taken, while deviations from it should be considered as costs or benefits to a particular country.

[16] Tinbergen (1956) p.180

3.1 The traditional approach and the role of shadow prices

3.1.1 World market prices as shadow prices

At about the same time when the Commission was issuing its official figures, a number of alternative estimates came to light showing that the costs and benefits of the CAP to the member countries should never be confused with the balance between revenue and expenditure in the budget. A lively discussion took place on this subject, predominantly amongst academics,[17] often addressing the issue of costs and benefits of the CAP to the various member countries and then ending up by focusing on its redistributive effects.

A common assumption to these studies was that known in international trade theory as the 'small country'[18] assumption: the international terms of trade are unaffected by variations of the policy. World market prices were employed as shadow prices in the calculation of the costs and benefits of the policy to each member country.

However, maintaining that the EC, the first major importer and second major exporter on world agricultural markets, can reasonably be considered a small country is hard to swallow. But, to the purpose of this analysis, the 'small country assumption' is tantamount to the hypothesis that exactly the same policy would be carried out at the national level. Therefore, it is retained here as a working assumption able to highlight the main changes occurring when the same policy is performed at the national and at the supranational level.

By such comparison, this method assesses those inter-country redistributive effects taking place in the EC, and due to the CAP through the rules of financial solidarity, according to which import

[17] for a detailed review see Croci-Angelini (1986)
[18] see Corden (1974) p.10.

levies and export restitutions are paid respectively to and from the common budget to the member countries, instead of being administered by the member countries themselves. When these results are summarized into a single net figure expressing the cost or the benefit of the CAP to each member country, the choice of this hypothesis would provide an outcome which points at costs and benefits in terms of inter-country redistribution, rather than in pure allocative terms.

Figure 3.1.1 shows a market space diagram for a customs union C which has been disaggregated into two member countries A and B. Since a customs union implies no trade barriers within it, and a common barrier against third countries to ensure preferential trade among partners, the common internal price Pc is placed above the world market price Pw. The diagram is divided into four parts: a customs union showing a net deficit for the good under examination is drawn on the upper part, with the net surplus country on the left, while a customs union showing a surplus situation is represented on the lower part, with the net deficit country on the right side.

The customs union budgetary inflows collected on imports from third countries are indicated by the dark chequered area (a), budgetary outflows paid when the system is reverted into exports are indicated by the shaded area (b), while the dotted (c) and the netted (d) areas respectively indicate a positive and a negative 'would-be' budgetary flow taking place in absence of the customs union. With reference to the previous sections, the areas indicated with a and b represent the net situation for the EC as a whole and appear in the budgetary accounts, while those indicated with c and d represent the member country's situation and include the "invisible transfers".

The diagrams show that the customs union's net budgetary flows are exactly the residual after an algebraic sum of member countries' invisible transfers is calculated.

A self-sufficiency situation in the customs union is shown in Figure 3.1.2 to clarify this point.

It is apparent that the customs union net budgetary flows (a and b) - which are the only visible and recorded, and are imputed to the importing country in case of imports and to the exporting country in case of exports - conceal substantial would-be budgetary flows of opposite sign (c and d) which do cancel at the customs union level, but at the member state level still represent inflows or outflows.

Table 3.1.1 shows that Italy is always listed with the net contributors, together with the UK and the FRG, by those authors who assess costs and benefits of the CAP to the member countries in this way.

The results reported in the Table refer to the same period, when studies on this subject were flourishing especially in the UK. After that period, interest in the subject has declined both in the academic circles - because the method was not particularly controversial - and also for the policy-makers, once the dispute on UK's contribution was over and a rebate on net budgetary contribution was allowed to that country. Lack of recent data, however, harms especially those countries, like Italy, whose position changes from being a net gainer to become a net loser when budgetary figures are replaced by figures derived from cost-benefit analysis.

Although this method, once officially accepted, could offer some bargaining power to Italy during the annual price review as well as in other internal agricultural negotiations, it has never been very popular in this country. In general the Italian government's attitude towards the CAP appears more characterized by trying to play somebody else's game, and perhaps to win some occasional concessions,[19] than by playing an active role in shaping the policy.

[19] It is revealing reading that in the 1970s Marcora "... the only Minister whose political weight was comparable to that of the Ministers of Foreign Affairs and Finance ... was able to persuade the Community to adopt a series of compensatory measures in favour of Italian agriculture, and on the financial front Italy moved from the position of a net contributor to that of a net beneficiary." (Petit et al. p.72)

Whether this attitude is intended or incidental may be debatable. As a matter of fact, though the Italian agricultural sector is not negligible in terms of several criteria,[20] when it comes to CAP decision-making Italy often feels and behaves as a minority partner which is more keen to adjust somehow, rather than to strive for defending its interests.[21]

