SUPPORT AND PROTECTION OF GREEK AGRICULTURE: INTER-TEMPORAL DEVELOPMENTS AND SECTORAL DIVERSIFICATION

PAVLOS KARANIKOLAS[a*], DIMITRIOS BOURDARAS[b],
DIMITRIOS KREMMYDAS[a], NIKOS MARTINOS[a]

[a] Agricultural University of Athens,
[b] Ministry of Rural Development and Food, Athens.

Abstract

This paper aims at determining the level of support for Greek agriculture. The calculations are performed on a commodity basis over the period 1989-2006. By using an adapted OECD methodology, research findings indicate that the overall support level for Greek agriculture is similar to that of the EU, though after 2002 diverging trends are observed. A redistribution of the various parts of support is ascertained, whereas livestock production is more supported than crop production. The ratio of market price support to the total value of production seems to explain variations in support levels between Greece and the EU. The need for a critical reappraisal of OECD methodology is stressed.

JEL Classification: Q18
Keywords: support, protection, agricultural policy, OECD

* *Corresponding Author:* Department of Agricultural Economics and Rural Development, Iera Odos 75, Athens 11855, Greece, e-mail: pkaranik@aua.gr

Introduction

The public debate on contemporary agriculture over the last few years has focused largely on the overall policy measures taken in order to support and protect it. Since the 1970's, a systematic attempt has been made on the one hand to classify and compare various agricultural policy measures, while measuring the level of agricultural support and protection on the other.

The measuring of agricultural protection and support is undertaken in such a way that inter-temporal comparisons, as well as comparisons among countries, are possible. The earliest measurements were made in the 1970's, initially on a theoretical level (Corden, 1971), then for the agricultural sector by FAO (Josling, 1973), but it was not until the early 1980's (Legg, 2003) that measurements were systematically applied by the Organization for Economic Co-operation and Development (OECD). Ever since then, they have been published on a regular basis and constitute the technical framework on which discussions and agreements on the liberalization of international trade of agricultural products, and the revision of agricultural policies are based, while at the same time, they spawn significant exchange of arguments. Various uses of these measurements and relevant indicators have been put forward; particular interest is paid to the influences exerted by various policy measures, primarily on production and trade, and alternately on prices and incomes.

European agriculture exhibits a substantive variation in terms of structural characteristics, productive orientation, economic performance, and so forth. Hence, it is of great importance to ascertain how support and protection of agriculture is differentiated across various European countries.

The aim of this paper is to analytically determine the level of support and protection of Greek agriculture. Commodity-specific as well as whole-sector calculations are performed over the period 1989-2006. The methodology employed is that used since 1987 by the OECD to determine the support and protection of the agricultural sector, with a number of adaptations which render it more accurate within the context of Greek reality.

This paper consists of four parts. It begins with a brief presentation of the methodology used by the OECD to calculate the indicators of agricultural support and protection. It then presents a concise review of the criticisms put forward on the general philosophy and calculative approaches and usages of those indicators, followed by the presentation of the methodological approach used. The results of the research are discussed in the following section, and the paper ends with conclusions.

The methodology used by the OECD to measure agricultural support and protection

Since 1987, the OECD has measured agricultural support using the Producer Support Equivalent and Consumer Support Equivalent indicators. These concepts were

replaced in 1999, when the prime objective became the measuring of the total support and protection given to producers and consumers, in other words, the total sum of transfers instead of subsidies only (Portugal, 2002).

As a result, the total transfers since 1999 associated with agricultural policies, have been classified into three basic categories (OECD, 2004a and 2004b):

1. The transfers from consumers and tax-payers to producers, which are now measured using the Producer Support Estimate (PSE). The most important element of the PSE is the Market Price Support (MPS) which is determined by the difference between domestic and international prices for various commodities.

2. The transfers to or from consumers of agricultural products, which are now measured with the Consumer Support Estimate (CSE).

3. The transfers to services within the general agricultural sector, which are measured using the General Services Support Estimate (GSSE).

4. The Total Support Estimate (TSE) is derived from combinations of allocated data from the above categories. Essentially, it arises from the sum totals of the PSE, the GSSE and the R factor of the CSE (transfers from tax-payers to consumers).

These indicators measure the annual value of transfers to producers of agricultural products (at producer prices), which arise from policies aimed at supporting the agricultural sector, regardless of the nature, aim and repercussions of these policies on agricultural production or income. The allocated data included in the calculation of each indicator are shown in figure 1. These indicators can be expressed either in monetary terms (in Euros) or in a relative form, as a percentage of gross farm receipts. It has to be mentioned that from 2007 onwards a new PSE classification system has been applied, classifying policy measures according to the transfer basis for support (output, input, area/animal numbers/revenues/incomes, non-commodity criteria), whether the support is based on current or historical basis and whether production is required or not (OECD, 2007).

Criticisms of the OECD Methodology

Despite the fact that the above-mentioned indicators are widely used internationally, various measurement difficulties occur in estimating agricultural protection. The conceptual content of the indicators themselves is criticized as well as the way they are used in the elaboration of policy suggestions.

