

## CHAPTER 11.

### INTERPRETING THE INDICATORS

375. The OECD indicators of agricultural support can be used to assess both the level and the composition of support that arise from policies supporting agriculture.<sup>19</sup> The level of producer support and its composition is the information most commonly utilised. This chapter shows how the indicators can be used to interpret developments in the level of producer support, and how the composition of producer support can be shown in terms of the categories (and sub-categories) into which policies are classified and the labels attached to these policies, including the degree of commodity specificity. The level and composition of support to the agricultural sector as a whole can be evaluated through the TSE.

#### 11.1. Interpreting the level of support

- The three main indicators of support to individual agricultural producers are %PSE, producer NAC and producer NPC (Box 2.1).
- In order to interpret the level of support, these relative indicators are preferred to monetary indicators, particularly when comparing changes over time and between countries.
- The %PSE indicates the extent to which transfers increase gross farm receipts.
- The contribution analysis helps explain the annual changes in producer support by identifying the source of changes in the various components.

##### 11.1.1. Level of producer support – national (aggregate) level

376. Three main indicators are used to show the level of support provided to individual agricultural producers at the national (aggregate) level: %PSE, producer NAC, and producer NPC. These percentage and ratio indicators show, in aggregate, the importance of agricultural support relative to producer receipts or border prices. Such relative indicators are generally used in preference to the monetary indicators, since they are not affected by the size and the structure of the agricultural sector as a whole, by the relative importance of commodities within the sector, or by the rate of inflation. They thus allow greater comparability over time, across countries and between commodities within a country (Box 11.1).

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19. The most recent set of indicators found in the indicator database should be used to build a database series ([www.oecd.org/tad/support/psecse](http://www.oecd.org/tad/support/psecse)). The current set of indicators is significantly different from those published in the late 1980s and early 1990s. To maintain consistency, the indicators have been recalculated back to 1986 whenever a significant change in methodology has occurred

377. A %PSE of 20% means that the estimated total value of policy transfers to individual producers from consumers and taxpayers represents 20% of total gross farm receipts<sup>20</sup>, or, alternatively, that 20% of gross farm receipts come from transfers due to policy measures supporting producers. A %PSE of 0% indicates that the estimated aggregate value of transfers to individual producers from consumers and taxpayers is zero.<sup>21</sup> A %PSE cannot be higher than 100%, at which level all farm receipts come from policy measures, with no returns from the market.

**Box 11.1. Use of %PSE in evaluating annual changes in agricultural support for the OECD area as a whole**

The PSE, the total monetary value for the estimated policy transfers to producers, is expressed in the local currency of each country. It must be converted into a common currency to allow aggregation into total PSE for the OECD area as a whole. Consequently, the year-on-year variation in the total level of transfers denominated in a single currency will result from both changes in the level of transfers measured in each national currency and exchange rate movements.

The OECD total value of agricultural policy transfers to producers, as measured by the PSE, increased slightly in USD – from USD 257 billion in 2006 to USD 258 billion in 2007 (OECD, 2008b). In contrast, when expressed in Euros, the OECD total PSE declined markedly – from EUR 205 billion in 2006 to EUR 189 billion in 2007. What can one conclude about the change in the level of support between 2006 and 2007 based on these differing results?

The most appropriate measure to compare changes in the level of support in the OECD as whole is the %PSE, which expresses the value of policy transfers as a share of gross producer receipts. The latter represent the market value of agricultural output to which are added transfers to producers from taxpayers.

The %PSE solves the problem of exchange rate choice because the same exchange rates are used to convert both the denominator and the numerator into a single currency. Consequently, the %PSE is the same regardless of the currency.

As a relative measure, the %PSE also provides a sense of the importance of policy-induced transfers in the sector and is also appropriate for comparisons among OECD countries.

The %PSE is a relative indicator and its value also depends on changes in the value of agricultural output. In this respect, a reduction in support may not always lead to a smaller %PSE if the fall in the value of output is greater than the reduction in support. A fall in output value (and volume) may have various causes, for example, natural factors, such as a climate-related disaster, or an outbreak of animal disease. A reduction in the output value may also theoretically reflect policy developments. This fall may, for example be associated with the reduction in the level of support as a result of policy reform, and/or a change in composition of support, such as a shift away from payments directly coupled to output.

The changes in the %PSE tend to be sensitive to the initial level of the indicator, i.e. at high levels of %PSE a given reduction in the absolute PSE will lead to a smaller change in the %PSE, compared to when the initial level of the %PSE is low.

378. A producer NAC of 1.2 indicates that the estimated aggregate value of transfers to individual producers from consumers and taxpayers in the country increases gross farm receipts by 20% above what they would be if production is valued at border prices and with no other support. A producer NAC of 1 indicates that the estimated aggregate value of transfers to individual producers from

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20. Recall that gross farm receipts is the value of production, plus Budgetary and Other Transfers provided to producers (*i.e.* VP + BOT).

21. This does not necessarily mean that there are no transfers to individual producers from consumers and taxpayers within the country; it could be that transfers to producers through support policies in one sector are offset by transfers from producers that result from policies which implicitly tax producers in another sector. This may occur, for example, when the oilseed sector is supported through import tariffs and direct deficiency payments, while the grain sector is taxed through export duties (resulting in negative policy transfers).

consumers and taxpayers is zero. A producer NAC of 4 indicates that gross farm receipts are four times, or 300%, higher than if production is valued at border prices (Box 11.2).

379. Producer NPC measures the level of domestic market protection; it compares domestic market and border price and adds in the value of support provided through payments based on output. A producer NPC of 1.2 for a country indicates that domestic producer prices are on average 20% above border prices for the same commodities. A producer NPC of 1 indicates that prices received by producers are on average the same as border prices.<sup>22</sup> A producer NPC of 4 indicates that farm-gate prices are on average four times, or 300%, higher than border prices.

**Box 11.2. Comparing changes in the %PSE and producer NAC**

While the %PSE and producer NAC are complementary measures that always move in the same direction, the %PSE is more sensitive to changes in support levels when support is low relative to receipts, whereas the NAC is more sensitive to changes in market receipts when support is high. In order to understand changes in policy support over a broad range of support levels, both measures should be considered.

The %PSE is the share of the PSE in total receipts, and so measures the ratio of the PSE to total receipts, including both market receipts and support transfers:

$$\%PSE = \frac{PSE}{Y + PSE}$$

where Y equals market receipts at border prices, *i.e.* excluding market price support (*i.e.* VP – MPS). The PSE includes MPS, so Y excludes it to avoid double-counting. The %PSE approaches the value of 100 as the PSE gets large relative to Y. When the PSE is large relative to market receipts, changes in the PSE will move the %PSE by a relatively small amount, since the change in PSE impacts both the numerator and denominator of the ratio that defines the %PSE. As a result, the %PSE is relatively insensitive to PSE changes when the PSE is significantly larger than Y. For example, a %PSE value of 75 indicates a situation where the PSE is three times the level of market receipts. To reduce the %PSE from 75 to 66, *i.e.* by nine percentage points, either the PSE has to reduce by half, or market receipts must increase by 50%

The producer NAC is the extent to which receipts come from the market place, and so measures the ratio of total receipts to market receipts:

$$producerNAC = \frac{Y + PSE}{Y}$$

The NAC approaches a value of 1 as the PSE becomes small relative to market receipts. When the PSE is large relative to Y, changes in the PSE will change the NAC by the same magnitude, but changes in market receipts can bring about large changes in the NAC (consider the denominator of the equation to see why this is so). For example, for the same situation described above where the PSE is three times the level of market receipts (a %PSE of 75%), the NAC has a value of 4, reflecting a situation where total receipts are 400% of the market receipts. Increasing market receipts by 50% would reduce the NAC to 3, a reduction of 100 percentage points and 25% of the value of the indicator.