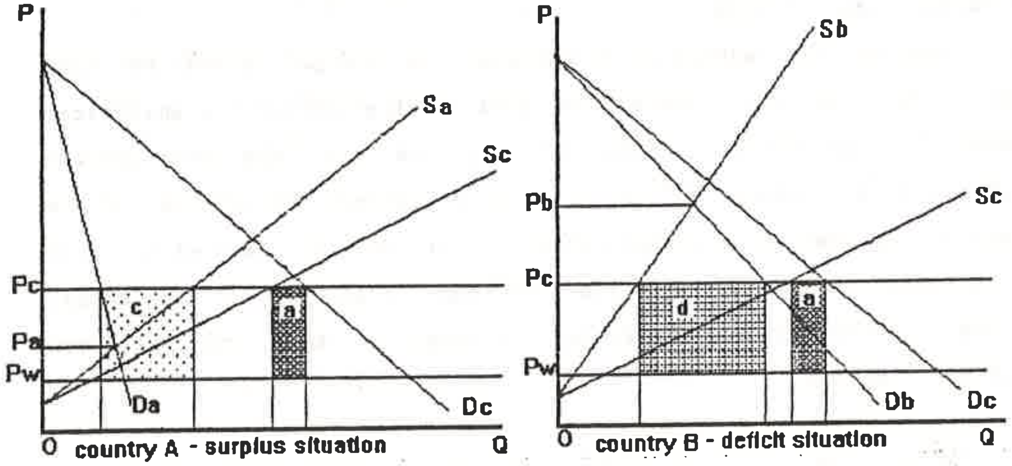
However, the assumption of pursuing the same policy does not need to be realistic. Its importance resides in singling out for analytical purposes, and therefore being able to evaluate, the inter-country redistributive effects as the difference between the effects of the same policy when it is either nationally or commonly carried out. For this reason it seems more sensible to keep the analysis of the actual situation separate from all subjective judgments about its likelihood and desirability.

[20] According to Tarditi (1987) p.407: "Among the EC10 partners, Italy accounts for the largest share of agricultural net value added at factor cost (Italy 28%, France 24,8%), of the EC10 employment in agriculture (Italy 30%, France 21%) and of the number of holdings (Italy 43%, France 17%)". The most recent available figures place Italy still in the first position for employment in agriculture and number of holdings, while France has overtaken it as far as value added at factor cost is concerned (in 1988 France accounted for 22.3% and Italy for 21.2%). Percentages have diminished in absolute terms due to the third EC enlargement to Spain and Portugal.

[21] see for instance the Italian position towards the introduction of milk quotas in Petit et al. 1987

Figure 3.1.1

Customs union C: deficit situation



Customs union C: surplus situation

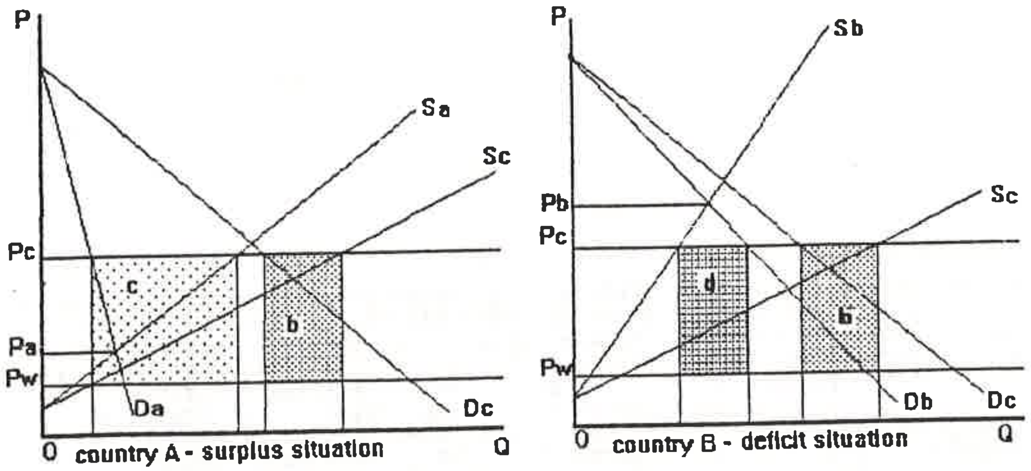


Figure 3.1.2

Customs union C: self-sufficiency situation

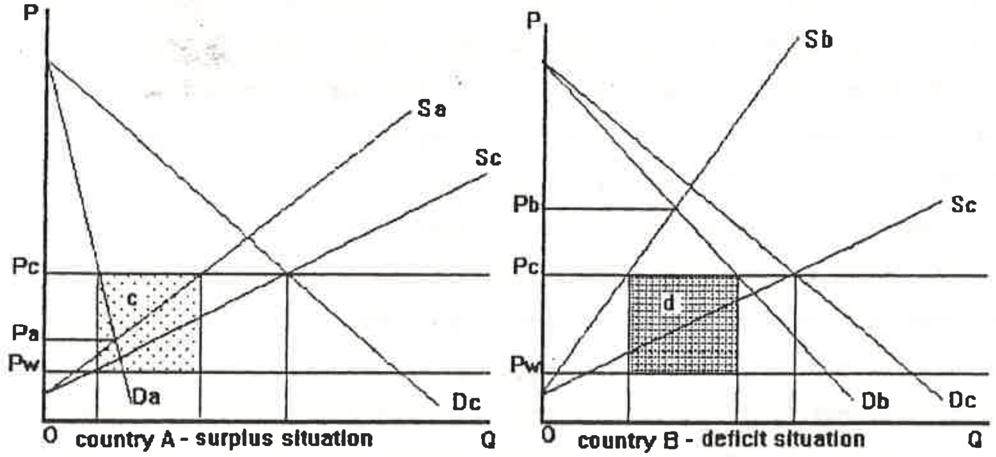


Table 3.1.1 Budget and trade transfers at actual world market prices

Countries	1976	1977	1978	1978	1978	1980
UEBL	-232	-50	-50	156	-259	148
Denmark	-25	800	950	618	324	1377
FRG	-219	-1200	-750	-671	-1740	-1740
France	489	800	850	734	-286	-36
Ireland	-	600	750	475	201	1156
Italy	-1325	-700	-1250	-646	-1541	-933
NL	164	1100	1100	631	206	1946
UK	-1067	-950	-1200	-1123	-1370	-1922
Source:	Blancus	Rollo & Warwick		CEPG	Morris	Buckwell
Unit:	Mio US$	Mio EUA		Mio £	Mio £	Mio EUA