A number of these criticisms are already being discussed within the framework of the OECD. For example, the total support towards farmers may appear unchanged even if serious reforms of agricultural policy have already taken place; also, the PSE could be distorted by international markets' fluctuations although the domestic agricultural policy of a country has not changed (Tangermann, 2005).

The concept of an *international price* which is used as a price of reference when determining the MPS also seems to raise doubts. The conventional approach can lead to incorrect estimation of the degree of protection, as is illustrated in the case of milk (Doyon *et al*., 2002) and the use of world reference prices based on current trading status of a country (Byerlee and Morris, 1993). Another problem is the comparison of prices between domestically produced and traded commodities, when they present quality differences.

Additional problems arise when exchange rates are used to convert international prices to domestic ones, and when calculated producer support is converted into US Dollars, to facilitate comparisons among different countries. Another point that may be misinterpreted is the fact that the PSE is defined as a percentage, especially in cases when the level of productivity (and production) of countries being compared differs greatly. To redress this imbalance, the PSE should be defined in terms of acreage or animal (per hectare or livestock unit, respectively).

Of equal significance are the critiques that challenge prevailing OECD viewpoints and basic assumptions. For example, the MPS, which for most countries forms the largest support factor, is regarded as a transfer of income from the consumer to the producer. In line with this argument is the assumption that, without support measures to protect local producers from cheaper foreign products, consumer prices would be lower (OECD, 2002).

The above case, however, becomes problematic when dealing with agricultural markets, not only because in reality there are only a few markets where transactions can take place between the initial producer and the final consumer, but also because the agri-food sector is characterized by an acutely oligopoly structure, especially within the processing and trade stages (Hendrickson *et al*. 2001, ETC Communiqué 2003). The existence of oligopolistic sectors and their concentration of power reduces, to varying degrees, the *price transmission* from producers to consumers, so that the reduction in producer prices is not accompanied by a reduction of a similar amount that the consumer would pay (McCorriston and Seldon, 1996; Wise, 2004). Serious questions are then raised, pertaining to the reliability of the entire OECD methodology, which is supported by the basic assumptions of welfare economics, among which is the existence of a perfectly competitive market and the non-existence of intermediary stages in the agricultural food chain (McCorristion, 2002).

Agricultural support and protection indicators may also appear inflated, due to prices reflecting high standards of food quality and safety or rewarding farmers for providing public goods and services. Other reasons for this phenomenon, could be the protection of the environment and natural resources, or even the offsetting of natural and structural disadvantages inherent in various agricultural areas, such as 'Less Favoured Areas' (Wohlmeyer, 2002).

Methodology and Research Data

This paper develops a support and protection methodology concerning the agricultural sector of Greece, whose basic premise follows the methodology used by the OECD. All types of policy measures that are implemented in the agricultural sector are grouped into five categories, allowing their indicators to be expressed as percentages of the gross revenue of the farmers (figure 2) (see also Bourdaras, 2005). It is worth mentioning that, due to a limited availability of disaggregated data, 'Various Subsidies and Payments' are allocated into just three categories, instead of seven ('B' through 'H', see figure 1). Firstly, support measures that are related to a specific agricultural product. Secondly, measures that are not related to a specific product but are still paid directly to producers (like compensatory allowances, "aid to new farmers", "farmers' investment aid" schemes, etc.). The allocation of this kind of support is based on the relative weight of a specific product to the total value of agricultural production. Thirdly, various payments, related to specific policy measures for commodities such as cotton, tobacco, olive oil, sunflower, etc.

It has to be noted that transfers from tax payers to consumers are not included in our calculations. However, this does not pose any serious problems as far as the compatibility of both data sets is concerned, given that in the European Union those transfers during the 1990s represented 1,5% - 2,0% of average gross revenue, and an even lower percentage in the case of Greece.

A special effort has been made to adapt the OECD methodology to the special characteristics of the Greek agricultural sector. This is pursued through, firstly, the use of different *Producer Prices*: for Greek agricultural products, this paper uses the producer prices drawn up by the Ministry of Rural Development and Food (MRDF), whereas the OECD takes into account average prices which producers enjoy at the European Union level, weighed by the volume of production. Secondly, *the coverage of production sectors* differs considerably: the OECD calculations for the EU represent 70% of the final value of agricultural production, excluding commodities like cotton, tobacco, olive oil, and most fruits and vegetables. These products, however, represent a significant part of the final value of Greek agricultural production and are included in our calculations. Thus, in effect, the methodology used in this paper covers all production sectors of Greek agriculture, while the OECD coverage for Greece would correspond to 40% of its final value of agricultural production.

As mentioned above, the OECD methodology measures support levels of the sum total of the countries of the EU, using average European producer prices (weighed by the volume of production) to determine the share that refers to Market Price Support. It also uses the European Agricultural Guidance and Guarantee Fund (EAGGF) budget to determine the remaining support component. The present approach uses domestic producer prices to calculate the MPS while the second part is measured us-

ing what the OECD methodology uses. It can therefore be surmised that the results from the two methodologies are comparable in this respect.