380. Table 11.1 and Figure 11.1 illustrate how the changes in the level of support to producers over time can be shown for a country through the PSE expressed in monetary terms (in local and common currencies), in percentage terms and through related producer support indicators, NAC and NPC (Box 11.3).

22. As for the %PSE and producer NAC, a producer NPC of 1 for a country does not necessarily mean that all producers are receiving prices equivalent to border prices; it could be that producer prices for some commodities are higher than border prices, while they are lower for others.

381. The indicators show that, while the aggregate value of transfers to producers (PSE) in national currency has increased, the level of producer support, as a share of gross farm receipts (%PSE), has fallen from 40% in 1986-88 to 20% in 2005-07 – a decline of one-half. In 1986-88, transfers arising from support policies increased farm receipts by 67% above what they would have been if production is valued at border prices. By 2005-07, farm receipts were only 25% higher due to support policies. The producer NPC indicates that prices received by producers were on average 40% higher than border prices in 1986-88. By 2005-07, the gap had fallen by 75%, so that prices received by producers are now on average only 10% higher than border prices.

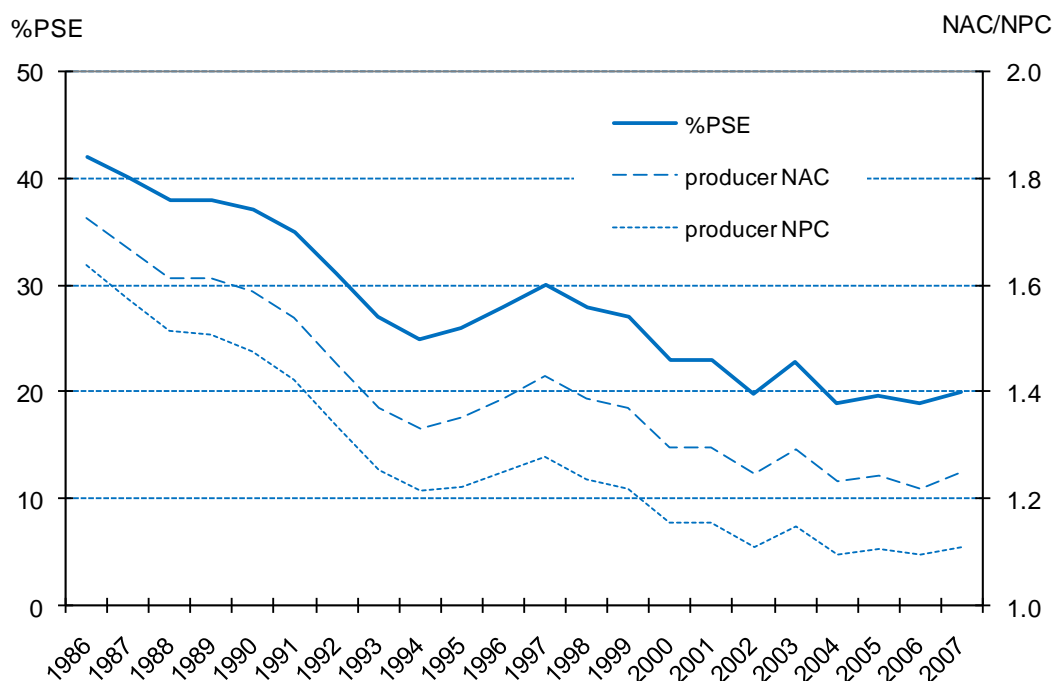
Table 11.1. Indicators of producer support

(example)

Indicators	1986-88 average	2005-07 average
PSE (Local Currency million)	7 500	8 000
PSE (USD million)	6 200	6 500
PSE (EUR million)	5 500	5 300
%PSE	40	20
Producer NAC	1.67	1.25
Producer NPC	1.40	1.10

Figure 11.1. Evolution of %PSE, producer NAC and producer NPC

(example)



**Box 11.3. Showing changes in support over time**

Two methods are used to show changes in both the level and composition of support over time. These are done in either tabular or graphical form. The first method is to simply show an annual series of indicators over an extended time period. Viewing developments over the long term allows both general trends and year-to-year fluctuations to be observed.

The second method involves comparing three-year averages and the selection of an appropriate base period from which to reference changes. A three-year average reduces some of the year-to-year variability in support levels that arise due to fluctuations in world prices, exchange rates, etc. For OECD countries generally, the reference period is 1986-88; a period of relatively high support, and the WTO Uruguay Round base period for domestic support reduction commitments for developed countries; this predates most of the substantial agricultural reforms that have taken place. Consequently, in presenting the results in the annual *Agricultural Policies in OECD Countries* in tabular form, a column with the indicator values for the 1986-88 period is included alongside the most recent three-year period. In graphical form it shows two columns or bars, one representing 1986-88 and the other the most recent period.

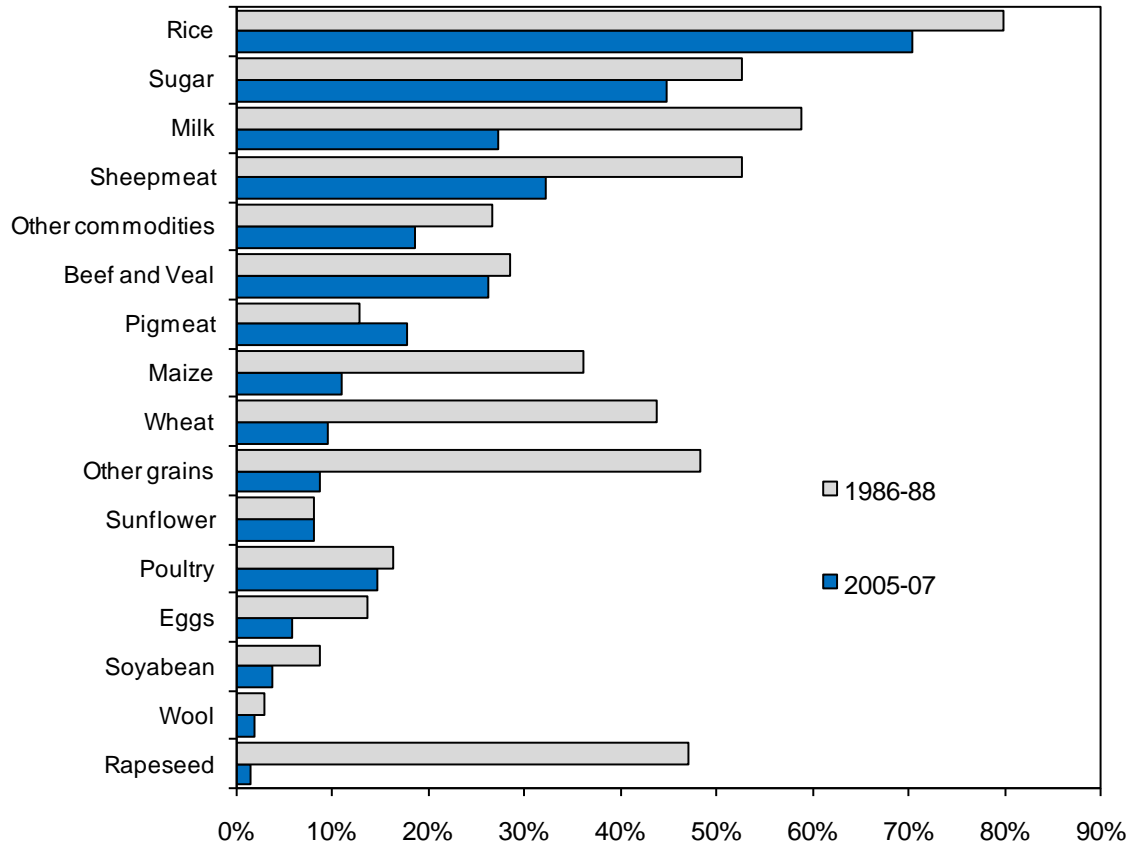
For other countries, different base periods may be more appropriate. For example, for monitored non-OECD countries such as Brazil, China, Russia, South Africa and Ukraine, the period 1991-93 is considered to be a more appropriate benchmark given the radical political and economic changes that took place in these countries in the late 1980s and early 1990s. For Mexico, it is also sometimes more appropriate to compare with the 1991-93 period, given the negative support levels that existed in the mid-1980s when farmers were effectively “taxed” by government policies.