3.1.2 International shadow prices

The approach presented above has the double merit of being simple to understand and of founding its calculation on actual world market prices as derived from EC import levies and export restitutions. However, the working assumption that each member country would pursue the same policy is quite unrealistic and its usefulness is limited to the assessment of costs and benefits to the member countries in the past, since that policy has actually materialized. Yet, for enquiring the future effects of a policy, its likelihood matters and therefore the terms of the comparison have to change.

In this respect, it seems sensible to compare the state of affaires with and without the policy under examination. The absence of EC intervention on agricultural markets should then be taken as the natural benchmark for evaluating the costs and benefits of the CAP as it is, while all other policy options should be ranked against this reference system.

For the EC, this is equivalent to using the large country hypothesis: the actual world market prices are affected by the absence of that policy and should not be employed as shadow prices.[22] The correct shadow prices in this case are the world market prices after having allowed for the effect of agricultural trade liberalization.[23] The emphasis of the exercise now is on the allocative effects of the policy, which is supposed to change - and on the redistribution resulting after liberalization has taken place - rather than on its actual and past redistributive effects.

[22] see on this Tarditi & Croci-Angelini (1982)
[23] for a survey of models and discussion about various aspects of EC agricultural trade liberalization see Tarditi et al., 1989

However, this way of assessing the costs and benefits of the CAP has the draw-back of being based on shadow prices that need to be estimated, rather than be historically observed, and are therefore dependent on hypotheses about some 'scenario' and consequently more difficult to calculate.[24]

As it happens, due to data collection, parameters evaluation and similar difficulties, a most accurate methodology[25] might not be able to provide results readily accepted as reliable, especially by the policy-maker.

3.2 The new approach and the role of distributional weights

The different ways of assessing costs and benefits presented above are all in the framework of the 'traditional' approach.

However, other costs and benefits of the CAP exist, though not so strictly linked to the market situation as represented by the market space: concern for income distribution, environmental pollution and conservation, as well as a number of other valuable issues can place the analysis in the 'new' approach.

In the evaluation of costs and benefits of the CAP, the new approach, often called the 'social' approach, has not had the same success as the traditional approach, in terms of copious literature. Some studies may be found where income distribution is taken into account through the use of distributional weights, mainly referring to individual markets,[26] but also pointing at regional imbalances as a

[24] for a thorough study see Parikh et al. (1988)
[25] in addition to the usual problems of world market prices simulation Colman and Young (1989) for instance pointed out that many models implicitly assume a perfect transmission of price policy changes to market prices, which seldom reflects reality
[26] for instance Sarris (1989) calculates the distributional weights implied by the price policies on the wheat market

consequence of the CAP.[27] However, these studies have seldom presented the same comprehensive character as well as regionally detailed results as those mentioned under the traditional approach. The requirement of having a distributional judgement explicitly specified into a social welfare function has always proved to be a major obstacle.[28]

The same kind of problems are experienced when environmental issues are taken into account. Also in this case, the approach of many studies is to examine the consequences of a given project on a given area, while the global effects of the CAP on a member country's environment - e.g. costs and benefits to Italy of a policy that through intensification tends to encourage the use of fertilizers and pesticides in the Po Valley, thereby contributing to the pollution of the Adriatic coast - are very rarely analysed in details. With a similar approach, benefits very difficult to quantify and allocate, such as the merits of having developed co-operation among the EC member countries, having shown some willingness to overcome thorny points - it is argued that "the first success of the CAP resides in its own existence" -, or having ensured over thirty years of peace in Europe, have sometimes been considered, too.

A comprehensive assessment of costs and benefits of the CAP to the member countries, which includes these effects, is very difficult to accomplish. The kind of externalities and public goods the policy provides (or may provide) and to whom, should be clearly identified and weighted accordingly. Given the high heterogeneity of the studies carried out in this perspective, the discussion of these aspects would require a paper on its own.

---

[27] e.g. Kirschke (1983)

[28] Tarditi & Croci-Angelini (1987) suggest a method for conjecturing the policy-maker's implicit social welfare function

4 WHAT CHOICE?

It might seem that this lengthy discussion on the costs and benefits of the CAP and the most correct shadow prices to be used in evaluating them is only relevant for the price support policy.

A number of policies, other than the import levy and export restitution system, have recently been enforced in the EC and there is a feeling that the importance of the so-called pillar of the CAP is declining. Nevertheless, finding the most appropriate set of shadow prices where to anchor the cost-benefit analysis is a crucial issue because the effects of all CAP tools should then be evaluated against the same (correct) set of shadow prices.

The choice about which shadow prices should be employed in the evaluation of costs and benefits of the CAP is then somehow linked to the kind of results one is seeking. This is in line, not in contrast, with the aims of cost-benefit analysis and with the definition of costs as opportunity costs. In particular, the analysis should specify: costs and benefits of what (e.g. the actual policy, or which alternative policy) and to whom (e.g. to the EC, to individual member countries, to domestic producers, consumers, taxpayers, third countries, other groups).