Based on analytical data about production volumes, prices and every type of subsidies, payments, etc. which come from the Greek National Statistical Service, Eurostat, annual reports of EAGGF, the Ministry of Rural Development and Food and annual Budget proposals, a detailed calculation is made on the support and protection of Greek agriculture over the period 1989-2006, for 113 individual production sectors, which are then aggregated to 23 groups. A high degree of comparability between the OECD's methodology and our approach has been achieved, though the way the official Greek data have been recorded has not allowed a classification of various sums as detailed as that of the OECD (figure 2).

Results and Discussion

In viewing the results of this study, the continual changes in the level of total support (TSE) for Greek agriculture are most striking (figure 3). There has been a steady rise in support up to 1993, from 35% to 47%. Soon after there was a sudden drop of six percentage points, followed by a relatively stable period. However, after 2002 total support rises again to almost 45%.

The differences emerging in the composition of total support are also of great significance. In contrast to general support services for agriculture, which demonstrate a fairly steady contribution over time, the other two categories of support vary widely. MPS represents more than one third of total support in the early '90s, a share that drops to less than one fifth by the end of the period under review. This is due to border price fluctuations as well as their converging trend with domestic prices; for instance, high world prices for commodities in 1996 and low prices in 1999 resulted in a low and high MPS, respectively. Similarly, the recent increase in world prices for most commodities reduced market price support.

'Various subsidies and payments' possess a dominant position within the overall support of Greek agriculture which progressively widens (figure 3). Thus, this category, initially representing almost half of the total support, had expanded to two thirds by the end of the period under review. Constituent parts of 'various subsidies and payments' do not follow a similar pattern of change (figure 4). In particular, 'structural support measures' paid directly to the producer (e.g. compensatory allowances, farm investment support and installation of 'New Farmers') increased almost fourfold, whereas 'various payments' (related to specific policy measures for commodities such as cotton, tobacco, olive oil, sunflower, etc.) decreased from 9.9% to 7.5%. On the other hand, 'producer subsidies' (e.g. payments based on output or area planted/animal numbers) exhibit a fourfold increase in their contribution.

In addition, the support – percentage PSE – for total agricultural production increased by more than eight percentage points between 1989 and 2006 (figure 5). After

reaching a maximum of 40% in 1993 it dropped to 37% in 2006 despite temporary increases in two years. The picture, however, of the two major components of Greek agriculture is quite dissimilar. On the one hand, crop production follows a pattern of change almost identical to that of total agricultural production, fluctuating around a level which is three to five percentage points lower. On the other hand, livestock production exhibits protection indicators that are consistently higher than the average, and at certain periods, this difference reaches more than 10 percentage points. This variation in support levels is accounted for by the gap between domestic and border prices; livestock sectors enjoy an average market price support of 60% or more, whereas for most of the years the crop sectors' MPS is kept below 5%. In 2005 crop production shows a 31% PSE, whereas that of livestock production is 41%, which implies that Greek farmers specializing in crop production derive a much smaller share of their gross farm receipts from policies. Adversely, a larger share of their gross receipts originates from the market without any support (69%, in contrast to 59% for livestock breeders). The corresponding Nominal Assistance Coefficient is $1/0.69 = 1.45$ and $1/0.59 = 1.69$, respectively. This is a clear indication of the stronger market orientation of crop producers (see also OECD, 2004a).

The great discrepancy of protection levels is revealed at the level of individual sectors within Greek agriculture (table 1). As for crop production, there are sectors with protection levels higher than 60%-70%, such as tobacco and cotton while at the other end of the scale, fruits/vegetables and fodder exhibit levels of 10%-15% and 5% respectively. The continual change of support levels is also noteworthy. There are wild fluctuations of support among individual sectors. Cases that stand out are those of tobacco, with marked downward trends after peaking in 1993, olive oil with a startling increase after it bottomed out in 1995, and fruits/vegetables, whose existing low levels dropped even further after 1995. The introduction of single farm payment (SFP) in 2006 after the last revision of the CAP has caused sharp decreases in support levels of some crops, the most remarkable cases being sugar beet and common wheat.

These trends in support levels are undoubtedly related to the overall performance and the international competitiveness of Greek agriculture, though not following a clear pattern. For example, sectors with low levels of international competitiveness such as tobacco and cotton enjoy the highest protection whereas the PSE of the most competitive sector – olive oil – ranges from 20% to 45%. Support levels of individual sectors within livestock production are even more diverse, ranging from roughly 30% for sheep and goat to above 60% for beef and poultry. As for continual variations, pork is a characteristic example, ranging from a minimum of 15% to a maximum of 58%. Besides, support per acreage for Greek agriculture between 1989 and 2006 fell by 26% while support per labor unit (full-time farmer equivalents) decreased by 3%, estimated at constant prices.