**11.1.2. Level of producer support – commodity level**

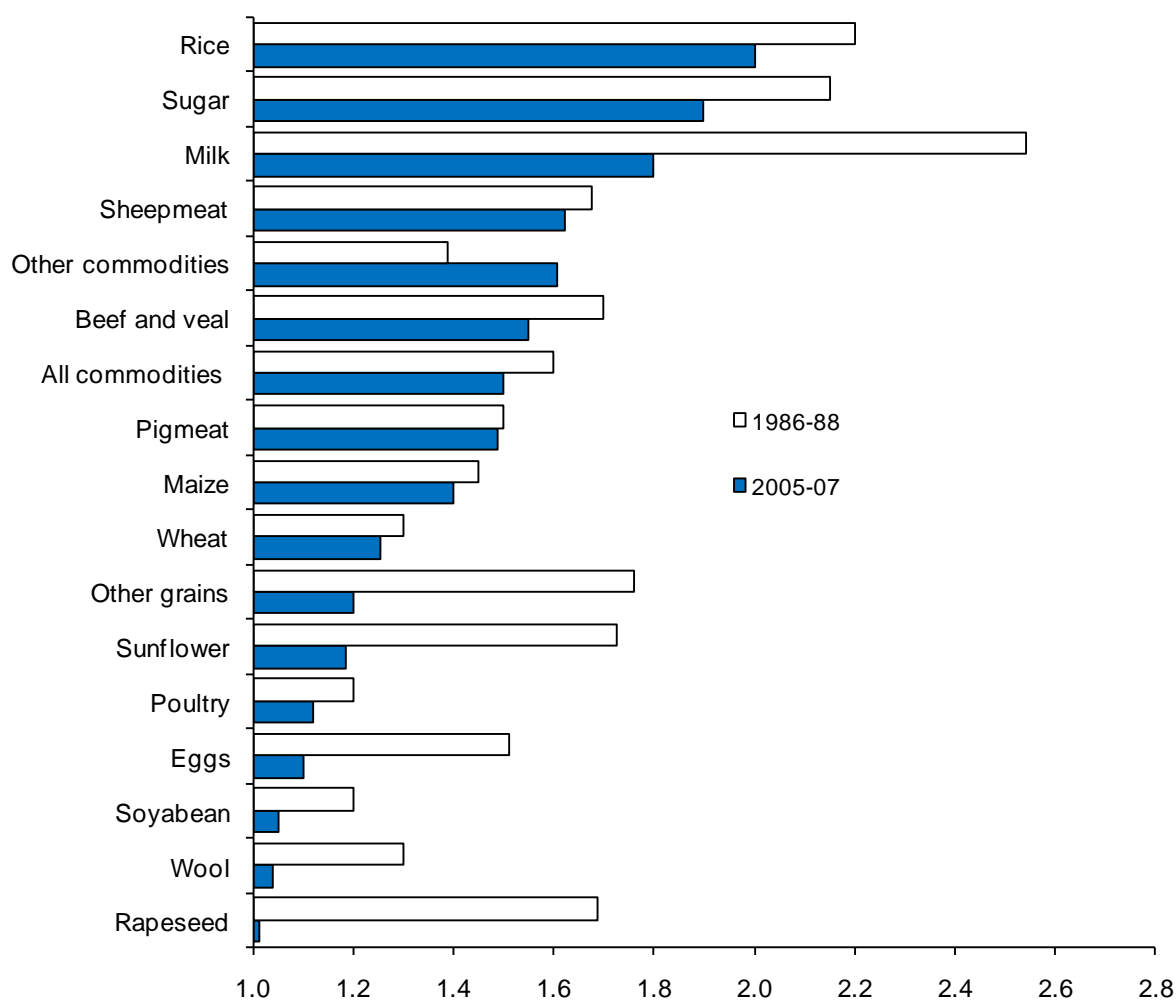
382. The previous sub-section examined indicators of producer support at the country or national (aggregate) level. Two indicators of the level of support are calculated at the individual commodity level: %SCT and producer NPC. The %SCT measures the extent to which production of an individual commodity is required to receive support. Comparing %SCT values across a range of commodities provides an indication of the degree to which support is directly linked to production of these specific commodities. Figure 11.2 shows how the results can be presented for a country, showing changes in the %SCT from a base period. It can be quite clearly seen that in the long term the reduction in transfers to a single commodity has not been uniform across commodities.

383. A producer NPC can also be calculated at the individual commodity level. As discussed above, the producer NPC shows the level of domestic market protection by comparing domestic prices (including direct per tonne payments) to border prices. The reduction in the level of price support is shown by the producer NPC for each commodity. A producer NPC of 20% indicates that domestic prices for a given commodity are on average 20% above border prices. Again, these can be graphed for each commodity, and between time periods (Figure 11.3).

Figure 11.2. Producer %SCTs by commodity  
(example)



**Figure 11.3. Producer NPCs by commodity**  
(example)



Commodities are ranked according to 2005-07 NPC values.

### 11.1.3 Level of producer support – contribution analysis

384. While percentage and ratio indicators can provide a good picture of the level of support to producers and how this level has changed over time, they do not explain why the changes have occurred. In-depth policy analysis requires some examination as to what has caused the change in support levels.

385. Changes in support levels may be due to several factors, the most obvious being variations in agricultural policy settings. However, changes in international conditions can also make an important contribution to measured fluctuations in the PSE, even in the absence of changes in domestic agricultural policy settings. The variability of border prices for agricultural commodities and changes in exchange rates are often the most important contributors to fluctuations in the Market Price Support component of the PSE (Box 11.4).

**Box 11.4. Why does the PSE change when world prices change?<sup>1</sup>**

Support levels as measured in the PSE framework tend to fluctuate over time, a large part of which can be attributed to fluctuations in the MPS component of the PSE.

The calculation of the MPS for a given commodity is based on the gap between the producer price (at the farm gate) and the border price equivalent (adjusted for marketing margins) in the country concerned. The major source of fluctuations in the MPS is the variability of world market prices for agricultural commodities. Another source is variability of exchange rates, as world market prices (at the border) and domestic prices have to be expressed in the same currency.

The PSE indicator reflects the nature of policy and the changes in support due to policy. It is tempting to think that the indicators should remain constant if policy settings have not changed. However, by picking up the variability of world market prices and exchange rates, the PSE rightly reflects the policy design characteristics that lead to a dependence of support levels on market developments. Fluctuations in policy transfers arise from fixed domestic support prices that are sustained through border instruments and that impede the full transmission of changes in world market prices to the domestic market. In the absence of price support policies, the producer price would be aligned with the border price (adjusted for marketing margins), and would therefore move up and down with changes in world market prices and exchange rates.<sup>2</sup>

There are different policies regarding the transmission of world market changes to the domestic market, and the MPS properly reflects such differences. For example, if an importing country has only an ad valorem tariff, then its domestic market price moves up and down with the world market price (although domestic prices remain higher than those on the world market) and hence the PSE would show no fluctuation (as long as no other policy instruments had changed), since the gap between border and domestic prices remains constant.

The fact that over time the MPS in the above case behaves differently than that of a country maintaining a constant domestic support price with some border mechanism to sustain it, is an appropriate reflection of differences in policy implementation. Similarly, a country providing a deficiency payment (a payment based on output) to maintain a constant domestic target price makes smaller budget expenditures when the border price is high (including due to exchange rate variations), and vice versa. In this case, the PSE calculations will show a variable level of domestic output payments, rather than of MPS.