The results presented above are obviously related to each other, though they were obtained from differing approaches. However, it is worth adding some qualifications. World market prices are the correct set of shadow prices in order to assess actual intra-EC redistribution caused by CAP rules. Taking actual world market prices as a proxy for international shadow prices is likely to lead to inaccuracies in the size of eventual intra-EC transfers, once some degree of trade liberalization has taken place. The higher the degree of trade liberalization and the more the EC share is large on a given market, the more they tend to overvalue these transfers.

In contrast, the use of budgetary figures, in the case of economic integration under the rules of the CAP, may also lead to more or less random errors in the sign of values (i.e. gainers can be mistaken for losers and viceversa) unless very strict assumptions are introduced (e.g. intra-EC trade is ruled out).

However, in the unlikely case when no trade of agricultural goods takes place within the European Community, some appropriate budgetary figures could be employed for assessing the net cost or benefit of the CAP for a given country, would it individually withdraw from this policy, or could be taken as a proxy in case the policy is discontinued for all partners. Still, these figures would only represent the net transfers between that country and the rest of the world due to protection, but would not include domestic redistribution so far as the protected good is also domestically produced and/or consumed, and therefore would not help for applying the 'social' cost-benefit analysis.

Though seldom budgetary figures reflect the entire reality in economic terms, their official source gives them an authority which is not easily challenged by less accessible academic work. Since the media often over-evaluate the reliability of budgetary figures, these are more prone to misinterpretation and misuse.

However, it should be underlined that calculations of costs and benefits to the member countries, based on the 'traditional' approach and using world market prices as historically observed, are by no means less "real and true" than any budgetary figure. Their official publication by the EC would certainly contribute to avoid that CAP decision-making could be thwarted by misinformation.

Conclusions

In the previous paragraphs it was argued that world market prices are the correct shadow prices for assessing the actual inter-country redistribution which has taken place among the member countries as a consequence of the CAP in the past, while international shadow prices are more adequate in evaluating the costs and benefits of the policy in the future. Budgetary figures are rough and ready but it should always be clear that they may often represent a misleading evaluation.

In applying cost-benefit analysis one is often warned that shadow prices are always based on assumptions and that this represents a problem in assessing the generality of the results. It should be stressed, however, that arbitrariness in such issues is very difficult to get rid of: escaping the difficulty involved in the use of shadow prices by employing budgetary figures is itself an arbitrary choice. This arbitrariness, however, applies only to the future: as for the past, world market prices have been observed and are as much objective and reliable as budgetary figures.

In addition, it was shown that also the definition of which budgetary figures are most appropriate to answer the question of costs and benefits of the CAP for a member country is not obvious and, once again, it is the subjective choice what determines the results. Assessing costs and benefits to the member countries on purely budgetary figures is even more surprising if one is aware of the fact that they are not univocal, but are subject to some interpretation, too. Moreover, in the budget co-responsibility levies are treated as negative FEOGA expenditure, MCAs have been moved in and out FEOGA through the years, while schemes under the CAP guidelines and control, but mainly nationally financed (e.g. land set-aside), are a good example of benefits in terms of savings in export subsidies without costs for the EC budget.

While in many other respects the Commission's philosophy and attitude has changed in the course of time (e.g. on direct income payments, single countries' schemes, single market fragmentation through dairy quotas, some renationalization like land set-aside programmes), in calculating official figures for the intra-EC redistributive effects of policies (markedly of the CAP) the Commission still shows some excessive caution.

This seems to be a major reason why all qualifications and warnings by the Commission about the (mis)use of budgetary figures have not succeeded in avoiding their almost universal employment in opinion-making at the widest level.

References

Ahrens, H. (1984) Effets de la PAC sur les positions budgétaires et commerciales des pays-membres de la Communauté européenne Economie Rurale 164 Nov. Dec.

Blancus, P. (1978) The CAP and the Balance of Payments of the EEC Member Countries BNL Quarterly Review, 5.

Buckwell, A., Harvey, D., Thomson, K. and Parton, K. (1982) The Costs of the Common Agricultural Policy Croom Helm, London.

Cambridge Economic Policy Group (1979) Policies of the EEC Cambridge Economic Policy Review 5:23-30.

Chakravarty, S. (1987) Cost-benefit analysis In Eatwell, J., Milgate, M. and Newman, P. (eds.) The New Palgrave MacMillan, London.

Colman, D. and Young, T. (1990) Overestimating and Misintepreting Costs and Benefits of Agricultural Policy In van den Noort, P.C. (ed.) Costs and Benefits of Agricultural Policies and Projects Wissenschaftsverlag Vauk Kiel.

Corden, W.M. (1974) Trade Policy and Economic Welfare Clarendon Press, Oxford.

Croci-Angelini, E. (1986) Welfare and Redistributive Effects of Sectoral Economic Integration: The Common Agricultural Policy Doctoral Thesis, European University Institute, Florence.

Dasgupta, P., Marglin, S.A. & Sen, A.K. (1972) Guidelines for Project Evaluation UNIDO, New York.

Dupuit, J. (1844) On the Measurement of the Utility of Public Works Annales des Ponts et Chausses.

Eatwell, J., Milgate, M. and Newman, P. (eds.) (1987) The New Palgrave MacMillan, London.