Our findings show that up to 2002 the rate of total support for the agricultural sector in Greece, arising from the present study, and that of the European Union, arising from the OECD methodology, slightly deviate (figure 6). Only after 2002 a diverging trend is observed, resulting in a gap of nine percentage points in 2006. Remarkable variations are observed for specific commodities too. For instance, Greek products such as pork and poultry enjoy a protection level that is higher than the European average. The opposite holds for products like durum wheat and lamb and goat.

In order to interpret those variations, the definition of percentage PSE needs to be recalled:

% PSE = (MPS + Budgetary Support) / Gross Farm Receipts, or:

$$\%PSE = \frac{MPS + [B + ... + H]}{TVP + [B + ... + H]}$$

where TVP is the Total Value of Production at farm-gate prices.

MPS and TVP seem to be the critical terms of the above equation for the explanation of differences in support levels between Greece and EU. In particular, one could expect that the higher the ratio MPS/TVP, the higher the respective PSE. This is true for pork and poultry (see annex table 1). Greek producer prices for both products are the highest within the EU, resulting in a higher MPS. Yet, this augmented MPS is more than offset by a shrinking TVP, as production volumes for both sectors in Greece had been reduced, in contrast to EU averages. On the other hand, a very low or even a negative MPS for lamb and goat and durum wheat in Greece (due to a negative support for fodder and seeds, respectively) along with a more favourable trend in the total value of production comparing with the respective EU sectors, result in a level of support (PSE) substantially lower in Greece.

Obviously, this pertains to the overall situation and economic performance of the respective productive sectors. The formation of producer prices in a particular market is related to a host of factors, including production costs, the market structure and especially the oligopolistic nature of the agrifood sector, the existence of producer cooperatives, the granting of subsidies, etc. On the other hand, unfavorable structural characteristics and a deteriorating competitiveness can result in a stagnant or even a shrinking sector, as is evident in the hog and poultry sectors in Greece.

The results of the present study allow a fundamental questioning of the continuing course taken by Greek agriculture since the late 1980s, in the framework of the re-examination of the desired support level of agricultural sectors worldwide. At the same time, these results may initiate a critical examination of the method employed to calculate the relevant indicators.

For example, one may ask how comparable support levels for lamb and goat can be, when it is well known that in determining its 'reference price' for the EU, the price of New Zealand frozen lamb and goat upon entering the EU (c.i.f. UK) is raised

by 30% to offset the difference in weight and quality, after which slaughter and freezing costs are deducted. The Greek consumer believes that there is no comparison between frozen lamb and goat and fresh local lamb and goat. As a result, the difference in prices between these two corresponding products is meaningless. Such a comparison assumes significance only when the meat is intended for processing.

As already noted, one could critically approach the methodology used by the OECD from the perspective of the roles that agriculture plays in modern societies. If the roles fulfilled by agriculture extend beyond the production of commercial goods, to a number of other goods and services, which are not subject to market transactions, then certain societies may implement public policies which would help agriculture to fulfill its – socially desired – roles, and can reward farmers for offering those goods and services that society regards as of the highest priority. As a result, agricultural support and protection indicators may appear inflated, owing, for example, to the prices of goods that have incorporated high standards of food quality and safety. Other reasons for this phenomenon, could be the protection of the environment and natural resources, or even the offsetting of natural and structural disadvantages inherent in various agricultural areas, such as 'Less Favoured Areas' (Prestegard, 2004).

A starting point for such a venture would be the measurement of both payments based on input use and payments based on input constraints (categories 'E' and 'F' in OECD's classification, see figure 1). The identification of these categories could give an indication of policy measures that are implemented in response to societal concerns, such as the remuneration of farm inputs which produce non-market goods and services. Unfortunately, data quality from the Greek administrative authorities does not permit such a detailed exploration.

Conclusions

Policy reforms over the last twenty years have notably changed the pattern of support for Greek agriculture. The 1992 CAP reform and the 'Agenda 2000' were followed by a gradual decrease in total support levels; however since 2002 support has risen again, up to 45%. At the same time the share of 'various subsidies and payments' steadily increases at the expense of MPS, as a result of a drop in institutional prices and producer prices of basic products and the provision of direct payments as a counterbalance against loss of income for farmers. Heightened world prices for certain commodities after 2004 contributed to a sharp reduction of MPS. Consequently, policy measures that retain a gap between domestic and world prices do not represent a significant part of the overall support for Greek agriculture.