In brief, the PSE is an indicator of the transfers associated with agricultural policies, including those resulting from keeping producer prices in the domestic market stable while world market prices and exchange rates fluctuate. The indicator provides an equivalent measurement of all types of policies that insulate producer prices from market fluctuations. In particular, the method treats market price support and deficiency payments in the same way.

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1. For a more elaborate discussion on this topic see Tangermann, 2005.

2. In the reality of complex market situations, pass-through of a given change in the border price to the domestic market may take some time. However, this does not change the fundamental point that in the absence of price support policies or other barriers, domestic market prices would fluctuate along with international prices and exchange rates.

386. The *contribution analysis* carried out by the OECD helps to interpret changes in the level of producer support from one year to another by mathematically isolating the impact of both the explicit and implicit components of agricultural support. It answers the question “what would be the impact of a policy component if all other policies were held fixed, *ceteris paribus*?” For example, what is the contribution of exchange rate to the observed change in the reference price? The analysis can be conducted for a given country or for the OECD as a whole, and can include one, several or all commodities. This discussion focuses on contribution analysis for individual countries and the OECD as a whole.

387. For individual countries, the contribution analysis is based on data expressed in national currency. To aggregate the PSE to an OECD level, a common currency must be chosen (section 9.1), leading to a systematic dependence on the currency chosen.

388. To mitigate this dependence, the contribution analysis calculates the annual percentage change in the OECD total PSE as an index of individual country PSE changes (in national currencies) weighted by the shares of the country PSEs in the OECD total PSE in the previous year. Similarly, the annual percentage change in the OECD total MPS is a weighted average of country MPS changes, with the weights being the shares of country MPS in the OECD total MPS in the previous year. An important feature of this weighting scheme is that countries (and commodities) are weighted according to their contributions to the total PSE (and MPS), rather than by their contribution to the value of production.

389. The elements of *the PSE contribution analysis* follow from the definition:

$$PSE = MPS_C + BOT_C \quad [11.1]$$

where:  $PSE$  – Producer Support Estimate for country  $C$

$MPS_C$  – Market Price Support for country  $C$

$BOT_C$  – Budgetary and Other Transfers to producers for country  $C$

390. The %change in the PSE can be decomposed into contributions from MPS, and budgetary and other transfers to producers respectively:

$$\begin{aligned} \% \Delta PSE^t &= \frac{PSE^t - PSE^{t-1}}{PSE^{t-1}} \times 100 \\ &= \left( \frac{MPS_C^t - MPS_C^{t-1}}{PSE^{t-1}} \times 100 \right) + \left( \frac{BOT_C^t - BOT_C^{t-1}}{PSE^{t-1}} \times 100 \right) \end{aligned} \quad [11.2]$$

where:  $t$  – current period (year)

$t-1$  – previous period (year)

391. The first half of the equation is the contribution from MPS, while the second half is the contribution from Budgetary and Other Transfers to producers. The calculations can be done at the national (aggregate) level because all variables are expressed as monetary transfers.

392. The *contribution from budgetary and other transfers* can be further decomposed into the different categories of the PSE classification (based on output, input use, etc.) as follows:

$$\begin{aligned} \% \Delta BOT_C^t &= \frac{BOT_C^t - BOT_C^{t-1}}{PSE^{t-1}} \times 100 \\ &= \left( \frac{PO_C^t - PO_C^{t-1}}{PSE^{t-1}} \times 100 \right) + \dots + \left( \frac{PM_C^t - PM_C^{t-1}}{PSE^{t-1}} \times 100 \right) \end{aligned} \quad [11.3]$$

where:  $PO_C$  – Payments based on output for country  $C$

$PM_C$  – Miscellaneous payments for country  $C$

393. The *contribution analysis for MPS* is based on the sub-total MPS value for the set of MPS commodities only, *i.e.* it excludes the aggregate “non MPS commodity” ( $MPS_{XE}$ ) as no representative

prices are available for this category ([section 6.1.3](#)). The methodology, similar to that described for the PSE above, utilises country-level data expressed in national currencies. As certain variables such as price and quantity produced cannot be added up, an index is created, using as weights the shares of MPS values for individual commodities ( $MPS_i$ ) in the aggregate value of MPS commodities ( $MPS_{AMC}$ ) in the previous period.

394. The elements of the MPS contribution analysis derive from the calculation of MPS as the level of production multiplied by a per unit MPS, measured as the difference between producer and border price of an agricultural commodity measured at the farm gate and adjusted for excess feed costs:

$$MPS_i = QP_i \times MPSu_i \quad [11.4]$$

$$MPSu_i = PP_i - RP_i + \frac{EFC_i}{QP_i} \quad [11.5]$$

where:  $MPSu$  – per unit MPS

395. The calculations are done at the individual commodity level because quantities cannot be meaningfully aggregated, *e.g.* tonnes of wheat and tonnes of beef. At the individual commodity level, the formula is:

$$\begin{aligned} \% \Delta MPS_i^t &= \frac{MPS_i^t - MPS_i^{t-1}}{MPS_i^{t-1}} \times 100 \\ &= \left( \frac{QP_i^t - QP_i^{t-1}}{abs(MPS_i^{t-1})} \times \frac{MPSu_i^t + MPSu_i^{t-1}}{2} \times 100 \right) + \left( \frac{MPSu_i^t - MPSu_i^{t-1}}{abs(MPS_i^{t-1})} \times \frac{QP_i^t + QP_i^{t-1}}{2} \times 100 \right) \quad [11.6] \end{aligned}$$

where:  $i$  – individual commodity

$abs(MPS)$  – absolute value of MPS

396. The first half of equation 11.6 calculates the contribution to the change in MPS arising from the change in quantity produced; the second half calculates the contribution arising from the change in  $MPSu$ . To ensure mathematical consistency in the rare instances where MPS is negative in the reference period, the absolute value of  $MPS^{t-1}$  is applied in the denominator of the decomposition.

397. The resulting percentage changes are then aggregated to a weighted average for all MPS commodities using as weights the previous-year shares of individual commodity MPS in the sub-total MPS for MPS commodities. Using commodity MPS shares as weights gives more importance to commodities with higher MPS. An alternative weighting could be based on value of production, but this would not reflect the pattern of support which is the focus of this exercise. Expressed algebraically:

$$\% \Delta MPS_C^t = \sum \left( \frac{MPS_i^{t-1}}{\sum_{i \in AMC} MPS_i^{t-1}} \times \% \Delta MPS_i \right) \quad [11.7]$$

398. The calculation may result in a very high percentage change in MPS for some countries, due to either: (a) a significant change in MPS, or (b) a modest change in MPS, but a very small MPS in the base year. In the latter case, the result needs to be interpreted with care. This potential shortcoming is also present in the calculations for PSE, but is more likely to occur here because the MPS for some countries is very small or close to zero.

399. The % change in *the reference price can be decomposed* into the contribution of exchange-rate changes and the reference price defined in US dollars:

$$RP_i^{LC} = XR \times RP_i^{USD} \quad [11.8]$$

where:  $RP^{LC}$  – reference price in local currency

$RP^{USD}$  – reference price in US dollars

$XR$  – exchange rate between local currency and US dollars

400. This assumption is reasonable for countries where US dollars represent a high share of international transactions. For other countries, another currency such as the Euro would be more representative. Nevertheless, “arbitrarily” choosing the US dollar facilitates cross-country comparisons. At the commodity level, the formula is:

$$\begin{aligned} \% \Delta RP_i^t &= \frac{RP_i^t - RP_i^{t-1}}{RP_i^{t-1}} \times 100 \\ &= \left( \frac{XR_i^t - XR_i^{t-1}}{XR_i^{t-1}} \times \frac{RP_i^{USD,t-1} + RP_i^{USD,t}}{2} \times 100 \right) + \left( \frac{RP_i^{USD,t} - RP_i^{USD,t-1}}{RP_i^{USD,t-1}} \times \frac{XR_i^t + XR_i^{t-1}}{2} \times 100 \right) \end{aligned} \quad [11.9]$$

where:  $RP$  – reference price

$RP^{USD}$  – reference price converted to US dollars

401. As in the decomposition for MPS in equation 11.8, the results can be aggregated to a weighted average for all MPS commodities, using as weights the MPS of each commodity in the previous year. Expressed algebraically:

$$\% \Delta RP_C^t = \sum \left( \frac{MPS_i^{t-1}}{\sum_{i \in AMC} MPS_i^{t-1}} \times \% \Delta RP_i^t \right) \quad [11.10]$$

402. The results of this contribution analysis are presented each year in the *Agricultural Policies in OECD Countries* reports (see, for example OECD, 2007; OECD, 2008b).