EC (various issues) Official Journal of the European Comminuties

EC Commission (various issues) The Agricultural Situation in the Community Brussels

EC Commission (1975) Stocktaking of the CAP COM(75)100, Brussels.

EC Commission (1979) COM(79)462, Brussels September, 12th.

Harberger, A.C. (1974) **Taxation and Welfare** Little Brown, Boston.

Harberger (1977) On the UNIDO Guidelines for Project Evaluation In Schwartz, H. & Berney, R. (eds.) **Social and Economic Dimensions of Project Evaluation** Washinghton DC.

Hicks, J.R. (1939) The Foundations of Welfare Economics **Economic Journal** December pp.698-712.

Hicks, J.R. (1940) The Rehabilitation of Consumers' Surplus **Review of Economic Studies** pp.108-116.

Hicks, J.R. (1946) The Generalized Theory of Consumer's Surplus **Review of Economic Studies** pp.68-74.

Kirschke, D. (1983) **Optimal Agricultural Prices within the European Community** Discussionsbeiträge N.52 Institut fÜr Agrarpolitik und Marktlehre Universität Kiel.

Koester, U. (1977) The Redistributional Effects of the Common Agricultural Financial System **European Review of Agricultural Economics** 4(4):321-347.

Little, I.M.D. & Mirrlees, J.A. (1968) **Manual of Industrial Project Analysis in Devéloping Countries** OECD, Paris.

Little, I.M.D. & Mirrlees, J.A. (1974) **Project Appraisal and Planning for Developing Countries** OECD, Paris.

Mahè, L.P. and Moreddu, C. (1989) Analysis of CAP Trade Policy Changes In Tarditi,S.,Thomson,K., Pierani, P. and CrociAngelini, E. (eds.) **Agricultural Trade Liberalization and the European Community** Clarendon Press, Oxford.

Mishan (1975) **Cost-Benefit Analysis** Allen & Unwin, London.

Mishan (1981) **Economic Efficiency and Social Welfare** Allen & Unwin, London.

Morris, C.N. (1980) The Common Agricultural Policy **Fiscal Studies**, 1.

Parikh, K., Fischer, G., Frohberg, K. & Gulbrandsen, O. (1988) **Towards Free Trade in Agriculture** Martinus Nijhoff, The Hague.

Petit, M., de Benedictis, M., Britton, D., de Groot, M., Heinrichsmeyer, W. & Lechi, F. (1987) **Agricultural Policy Formation in the European Community: The Birth of Milk Quotas and CAP Reform** Elsevier, Amsterdam.

Ray, A. (1984) **Cost-Benefit Analysis** Johns Hopkins Press, Baltimore.

Rollo and Warwick (1979) **The CAP and Resources Flows among EEC Member States** GES Working Paper N.27.

Sarris, A.H. (1989) Price Policies and International Distortions in the Wheat Market In Tarditi, S., Thomson,K., Pierani, P. Croci-Angelini, E. (eds.) **Agricultural Trade Liberalization and the European Community** Clarendon Press, Oxford.

Tarditi, S. (1987) The Common Agricultural Policy: the Implications for Italian Agriculture **Journal of Agricultural Economics**, XXXVIII(3)

Tarditi, S. and Croci-Angelini, E. (1982) Regional Redistributive Effects of Common Price Support Policies **European Review of Agricultural Economics** 9(3):255-270.

Tarditi, S. and Croci-Angelini, E. (1987) Efficiency and Equity Components of Sector Policy Analysis and Evaluation In Y. Léon & L.P. Mahé **Income Disparities among Farm Households and Agricultural Policy** Wissenschaftsverlag Vauk, Kiel.

Tarditi, S., Thomson, K., Pierani, P. and Croci-Angelini, E. (eds.) (1989) **Agricultural Trade Liberalization and the European Community** Clarendon Press, Oxford.

Thomson, K.J. (1989) Budgetary and Economic Effects of CAP Trade Liberalization in Tarditi, S., Thomson, K., Pierani, P. and Croci-Angelini, E. (eds.) (1989) **Agricultural Trade Liberalization and the European Community** Clarendon Press, Oxford.

Tinbergen, J. (1956) **Economic Policy: Principles and Design** North-Holland, Amsterdam.

Tracy, M. (1989) **Government and Agriculture in Western Europe 1880-1988** Harvester Wheatsheaf, London.

Whitby, M. (ed.) (1979) The Net Cost and Benefit of EEC Membership
Centre for European Agricultural Studies, Wye College, Ashford.

Elenco dei Quaderni pubblicati

n.1 (febbraio 1979) **MASSIMO DI MATTEO**, Alcune considerazioni sui concetti di lavoro produttivo e improduttivo in Marx

n.2 (marzo 1979) **MARIA L.RUIZ**, Mercati oligopolistici e scambi internazionali di manufatti. Alcune ipotesi e un'applicazione all'Italia

n.3 (maggio 1979) **DOMENICO MARIO NUTI**, Le contraddizioni delle economie socialiste: una interpretazione marxista

n.4 (giugno 1979) **ALESSANDRO VERCELLI**, Equilibrio e dinamica del sistema economico-semantica dei linguaggi formalizzati e modello keynesiano

n.5 (settembre 1979) **A. RONCAGLIA - M. TONVERONACHI**, Monetaristi e neokeynesiani: due scuole o una?