The level of support for the Greek agricultural sector as a whole has followed an upward course over the last years; as a percentage of gross producer revenue, support in 2006 hovers at 45% if it includes general services for agriculture (TSE); yet support hovers at 37% if it contains just MPS and budgetary payments (PSE). Livestock
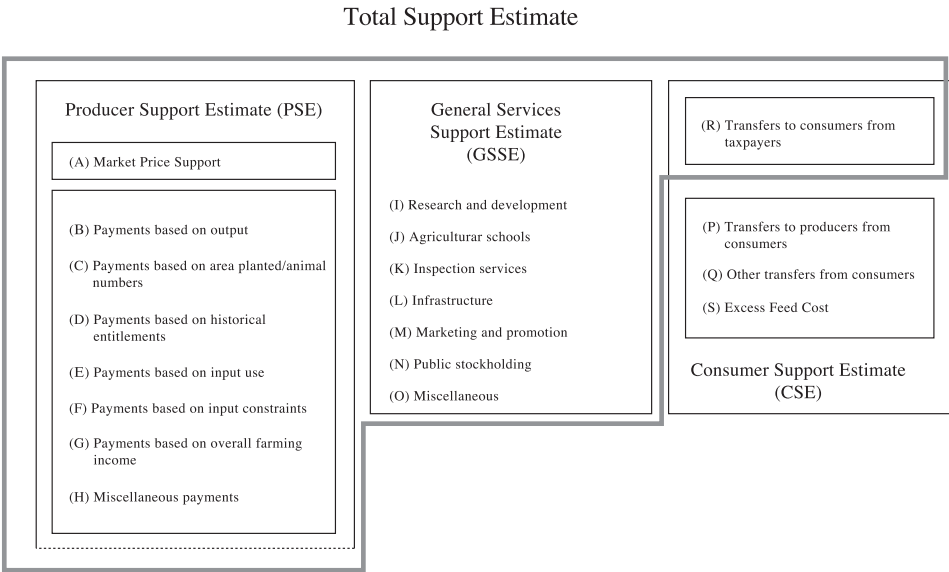
production enjoys a higher level of support and protection in comparison to crop production (41% as opposed to 31% in 2005). The deviations at the level of specific commodities are much larger, with tobacco, cotton, beef and poultry being the most supported sectors, and fruits, fodder and lamb and goat the least supported ones. In addition, the support per labor unit between 1989 and 2006, in real terms, decreased by 3%, while the support per acreage decreased by 26%.

The level of total support for the agricultural sector in Greece, arising from the present study, is slightly different from the average agricultural support level in the European Union, as it arises from the OECD methodology, except for the period 2003-2006 in which a diverging trend is observed, resulting in a gap of nine percentage points in 2006. Our research findings indicate that the variations in support levels of various commodities between Greece and the EU seem to be explained by the ratio MPS/Total Value of Production. Thus, for example, unfavorable structural characteristics and a deteriorating competitiveness can result in a stagnant or even in a shrinking sector, and as a consequence, in higher levels of support and protection, despite existing small differences between domestic and border prices.
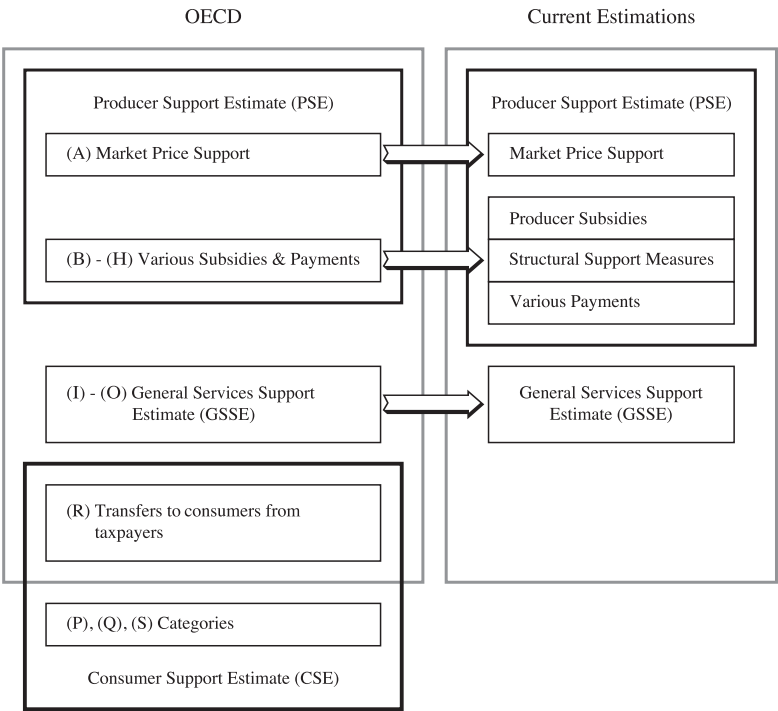
The findings of this study assume particular importance if they are examined in the context of the basic conclusions drawn from the course of Greek agriculture over the last two decades; in other words, the stagnation of productive performance, the reduction of farm income, and the rapid deterioration of its international competitiveness. At the same time, they provide a good starting point vis-à-vis the possible incorporation of the debate concerning agricultural support and protection in the realm of a wider – 'multifunctional' – context, which embodies particular social priorities and presupposes a different perspective for modern agriculture.

Undoubtedly, the detailed recording and classification of various policy measures renders the whole policy setting for agriculture much more transparent. Nevertheless, the critical appraisal of measurement indicators for agricultural protection and support which the OECD uses reveals their widespread use, as well as their debatable character. Critical views are put forward which refer to the semantic content of the indicators, their methods of calculation, and the way in which they are used in the formulation of policy suggestions (e.g. they presuppose the existence of wholly competitive markets and direct producer-consumer transactions, while totally ignoring the oligopolistic nature of the international agri-food system).