#### 11.1.4. Expressing the level of support in real terms

403. The PSE and TSE values, expressed in national currencies in nominal terms reflect, over time, also general inflation. Further, conversion of these indicators into the US dollars or Euros and their aggregation via these rates may lead to very different findings regarding support trends, depending on whether the value of the US dollar (or the Euro) appreciates or depreciates relative to the

local currency (as illustrated in Box 11.1). In years when the value of the dollar declines, aggregate PSEs expressed in dollars tend to rise, and fall if expressed in Euros.

404. Insofar as TSEs and PSEs for different years constitute transfers between farmers, taxpayers and consumers over time, it is appropriate to express these indicators in real terms. This is accomplished by deflating them by an index that accounts for inflation, such as the GDP price index, and aggregating them across the OECD area using purchasing power parities (PPPs) calculated according to the gross domestic product (GDP) of the various countries. Using this procedure, it is estimated that the PSE for the OECD area as a whole dropped in real terms by 27% between 1986-88 and 2000-02 (OECD, 2003). The OECD does not undertake these calculations on an annual basis, but periodically calculates and publishes the results.

## 11.2. Interpreting the composition of support

- Policy support to agriculture in OECD countries has altered significantly in composition since the mid-1980s.
- The composition of producer support can be shown in terms of PSE categories and sub-categories and labels, which focus on the implementation criteria of the policies.
- The composition of support to general services (GSSE) can be shown in terms of broad policy areas.
- The composition of total support to agriculture (TSE) can be shown in terms of who pays and who receives the transfers arising from policies.

### 11.2.1. Why analyse the composition of support?

405. When the indicators were first developed by the OECD in the mid-1980s, the vast majority of support was provided through policies that created transfers to producers through higher market prices or payments based on output. This allowed the focus of attention to be on the total level of support provided. Modern agricultural policy has increased in complexity, with the introduction of new policy objectives and new approaches to policy support undertaken to meet requirements imposed by multilateral commitments such as the WTO Uruguay Round commitments and Panel Decisions. Thus, as policies in OECD countries have been reformed over time, the issue of the composition of support has become more important.

406. Policies intended to have a reduced impact on production decisions, while still supporting farm income or the farm sector as a whole, have become more important. Policies increasingly deliver transfers not on the basis of commodity production (whether past or present) or input use, but on other bases such as farmed area, or overall farm income or non-commodity criteria. Many policies now provide transfers on the basis of a mixture of “current and past prices and production”, often with constraints imposed on the conditions under which farmers are eligible for payments. This requires making a better distinction between support to commodity production as such, or to inputs used to produce them, and support to the farm as an entity or the agricultural sector as a whole. These changes in policy implementation have led to the development of new PSE categories ([Table A2.1](#)), a new focus on the composition of the PSE as a means of understanding the effects, and the development of new tools and methods to analyse them ([Chapter 12](#)).

407. Policy developments in Switzerland illustrate this concern. The level of producer support in Switzerland, as measured by the %PSE, has fallen from 77% to 60% between 1986-88 and 2005-07 – seeming to indicate relatively modest progress towards policy reform. However, over this period,

Switzerland has made significant changes to its agricultural support policies. While relatively high tariffs and tariff rate quotas remain in place, Switzerland has abolished all state guarantees for prices and sales. It has also reformed the way in which direct payments are provided to farmers, replacing most of the previous programmes with two main types of payments: *General Direct Payments*, mainly granted in the form of area and headage payments on condition that farmers comply with a set of environmental farm management practices; and *Ecological Direct Payments*, mainly granted to compensate farmers for undertaking additional environmental or animal welfare practices.

### 11.2.2. Composition of producer support – PSE categories

408. The composition of support is reflected in the PSE by the share of support that falls into each of the PSE categories or sub-categories (see [Box 3.2](#) for definitions of the seven PSE categories and various sub-categories]. The PSE category values can be expressed as shares of the PSE, with the sum of the category shares equalling 100%. Alternatively, they can be expressed as shares of gross farm receipts, summing to the %PSE. This latter approach has the advantage of showing both the level and composition of support together. Table 11.2 and Figure 11.4 illustrate how the composition of support to producers can be shown for a country.

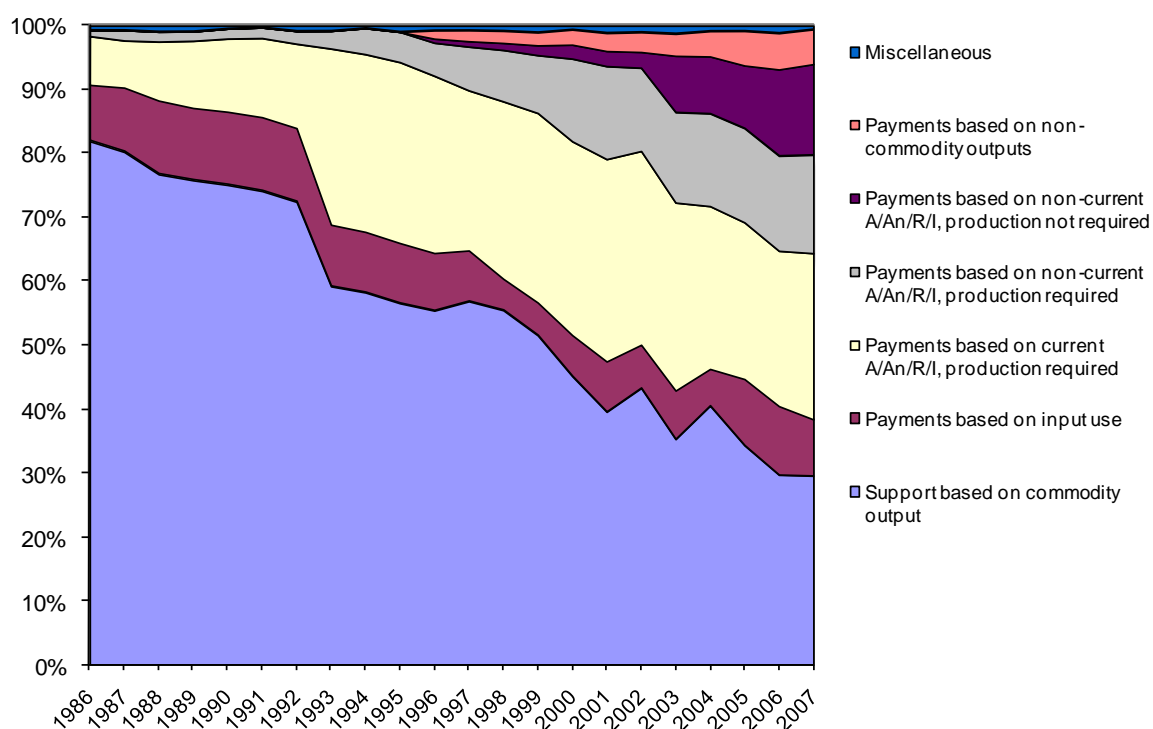
**Table 11.2. Composition of PSE  
(example)**