n.6 (dicembre 1979) **NERI SALVADORI**, Mutamento dei metodi di produzione e produzione congiunta

n.7 (gennaio 1980) **GIUSEPPE DELLA TORRE**, La struttura del sistema finanziario italiano: considerazioni in margine ad un'indagine sull'evoluzione quantitativa nel dopoguerra (1948-1978).

n.8 (gennaio 1980) **AGOSTINO D'ERCOLE**, Ruolo della moneta ed impostazione antiquantitativa in Marx: una nota

n.9 (novembre 1980) **GIULIO CIFARELLI**, The natural rate of unemployment with rational expectations hypothesis. Some problems of estimation

n.10 (dicembre 1980) **SILVANO VICARELLI**, Note su ammortamenti, rimpiazzi e tasso di crescita

n.10 bis (aprile 1981) **LIONELLO F. PUNZO**, Does the standard system exist?

n.11 (marzo 1982) **SANDRO GRONCHI**, A meaningful sufficient condition for the uniqueness of the internal rate of return

n.12 (giugno 1982) **FABIO PETRI**, Some implications of money creation in a growing economy

n.13 (settembre 1982) **RUGGERO PALADINI**, Da Cournot all'oligopolio: aspetti dei processi concorrenziali

n.14 (ottobre 1982) **SANDRO GRONCHI**, A Generalized internal rate of return depending on the cost of capital

n.15 (novembre 1982) **FABIO PETRI**, The Patinkin controversy revisited

n.16 (dicembre 1982) **MARINELLA TERRASI BALESTRIERI**, La dinamica della localizzazione industriale: aspetti teorici e analisi empirica

n.17 (gennaio 1983) **FABIO PETRI**, The connection between Say's law and the theory of the rate of interest in Ricardo

n.18 (gennaio 1983) **GIULIO CIFARELLI**, Inflation and output in Italy: a rational expectations interpretation

n.19 (gennaio 1983) **MASSIMO DI MATTEO**, Monetary conditions in a classical growth cycle

n.20 (marzo 1983) **M. DI MATTEO - M.L. RUIZ**, Effetti dell'interdipendenza tra paesi produttori di petrolio e paesi industrializzati: un'analisi macrodinamica

n.21 (marzo 1983) **ANTONIO CRISTOFARO**, La base imponibile dell'IRPEF: un'analisi empirica

n.22 (gennaio 1984) **FLAVIO CASPRINI**, L'efficienza del mercato dei cambi. Analisi teorica e verifica empirica

n.23 (febbraio 1984) **PIETRO PUCCINELLI**, Imprese e mercato nelle economie socialiste: due approcci alternativi

n.24 (febbraio 1984) **BRUNO MICONI**, Potere prezzi e distribuzione in economie mercantili caratterizzate da diverse relazioni sociali

n.25 (aprile 1984) **SANDRO GRONCHI**, On investment criteria based on the internal rate of return

n.26 (maggio 1984) **SANDRO GRONCHI**, On Karmel's criterion for optimal truncation

n.27 (giugno 1984) **SANDRO GRONCHI**, On truncation "theorems"

n.28 (ottobre 1984) **LIONELLO F. PUNZO**, La matematica di Sraffa

n.29 (dicembre 1984) **ANTONELLA STIRATI**, Women's work in economic development process

n.30 (gennaio 1985) **GIULIO CIFARELLI**, The natural rate of unemployment and rational expectation hypotheses: some empirical tests

n.31 (gennaio 1985) **SIMONETTA BOTARELLI**, Alcuni aspetti della concentrazione dei redditi nel Comune di Siena

n.32 (febbraio 1985) **FOSCO GIOVANNONI**, Alcune considerazioni metodologiche sulla riforma di un sistema tributario

n.33 (febbraio 1985) **SIMONETTA BOTARELLI**, Ineguaglianza dei redditi personali a livello comunale

n.34 (marzo 1985) **IAN STEEDMAN**, Produced inputs and tax incidence theory

n.35 (aprile 1985) **RICHARD GOODWIN**, Prelude to a reconstruction of economic theory. A critique of Sraffa

n.36 (aprile 1985) **MICHIO MORISHIMA**, Classical, neoclassical and Keynesian in the Leontief world

n.37 (aprile 1985) **SECONDO TARDITI**, Analisi delle politiche settoriali: prezzi e redditi nel settore agroalimentare

n.38 (maggio 1985) **PIETRO BOD**, Sui punti fissi di applicazioni isotoniche

n.39 (giugno 1985) **STEFANO VANNUCCI**, Schemi di gioco simmetrici e stabili e teoremi di possibilità per scelte collettive

n.40 (luglio 1985) **RICHARD GOODWIN**, The use of gradient dynamics in linear general disequilibrium theory

n.41 (agosto 1985) **M. MORISHIMA** and **T. SAWA**, Expectations and the life span of the regime.

n.42 (settembre 1985) **ALESSANDRO VERCELLI**, Keynes, Schumpeter, Marx and the structural instability of capitalism

n.43 (ottobre 1985) **ALESSANDRO VERCELLI**, Money and production in Schumpeter and Keynes: two dichotomies

n.44 (novembre 1985) **MARCO LONZI**, Aspetti matematici nella ricerca di condizioni di unicità per il Tasso Interno di Rendimento

n.45 (dicembre 1985) **NIKOLAUS K.A. LAUFER**, Theoretical foundations of a new money supply hypothesis for the FRG.