Figure 1: OECD Method Outline

Total Support Estimate

Producer Support Estimate (PSE)

(A) Market Price Support

(B) Payments based on output

(C) Payments based on area planted/animal numbers

(D) Payments based on historical entitlements

(E) Payments based on input use

(F) Payments based on input constraints

(G) Payments based on overall farming income

(H) Miscellaneous payments

General Services Support Estimate (GSSE)

(I) Research and development

(J) Agriculturar schools

(K) Inspection services

(L) Infrastructure

(M) Marketing and promotion

(N) Public stockholding

(O) Miscellaneous

(R) Transfers to consumers from taxpayers

(P) Transfers to producers from consumers

(Q) Other transfers from consumers

(S) Excess Feed Cost

Consumer Support Estimate (CSE)

Figure 2: Total Support Estimate

OECD

Producer Support Estimate (PSE)

(A) Market Price Support

(B) - (H) Various Subsidies & Payments

(I) - (O) General Services Support Estimate (GSSE)

(R) Transfers to consumers from taxpayers

(P), (Q), (S) Categories

Consumer Support Estimate (CSE)

Current Estimations

Producer Support Estimate (PSE)

Market Price Support

Producer Subsidies

Structural Support Measures

Various Payments

General Services Support Estimate (GSSE)

Figure 3. Total Support Estimate (% of gross farm receipts)
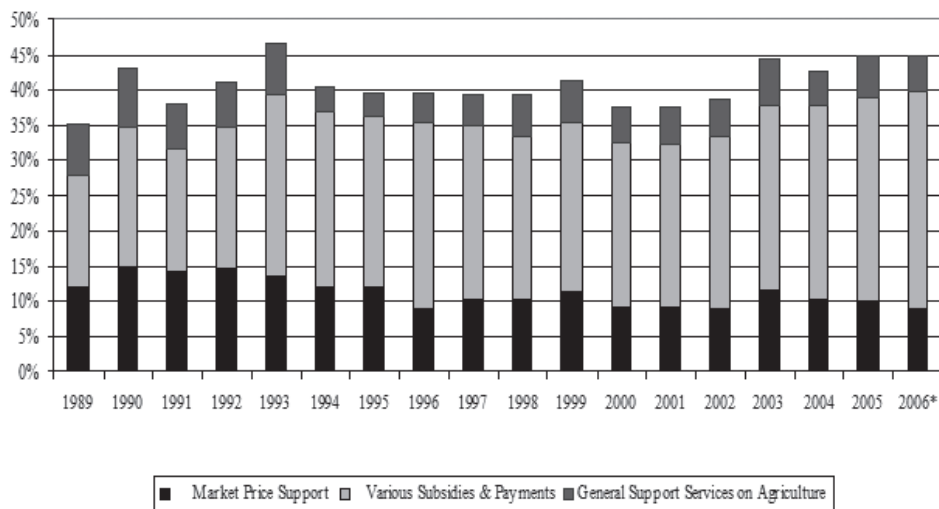
(*) Provisional Data

Figure 4. TSE by category (% of gross farm receipts)
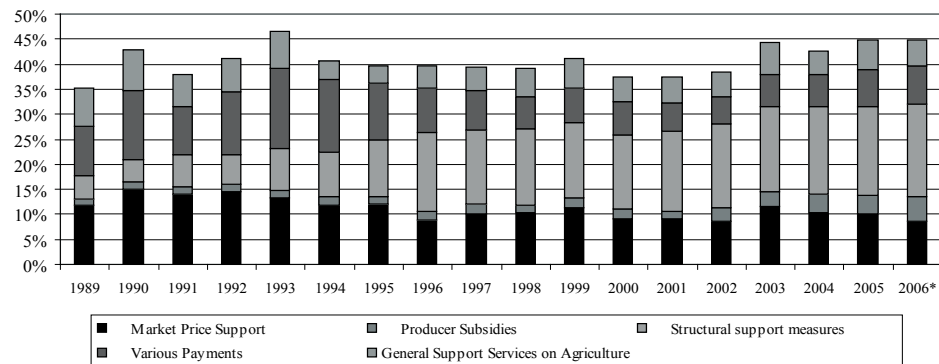
(*) Provisional Data