PSE Categories	LC million		Share of PSE		Share of Gross Farm Receipts	
	1986-88 average	2005-07 average	1986-88 average	2005-07 average	1986-88 average	2005-07 average
A. Support based on commodity output	6 000	2 500	80%	31%	32%	6%
B. Payments based on input use	750	800	10%	10%	4%	2%
C. Payments based on current A/An/R/I, production required	600	2 000	8%	25%	3%	5%
D. Payments based on non-current A/An/R/I, production required	100	1 200	1%	15%	1%	3%
E. Payments based on non-current A/An/R/I, production not required	0	1 000	0%	13%	0%	2%
F. Payments based on non-commodity criteria	0	440	0%	6%	0%	1%
G. Miscellaneous	50	60	1%	1%	0%	0%
Total PSE	7 500	8 000	100%	100%	40%	20%

409. Table 11.2 and Figure 11.4 show that while the level of producer support (%PSE) has fallen by half, significant improvements have also been made in shifting away from support based on commodity outputs, which is the most production-distorting. In 1986-88, 80% of producer support arose from policies providing support based on commodity output (category A). By 2005-07, the importance of output-based support had fallen considerably, comprising 31% of producer support. On the other hand, payments based on current parameters (category C) had risen significantly, from 8% of gross farm receipts in 1986-88 to 25% in 2005-07. Payments based on non-current parameters and not requiring production (category E), while non-existent in 1986-89, now represent 13% of producer support. Also, payments based on non-commodity criteria have been introduced and reached 6% of producer support.

410. In a similar way to the PSE, the producer SCT indicator can be broken down into the various policy categories. As the producer SCT indicator is made up of a smaller number of categories (*i.e.* it excludes categories of support which require no commodity production — E and F — and miscellaneous payments), the usual breakdown is into three components at the sub-category level: MPS (sub-category A.1), Payments based on output (sub-category A.2), and Other SCT (in categories B, C and D) — mostly payments based on area or animal numbers.

Figure 11.4. Composition of PSE (example)



### 11.2.3. Composition of producer support – labels

411. When policies are classified in the various PSE categories, they may also be labelled according to certain policy characteristics relating to the provision of support. Labels (see [sub-section 3.3.3](#) for full definitions) can be used to produce different aggregations of payments, emphasising a specific implementation criteria used in the policies applied, in addition to those reflected by the PSE categories:

- with or without current commodity production limits and/or limits to payments (L)
- with variable or fixed payment rates (V/F)
- with or without input constraints (C)
- based on area, animal numbers, receipts or income (A/An/R/I)
- based on a single commodity, group of commodities or all commodities (SC/GC/AC)
- with or without commodity exceptions (E)

412. The composition of support classified by label can again be presented in either graphical or tabular form. However, using labels to create tables or figures requires attention to the scope of the data shown with respect to the PSE. Labels create subsets of either the PSE itself or PSE categories, and when used in combination, create subsets of subsets. For example, a table showing the share of support with production and payment limits for the PSE as a whole, and another table showing the share of support with production and payment limits for the subset of support based on area (another

possible label) can be visually similar, even though they would contain very different numbers with a different interpretation.

#### 11.2.4. Composition of producer support – degree of commodity specificity

413. Particular attention is required in using the label which indicates the degree of commodity specificity of policies – that is, the share of Single Commodity Transfers (producer SCT), Group Commodity Transfers (GCT) and All Commodity Transfers (ACT) in the PSE. Like the other composition elements, these can be expressed as a share of PSE (adding to 100%) or as a share of gross farm receipts (adding to %PSE). These can also be shown in tabular or graphical form. Table 11.3 and Figure 11.5 illustrate how the composition of producer support based on the degree of commodity specificity can be shown for a country.

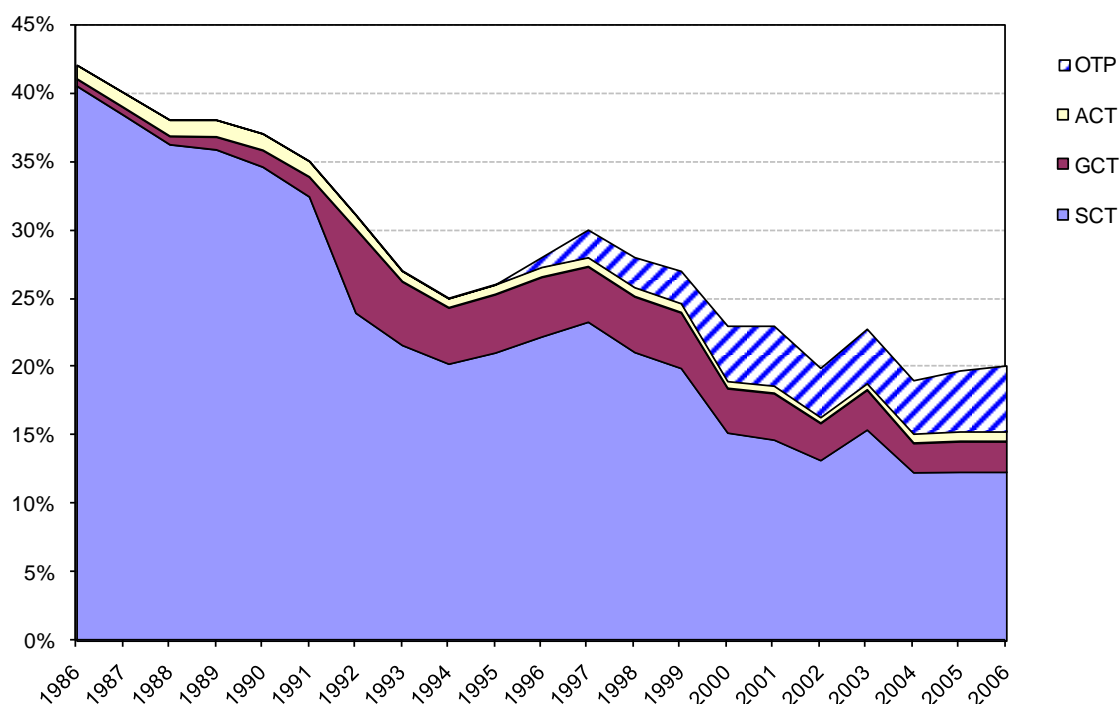
**Table 11.3. Breakdown of PSE by degree of commodity specificity (example)**

PSE Categories	LC million		Share of PSE		Share of gross farm receipts	
	1986-88 average	2005-07 average	1986-88 average	2005-07 average	1986-88 average	2005-07 average
Single Commodity Transfers (SCT)	7 200	4 000	96%	50%	39%	10%
Group Commodity Transfers (GCT)	100	1 200	1%	15%	1%	3%
All Commodity Transfers (ACT)	200	400	3%	5%	1%	1%
Other Transfers to Producers (OTP)	0	2 400	0%	30%	0%	6%
Total PSE	7 500	8 000	100%	100%	40%	19%

414. SCT made up 50% of the PSE in 2005-07, a reduction from 96% in 1986-88. GCT, where producers have the option to produce any of a specified group of commodities as part of programme eligibility, made up 15% of the PSE in 2005-07 compared to 1% in 1986-88. Transfers provided under the headings ACT and OTP place no restriction on commodities that farmers choose to produce, the latter also not requiring farmers to produce at all.<sup>23</sup> Together, these two made up 35% of the PSE in 2005-07, up from 2% in 1986-88. The commodity specificity composition of producer support in the example shows a progression in policy support away from SCT, first towards GCT, and then more recently towards OTP transfers.

23. OTP transfers, while not requiring production, may at the same time limit production choices should production actually take place. This occurs when OTP transfers involve prohibitions on the production of certain commodities (this policy implementation characteristic is designated by the label “with commodity exceptions”).

**Figure 11.5. PSE level and commodity specificity (example)**  
In per cent of gross farm receipts



### 11.2.5. Composition of support to general services

415. As for the PSE, the policies that are combined to calculate the GSSE are grouped into categories of expenditure (see [section 3.4](#) for an explanation of the categories). The breakdown is made on the basis of specific activity or type of service, rather than implementation criteria. Table 11.4 illustrates how the composition of support to general services can be shown for a country.