n.46 (gennaio 1986) **ENRICO ZAGHINI**, Una dimostrazione alternativa dell'esistenza di equilibri in un modello di accumulazione pura

n.47 (febbraio 1986) **ALESSANDRO VERCELLI**, Structural stability and the epistemology of change: a critical appraisal

n.48 (marzo 1986) **JOHN HICKS**, Rational behaviour: observation or assumption?

n.49 (aprile 1986) **DOMENICO MARIO NUTI**, Merger conditions and the measurement of disequilibrium in labour-managed economies

n.50 (maggio 1986) **SUSAN SENIOR NELLO**, Un'applicazione della Public Choise Theory alla questione della riforma della Politica Agricola Comune della CEE

n.51 (maggio 1986) **SERENA SORDI**, Some notes on the second version of Kalecki's Business Cycle Theory

n.52 (giugno 1986) **PIERANGELO GAREGNANI**, The classical theory of wage and the role of demand schedules in the determination of relative prices

n.53 (luglio 1986) **FRANCO BIRARDI**, Crescita, sviluppo ed evoluzione: l'affermazione dei nessi strutturali sistematici e la combinazione di scienza, tecnologia ed economica nelle prime industrializzazioni

n.54 (agosto 1986) **M. AMENDOLA - J.L. GAFFARD**, Innovation as creation of technology: a sequential model n.55 (settembre 1986) **GIULIO CIFARELLI**, Exchange rates, market efficiency and "news". Model specification and econometric identification

n.56 (settembre 1986) **ALESSANDRO VERCELLI**, Technological flexibility, financial fragility and the recent revival of Schumpeterian entrepreneurship

n.57 (ottobre 1986) **FABIO PETRI**, The meaning of the Cambridge controversies on capital theory: an attempt at communication

n.58 (ottobre 1986) **DANIELE CHECCHI**, The international coordination of counter-cyclical policies

n.59 (novembre 1986) **ALESSANDRO VERCELLI**, Probabilistic causality and economic models: Suppes, Keynes, Granger

n.60 (dicembre 1986) **LIONELLO F. PUNZO**, J. Von Neumann and K. Menger's mathematical colloquium

n.61 (dicembre 1986) **MICHAEL BACHARACH**, Three scenarios for fulfilled expectations

n.62 (gennaio 1987) **J. ESTEBAN** and **T. MILLAN**, Competitive equilibria and the core of overlapping generations economies

n.63 (gennaio 1987) **ROBERT W. CLOWER**, New directions for keynesian economics

n.64 (febbraio 1987) **MARCO P. TUCCI**, A simple introduction to flexible functional forms and consumer behaviour theory

n.65 (marzo 1987) **NICOLA DIMITRI**, Generalizations of some continuos time epidemic models

n.66 (aprile 1987) **MASSIMO DI MATTEO**, Goodwin and the Evolution of a Capitalistic Economy: An Afterthought

n.67 (maggio 1987) **MASSIMO DI MATTEO**, Early Discussions on Long Waves

n.68 (giugno 1987) **MASSIMO DI MATTEO**, Warranted, Natural, and Actual Rates of Growth: Reflections of a Perplex

n.69 (settembre 1987) **LUISA MONTUSCHI**, Inward-Looking development and import substitution in the Argentine Economy 1950-1980

n.70 (dicembre 1987) **GIANCARLO GANDOLFO** and **PIETRO CARLO PADOAN**, The Mark V version of the Italian continuos time model

n.71 (dicembre 1987) **SILVANO VICARELLI**, Impatience to consume, the utility of wealth and the rate of interest

n.72 (gennaio 1988) **OMAR CHISARI**, Worker's assets, foreign debt and the dynamics of an economy

n.73 (febbraio 1988) **STEFANO VANNUCCI**, On exactly strong-Nash-implementable power allocations

n.74 (marzo 1988) **PIER LUIGI LANDI**, Aspetti economici della società anonima della strada ferrata Empoli-Siena o Centrale Toscana fino al 1859

n.75 (aprile 1988) **FRANCO BIRARDI**, Generating the space of physical characteristics by means of elements which are discrete and limited over time (A note on innovation in chemical technologies)

n.76 (maggio 1988) **LILIA COSTABILE**, Politica monetaria, debito pubblico e tasso di interesse

n.77 (giugno 1988) **GIUSEPPE DELLA TORRE**, L'evoluzione dei sistemi finanziari nell'approccio contabile di Raymond Goldsmith. Alcune considerazioni analitiche

n.78 (luglio 1988) **FRANCESCO FARINA**, Fattori tecnologici e transazionali nella divisione interindustriale del lavoro

n.79 (ottobre 1988) **FRANCESCO FARINA**, Gli obiettivi della Banca d'Italia e i tassi d'interesse sul debito pubblico

n.80 (novembre 1988) **GIULIO CIFARELLI**, La razionalità del tasso di cambio a termine e le "notizie": una analisi empirica

n.81 (dicembre 1988) **MAURO CAMINATI**, Cyclical growth in a long-period perspective

n.82 (gennaio 1989) **LUIGI LUINI**, Crescita esterna dell'impresa e teorie economiche

n.83 (marzo 1989) **LUIGI M. TOMASINI**, A Scheme to Allocate Wastewater Rights

n.84 (aprile 1989) **STEFANO VANNUCCI**, On Consistency Properties of some Strongly Implementable Social Choice Rules with Endogenous Agenda Formation

n.85 (maggio 1989) **AGOSTINO D'ERCOLE**, Economia e Moneta in Schumpeter

n.86 (maggio 1989) **CHARLES GOODHART**, What do Central Banks Do?