Figure 5. PSE by productive orientation
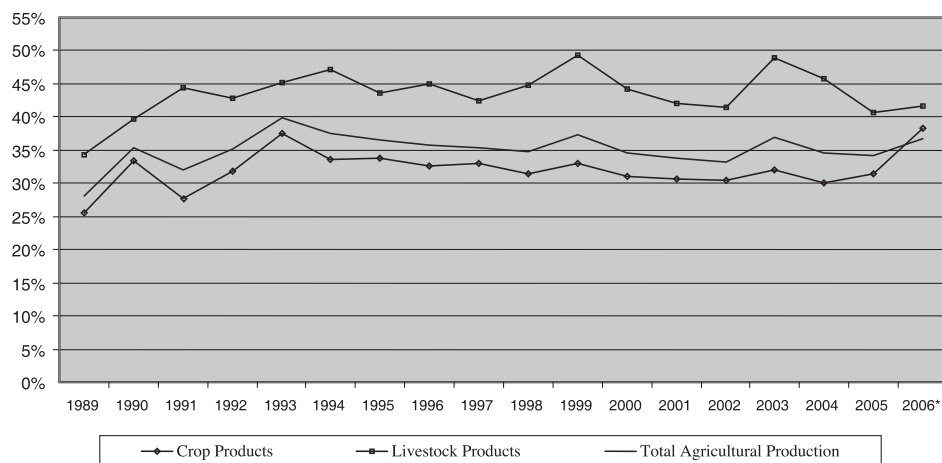
(*) Provisional Data

Figure 6. TSE for Greece and EU
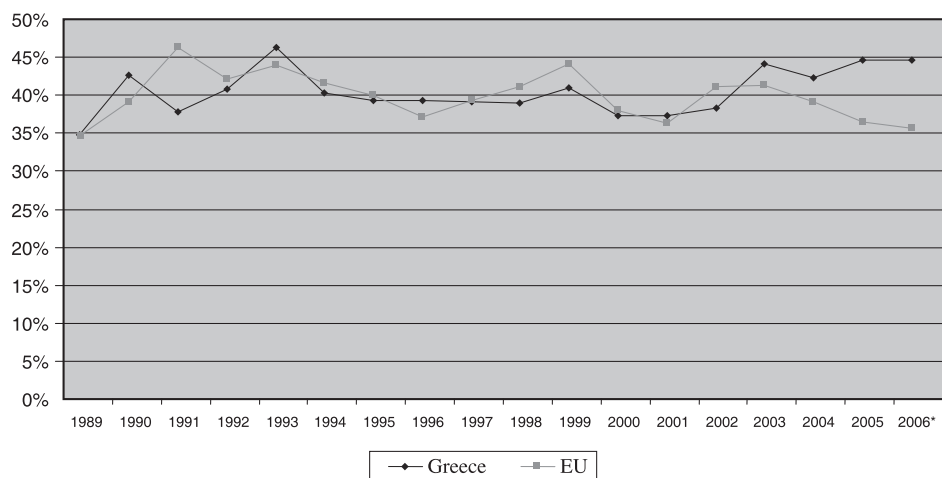
(*) Provisional Data

Table 1: Producer Support Estimates (%) for Greek Agriculture, 1989–2006

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
Common Wheat	27	39	57	43	41	49	44	28	41	53	56	46	49	50	45	36	42	28
Durum Wheat	44	56	55	53	31	24	47	54	49	55	60	46	46	36	52	45	51	54
Maize	42	53	47	53	45	41	52	25	46	36	41	30	28	39	30	28	37	29
Barley	34	50	56	53	54	60	54	43	53	66	62	50	48	57	46	35	45	38
Oat	31	44	45	46	39	61	59	55	57	69	77	72	71	57	62	69	69	63
Rye	1	2	1	2	2	16	25	26	25	40	32	44	49	53	4	35	28	31
Rice	51	56	53	56	55	56	49	21	17	11	6	-1	37	33	30	11	38	37
Tobacco	65	97	79	72	121	102	93	70	61	64	70	72	73	69	77	66	72	79
Cotton	44	65	45	61	64	62	65	75	60	58	65	59	61	59	67	62	71	74
Sugar Beet	42	44	57	66	58	48	55	61	65	65	70	63	54	56	65	65	58	21
Sun Flower	59	98	76	77	57	56	43	53	55	51	60	57	66	53	56	47	4	6
Vegetables & Fruits (Total)	15	19	14	14	20	19	23	20	18	12	12	13	10	11	11	11	12	16
Olive Oil	20	28	16	27	38	30	7	26	33	36	34	39	47	40	45	35	30	36
Fodder	1	2	2	2	2	2	3	3	3	3	4	3	3	4	5	5	5	7
Grapes for Wineries	15	11	38	14	35	26	22	17	13	8	8	7	9	13	20	14	18	40
Rest of Crop Production	1	3	2	3	2	2	2	2	2	6	6	7	5	7	6	7	6	9
Crop Production (Total)	26	33	28	32	38	34	34	33	33	31	33	31	31	30	32	30	31	38
Lamb & Goat	22	18	26	24	30	27	24	32	23	21	28	28	26	19	32	31	30	31
Beef	42	48	60	52	49	52	49	65	65	65	67	68	76	73	78	75	69	66
Pork	20	15	26	19	30	38	32	37	31	46	58	53	48	44	54	51	44	47
Poultry	50	60	63	66	64	69	72	66	60	58	69	65	62	57	63	68	62	60
Milk (Total)	45	61	58	60	60	60	53	51	51	57	57	46	41	49	56	48	40	42
Eggs	52	43	54	57	49	47	51	43	48	40	57	41	39	31	25	37	40	38
Rest of Animal Products	1	2	1	2	2	2	2	2	2	2	3	4	4	6	6	7	5	7
Livestock Production (Total)	34	40	44	43	45	47	44	45	42	45	49	44	42	41	49	46	41	42
Agricultural Production (Total)	28	35	32	35	40	37	37	36	35	35	37	35	34	33	37	35	34	37