**Table 11.4. Composition of GSSE by category (example)**

GSSE Category	1986-88 average		2005-07 average	
	LC million	Share of GSSE	LC million	Share of GSSE
Public Stockholding	400	50%	200	10%
Marketing and Promotion	50	6%	400	19%
Infrastructure	120	15%	800	39%
Research and Development	140	18%	400	19%
Agricultural Schools	50	6%	100	5%
Inspection Services	40	5%	150	7%
Miscellaneous	0	0%	0	0%
<b>Total GSSE</b>	<b>800</b>	<b>100%</b>	<b>2 050</b>	<b>100%</b>

416. The example reflects the relative importance of the various GSSE categories and how they have changed over time. For example, spending on Public Stockholding has fallen, reflecting a reduction in the budgetary costs of maintaining MPS to producers, or a move away from a policy of food security/stocks. At the same time, a higher share is being spent on Marketing and Promotion. A number of example countries are increasing spending on Infrastructure to improve the efficiency of the sector in response to increased competition. Support for Agricultural Schools and for Research and Development has been fairly stable as a share of GSSE expenditure. The share of Inspection Services is fairly low in most countries, but has generally increased, reflecting greater policy focus on food safety and the rising costs of protecting sanitary and phyto-sanitary standards given the increase in trade.

### 11.2.6. Composition of total support to agriculture

417. There are two ways in which the composition of total support can be shown – the first shows *to* which economic group the transfer is provided; the second shows *from* which economic group the transfer originates, *i.e.* who is bearing the cost of the support policies (illustrated in Table 8.2).

418. In terms of recipients, the TSE can be separated into three components: the PSE, the GSSE, and transfers to consumers from taxpayers. The third component measures the value of transfers received by consumers and not transfers *from* consumers in terms of higher prices, *i.e.* it is only one specific component of the CSE. Table 11.5 illustrates how the composition of total support can be broken down for a country.

**Table 11.5. Composition of TSE by recipient of transfer (example)**

Recipients	1986-88 average		2005-07 average	
	LC Million	Share of TSE	LC Million	Share of TSE
PSE	7 500	76.5%	8 000	79.2%
GSSE	800	8.2%	2 050	20.3%
Transfers to consumers from taxpayers	1 500	15.3%	50	0.5%
TSE	9 800	100%	10 100	100%

419. In interpreting policy developments, the share of GSSE in total support is emphasised, *i.e.* the %GSSE, which shows the importance of transfers that are not received by individual farmers within overall support. GSSE transfers do not depend on any individual farmers' decisions to produce goods or services, or use factors of production, and they do not affect farm receipts directly. In the example given, it can be stated that support for general services provided to agriculture increased from 8% of total support in 1986-88 to 20% in 2005-07.

420. The TSE can also be separated into three different components, *i.e.* transfers from consumers, transfers from taxpayers and budget revenues. The third component is negative, recognising that a part of the transfers from consumers is received by government in terms of tariff revenue, which offsets some of the taxpayer cost. Table 11.6 illustrates how this composition of total support can be shown for a country.

421. In most OECD countries, consumers have traditionally borne the largest share of the cost of total support. Policy reforms have almost always emphasised a desire to reduce the consumer cost of agricultural policies, and to offset the reduction in producer returns by increased budgetary payments. This would be shown by a decrease in the value of transfers from consumers and an increase in transfers from taxpayers. As can be seen in Table 11.6, this is exactly what has happened in the example. The composition of total support reinforces the changes previously seen in the composition of producer support.

**Table 11.6. Composition of TSE by source of transfer  
(example)**

Sources	1986-88 average		2005-07 average	
	LC million	Share of TSE	LC million	Share of TSE
Transfers from consumers	7 500	76.5%	5 300	52.5%
Transfers from taxpayers	2 800	28.6%	5 000	49.5%
Budget revenues	-500	-5.1%	-200	-2.0%
TSE	9 800	100%	10 100	100%

### 11.3. Some common misunderstandings of the indicators

422. Since their introduction in the mid-1980s, the OECD indicators have become an established reference on support levels in agriculture. The popularity of these indicators is largely explained by the relative simplicity of the underlying concepts, international comparability, broad country coverage and availability of annual updates. The PSE indicator in particular attracts much public attention and receives wide media coverage. However, the popularity of the indicators may mean that they are sometimes misunderstood, and numerical results are misinterpreted. This section highlights some common misunderstandings of the indicators, focussing specifically on the PSE as the most widely referenced indicator.

423. One simple *misunderstanding is that the PSE includes budgetary payments only*. This is the case when it is (wrongly) understood that a country's PSE of, say, USD 100 billion implies that this sum has been entirely financed from the government budget. This misunderstanding is further promoted if the PSE is said, as sometimes done in the media, to represent "subsidies" to farmers. It is important to bear in mind that the PSE value, in addition to budgetary expenditures, includes other transfers, which do not require actual monetary disbursements. Market Price Support is one form of such transfers, being "financed" by domestic consumers who buy agricultural commodities at prices above the international levels. Implicit support to agricultural producers may also be provided through concessions on taxes, interest rates, or input prices. Such support usually involves no flow from government funds, but nevertheless represents real transfers. They are expressed in monetary terms, and are accounted for in the PSE indicator together with the budgetary payments. On the other hand, some expenditures in the agricultural budget are not included in the PSE in order to avoid double counting with non-budgetary support, or because they are not included in the PSE by definition (such as, for example, administration costs). Budgetary disbursements make up only a portion of the total PSE, which also includes elements other than actual budgetary disbursements.

424. Misconceptions also occur concerning the "gross transfer" nature of the PSE. This leads to a typical *misunderstanding that the PSE shows additional producer income*. It may be tempting to conclude that farm incomes increase by the amount of support provided, e.g. that a PSE of

USD 100 billion means that farm income is higher by that amount due to support policies. Yet, this is not the case. Gross policy transfers (the PSE) reflect the provision of support, while producer income is an effect of support (and of other factors). The relation between gross transfers and producer income can be complex, and is likely to vary over time as farmers react to introduced measures. Some of the gross transfers made to support producers may be lost due to transfer inefficiencies closely related to market distortions caused by the support policies. Typical cases are higher expenditure on variable inputs or increased cost of land and quotas. The extent to which gross policy transfers are translated into farm income can vary significantly, *e.g.* according to the types of policies used to support agriculture, but it will be lower than the increase in gross farm receipts as measured by the indicators. For example, OECD analysis (OECD 2001) shows that the income effect of MPS can be as low as 25%, meaning that only 25 cents of each additional dollar provided as MPS is actually retained by farmers as “income” while the rest is captured by input suppliers or is lost in economic inefficiencies such as resource misallocation.

425. It is also important to understand clearly that *the PSE should not be considered as an indicator of trade distortions*. The PSE is an aggregate measure of transfers resulting from a wide variety of policies, all of which may have different effects on quantities produced and consumed, and hence on trade. For example, a payment to farmers that does not require production is likely to have much less effect on supply and demand of products than Market Price Support which results in the same gross transfer to farmers. Without taking a close look at the composition of support from different types of policies, it is impossible to say anything about the trade implication of a given PSE. It is perfectly possible that a country with a constant PSE over time has changed its policy composition in a way that significantly reduces the trade distortion resulting from support provided to its farmers.

426. Bearing in mind that any changes in support lead to economic adjustments is important in order to avoid another *mistake, i.e. to suggest that aggregate producer gross receipts would decline by the PSE value if all agricultural policies were removed*. For the OECD as a whole, this value was equivalent to USD 258 billion (EUR 187 billion) in 2007. As emphasised throughout this Manual, the PSE captures support to producers in current world market conditions. These conditions are themselves affected by current agricultural policies and would change following the removal of all agricultural policies. In particular, prices and quantities, and therefore producer gross receipts could be expected to adjust.