n.87 (giugno 1989) **PAOLO DEL GIOVANE**, Foreign Firms' Behavior in the United States Market during the Dollar Cycle

n.88 (giugno 1989) **GÉRARD DUMÉNIL** and **DOMINIQUE LÉVY**, The classical legacy and beyond

n.89 (luglio 1989) **RICCARDO FIORITO**, Inventory accounting and profit evaluation

n.90 (settembre 1989) **NICOLA DIMITRI**, On the robustness of the rational expectations hypothesis

n.91 (settembre 1989) **PIERMARIO PACINI**, Expectations, learning and equilibrium in a non-walrasian model: a constructive approach

n.92 (ottobre 1989) **AGOSTINO D'ERCOLE**, Sulla teoria monetaria del tasso di interesse di Schumpeter

n.93 (ottobre 1989) **UGO PAGANO**, Firms, co-ordination and disequilibrium

n.94 (novembre 1989) **UGO PAGANO**, Determinazione endogena dei diritti di proprietà in una economia di mercato

n.95 (dicembre 1989) **UGO PAGANO**, Property rights, asset specificity, and the division of labour under alternative capitalist relations

n.96 (dicembre 1989) **MICHIO MORISHIMA**, Wage differentials in Japan: 1958-1985

n.97 (gennaio 1990) **PIERPAOLO PIERANI - PIER LUIGI RIZZI**, An econometric analysis of the olive oil market in Italy

n.98 (febbraio 1990) **ENRICO GIOVANNINI**, Squilibri settoriali e dinamica macroeconomica di breve periodo: il caso dell'industria italiana

n.99 (maggio 1990) **GIULIO CIFARELLI** Sui determinanti degli errori di previsione a termine nel mercato dei cambi

n.100 (maggio 1990) **EDITED BY MASSIMO DI MATTEO** Celebrating R.M. Goodwin's 75 birthday

n.101 (maggio 1990) **OMAR O. CHISARI - JOSE' M. FANELLI** Three-gap models, optimal growth and the economic dynamics of highly indebted countries

n.102 (giugno 1990) **FRANCESCO FARINA** Italy's monetary policy inside the european monetary system

n.103 (giugno 1990) **STEFANO VANNUCCI** On the closure operators of an effectivity function

n.104 (giugno 1990) **STEFANO VANNUCCI** Struttura del mercato, giochi semplici e potenziali monopolistici

n.105 (luglio 1990) **STEFANO VANNUCCI** A note on ergodic and vmn-stable sets of abstract games

n.106 (luglio 1990) **SIMONETTA BOTARELLI** I nuovi estimi catastali: motivazioni ed effetti distributivi

n.107 (luglio 1990) **PIETRO PUCCINELLI** Impresa e mercato un approccio dinamico

n.108 (agosto 1990) **UGO PAGANO** Braverman, Harry (1920-1976)

n.109 (agosto 1990) **UGO PAGANO** Property rights equilibria and institutional stability

n.110 (settembre 1990) **STEPHAN R. EPSTEIN** Cities, regions and the late medieval crisis: Sicily and Tuscany compared n.111 (ottobre 1990) **MAURO CAMINATI** On the stability of long-period positions: an introductory note

n.112 (ottobre 1990) **MAURO CAMINATI** Cicli endogeni in disequilibrio e congetture

n.113 (ottobre 1990) **AGOSTINO D'ERCOLE** Il concetto di integrazione finanziaria internazione, Problemi e prospettive

n.114 (ottobre 1990) **LIONELLO F. PUNZO** Hilbert's mathematical formalism and the neoclassical revolution

n.115 (ottobre 1990) **BRUNO MICONI - PIER MARIO PACINI** Price systems, bargaining theory and social relations

n.116 (ottobre 1990) **LIONELLO F. PUNZO** J.-M. Grandmont on "temporary equilibrium: money, expectations and dynamics". Some Comments.

n.117 (novembre 1990) **GIULIO CIFARELLI** Cointegration and the unbiased efficiency of the forward exchange rate

n.118 (novembre 1990) **SIMONETTA BOTARELLI** L'imposizione delle imprese minori: problemi di determinazione della base imponibile nei sistemi forfettari. Una nota

n.119 (dicembre 1990) **GIUSEPPE DELLA TORRE** Teoria economica e contabilità sociale. Il «national bureau of economic research» (1920-1945)

n.120 (dicembre 1990) **ELISABETTA CROCI ANGELINI - SECONDO TARDITI** Ec Enlargement and trade liberalization in the vegetable oils market

Alla presente Collana "gialla" di quaderni il Dipartimento di Economia Politica affianca una Collana "celeste" di monografie. I numeri pubblicati a tutt'oggi sono i seguenti:

1) **GIUSEPPE DELLA TORRE**, Istituzioni creditizie ed Accumulazione del Capitale in Italia (1948-81), 1984.

2) **SANDRO GRONCHI**, Tasso Interno di Rendimento e Valutazione dei Progetti: una Analisi Teorica, 1984.

3) **ALDINO MONTI**, La Proprietà Immobiliare a Bologna in Età Napoleonica (1797-1810), 1984.

4) **GIULIO CIFARELLI**, Equilibrium and Disequilibrium Interpretations of Inflation, 1985.