(*) *Provisional Data*

Annex Table 1: Market Price Support / Total Value of Production

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*
pork																		
Greece	19%	13%	25%	18%	29%	37%	31%	36%	30%	45%	57%	52%	47%	42%	52%	49%	42%	44%
EU	8%	-1%	6%	-7%	8%	9%	10%	14%	11%	13%	30%	24%	19%	19%	24%	25%	15%	15%
poultry																		
Greece	49%	59%	62%	66%	64%	68%	72%	66%	59%	57%	68%	64%	62%	55%	62%	66%	60%	58%
EU	27%	32%	28%	39%	41%	44%	47%	41%	32%	27%	39%	34%	33%	36%	31%	44%	36%	35%
lamb & goat																		
Greece	-6%	-8%	-7%	-7%	-6%	-6%	-6%	-2%	-4%	-5%	-6%	-4%	-4%	-4%	-4%	-4%	-4%	-4%
EU	61%	58%	52%	50%	25%	33%	42%	31%	21%	26%	25%	20%	32%	26%	31%	31%	35%	42%
durum wheat																		
Greece	29%	43%	40%	32%	1%	-53%	-12%	-22%	-23%	-16%	-14%	-40%	-41%	-47%	-19%	-27%	-24%	-35%
EU	37%	47%	49%	42%	24%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%

(*) Provisional Data

References

Bourdaras, D., 2005, The Support of Greek Agriculture during the period 1989-1997, in Karaniko-las, P. and N. Martinos (eds), *International Trade of Agricultural Products and Multifunctional Agriculture*, Athens: Maistros, 131-170 [in Greek].

Byerlee, D. and M.L. Morris, 1993, "Calculating levels of protection: is it always appropriate to use world reference prices based on current trading status?" *World Development*, 21 (5), pp. 805-815.

Corden, W.M., 1971, *The Theory of Protection,* London: Oxford University Press.

Doyon, M., Gouin, D.M and N. Paillat, 2002, "Analyse critique du concept d' ESP, estimation du soutien au producteur. Application au secteur laitier", *Économie Rurale*, 272, November-December.

ETC Communiqué, 2003, "Oligopoly, Inc.; Concentration in Corporate Power: 2003", *ETC Communiqué*, 82, November/December.

Hendrickson, M., Heffernan, W., Howard, Ph., and Heffernan, J., 2001, *Consolidation in food retailing and dairy: Implications for farmers and consumers in a international food system*, Columbia: University of Missouri.

Josling, T., 1973, *Agricultural Protection: Domestic Policy and International Trade*, c/73/LIM/9, Rome: FAO.

Legg, W., 2003, "Presidential address: Agricultural subsidies: Measurement and use in policy evaluation", *Journal of Agricultural Economics*, 54 (2), 175-200.

McCorriston, St., 2002, "Why should imperfect competition matter to agricultural economists?" *European Review of Agricultural Economics*, 29 (3), 349-371.

McCorriston, St. and I.M. Sheldon, 1996, "Trade policy in vertically related markets", *Oxford Economic Papers*, 48, 664-672.

OECD, 2002, *Methodology for the Measurement of Support and Use in Policy Evaluation*, Paris.

OECD, 2004a, *Producer and Consumer Support Estimates*, OECD Database 1986-2004, Paris.

OECD, 2004b, *Agricultural Support: How is it Measured and What does it Mean?* OECD Policy Brief. Paris.

OECD, 2007, *Agricultural Policies in OECD Countries: Monitoring and Evaluation 2007*, Paris.

Portugal, L., 2002, *Methodology for the measurement of support and use in policy evaluation*, Paris: OECD.

Prestegard S., 2004, *Multifunctional Agriculture and the Design of Policy Instruments: Application to the WTO Negotiations on Agriculture*, Oslo: Norwegian Agricultural Economics Research Institute.

Tangermann, S., 2005, *Is the Concept of the Producer Support Estimate in Need of Revision?* OECD Food, Agriculture and Fisheries, Working Papers, No. 1, OECD Publishing.

Wise, T., 2004, *The paradox of agricultural subsidies: measurement issues, agricultural dumping, and policy reform*, Working Paper No. 04-02, International Development and Environment Institute, Tufts University, Medford MA, USA.

Wohlmeyer, H., 2002, The producer support estimate and the aggregate measure of support: suitable gauges for evaluating agricultural and trade policy? in Wohlmeyer, H. and Th. Quendler (eds.), *The WTO, Agriculture and Sustainable Development*, Sheffield: Greenleaf Publishing.