427. In order to avoid misinterpretations of the PSE, it is therefore important to keep in mind that it is *not* an indicator of the *impacts* of policy measures. The analysis of policy impacts involves moving beyond the PSE framework to policy simulation modelling, which gives an indication of the effects of changes in the PSE on production, incomes, trade, and environment. Chapter 12 describes the OECD policy models and how the PSE analysis feeds into these.

428. The previous examples related to conceptual misunderstandings of the PSE. The indicator may also be misinterpreted if insufficient attention is paid to the economic and policy context, especially when interpreting variations in the PSE over time.

429. One *misinterpretation* of this kind is to consider that a change in the PSE necessarily implies change in policy settings. As noted, support – in particular Market Price Support that is based on the gap between producer and border prices – is measured against current market conditions. When border prices change due to variations in world market prices or exchange rates, domestic producer prices may not follow (because measures are in place that prevent them from doing so) and hence the Market Price Support element in the PSE will change. Such variation in the PSE is nevertheless an appropriate reflection of the nature of market price support policies. It indicates that these policies, *e.g.* the border

regime in place, insulate domestic markets from changing world market conditions, and provide an amount of support that varies over time in relation to the world price. This “working” of price policies is similar to that of deficiency payments, whose size also fluctuates depending on market conditions, resulting in an equivalent change in the PSE.

430. It would be *equally erroneous to conclude that an unchanging PSE necessarily implies no change in policies*. In fact, the policy settings may change, but the overall amount of policy transfers to producers, as measured by the PSE, may not. For example, in order to pursue new objectives, *e.g.* agri-environmental sustainability, government may introduce new payments to producers. However, this increase may well be offset by a reduction in the Market Price Support component if supported prices are cut simultaneously, with the result that the PSE value remains unchanged. This should be kept in mind in particular when evaluating a country’s progress in policy reform over time. *The PSE number alone is not sufficient to indicate progress (or lack of it) in policy reform*. This is in particular the case when the reform is more characterised by re-instrumentation of support (towards less production and trade-distorting forms) than by reduction in the overall support level. The changes in the PSE composition, *i.e.* in the shares of various policy measures constituting the PSE, are as important an indication of the reform process as the aggregate PSE level.

431. In conclusion, attention to the underlying concepts and to the overall policy context is essential in interpreting the PSE. As has been shown in this Chapter, all dimensions of the PSE – its level, its composition in terms of support categories and commodity specificity, and the factors driving annual and long-term changes – should be considered when evaluating developments in producer support.

## Annex 11.1.

**Comparing the OECD indicators of support to producers  
with other measures of support**

432. In addition to the OECD indicators, there are a range of other measures which can be used to calculate support provided to agriculture. These have various strengths and limitations, and the choice among such measures depends on both practical considerations such as data availability and on the nature of the issues to be analysed.

*Comparison with other economic measures*

433. Four widely known measures are used in various studies to estimate support: the nominal rate of protection (NRP), the nominal rate of assistance (NRA), the effective rate of protection (ERP) and the effective rate of assistance (ERA). An overview of recent studies using these indicators is contained in Box A11.1. The NRP measures the increase in gross receipts from the sale of the commodity; the NRA measures the increase in gross receipts including support not linked to the sale of the commodity. The ERP measures the increase in the value added from the sale of the commodity, *i.e.* taking into account the price of inputs; the ERA measures the increase in value added from both the sale of the commodity and support not linked to the sale of the commodity.

434. Consequently, the measures can be distinguished with regard to the breadth and depth of policy coverage, and the economic value used for measuring the level of support (Table AII.1). In terms of policy coverage, assistance measures (NRA and ERA) are *broader* than protection measures (NRP and ERP) in the sense that they include a wider range of support policies for a particular sector than just policies that affect output prices. The NRA builds on the NRP by including, for example, payments based on area or animal numbers.

**Table AII.1. Policy coverage of other measures of support**

Policies affecting the price of intermediate inputs included (depth)	Sectoral policies included (breadth)	
	Policies affecting the market price (e.g. tariffs)	plus other support policies (e.g. input subsidies)
No	NRP	NRA
Yes	ERP	ERA

435. Effective measures (ERP and ERA) are *deeper* than nominal measures (NRP and NRA) in the sense that they also take into account the impact of government policies which support (or tax) the input sectors, thus affecting the cost of intermediate inputs and hence the net or “effective” level of support in terms of returns. The ERP deepens the NRP by taking into account the protection provided through border policies on intermediate inputs, *e.g.* tariffs raising farmers’ input costs. However, the ERP is not as broad as the NRA in terms of the sectoral support policies included. The ERA is the most comprehensive measure. The effective measures take into account assistance on production and inputs used. They measure the assistance to the activity rather than to the product itself.

436. All four indicators are ratios, meaning that they measure relative support. As a basis for measuring relative support, nominal indicators are calculated on a *producer receipt basis*, with the level of support being the increase in producer receipts in the presence of the policies relative to receipts valued at border prices. In comparison, effective measures are calculated on a *value-added basis*, with the level of support being the change in value-added relative to the estimate of value-added at border prices.<sup>24</sup> Effective coefficients may be negative, indicating that the protection/assistance offered on the final product is more than offset by the impact of protection/assistance on intermediate inputs.

437. The main advantage of effective measures is that they show the potential impact of government intervention on resource allocation since resources move between alternative activities not according to gross revenue but in accordance with the return to factors employed in that sector. The superiority of effective measures over nominal measures is more pronounced the more important are input policies, and the smaller is the share of value-added in producer returns (Josling and Tangermann, 1989). However, the calculation of effective measures requires detailed input-output coefficients which can be difficult to find, as well as a greater range of sectors for which policy measures need to be found and transfer values determined.

438. Comparing the OECD indicators with these four standard producer support measures, it can be observed that all OECD support indicators are nominal rather than effective measures of support (although excess feed costs of livestock producers are subtracted from PSE). The advantage of the nominal over effective support indicators is that they need less data, and are therefore more suited to annual policy monitoring.

439. The OECD's NPC and NAC are concepts analogous to the NRP and NRA. The distinction between the two pairs of indicators is in the algebraic expression of the measured ratios. The NPC is a simple ratio between producer<sup>25</sup> and border price, while the NRP is a ratio between the Market Price Differential (producer price minus border price) and the border price. The NRP therefore is equal to NPC minus unity, and the NRA is NAC minus unity. The names of the indicators point at this distinction – the NPC and NAC are called “coefficients”, while NRP and NRA are called “rates”.

440. The OECD's PSE is close to NRA, in that in addition to output based support it includes other policies, among which are subsidies on the use of fertiliser, chemicals and other inputs. However, similarly to the NRA, the PSE does not account for support to the input sector linked to agricultural input prices, e.g. import tariffs on inputs, and so the PSE, and its derived indicator the %PSE, are measures of nominal and not effective support. The %PSE is also close to NRA in the sense that both are “rate” measures, as discussed above. The %PSE has the Market Price Support component in its numerator, which in turn is based on the Market Price Differential between domestic and border prices.

441. The %PSE, however, stands apart from all support indicators discussed here, with respect to the basis it uses for measuring the level of support. Both nominal support indicators (NRP and NRA, and the NPC and NAC), and effective support indicators (ERP and ERA), use producer receipts, or the value-added in the case of effective support indicators, which are valued at border prices. In contrast, the %PSE relates support to producer receipts valued at domestic (producer) prices.

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24. Value-added is the difference between the value of final production and the value of the intermediate inputs entering into production.

25. Recall that OECD's producer NPC adds unit output payments to producer price (equation 6.16).

**Box A11.1 Support indicators in non-OECD agricultural policy studies**

The NPR, EPR, NRA and ERA indicators are frequently used in policy analysis, particularly in studies that focus on policy distortions and their associated production, trade and welfare impacts. Closely related to trade tariffs, the NPR and EPR concepts were initially used in studies on trade protection, with early references going back more than a century. However, these indicators became known most widely through works of Balassa (1965), Corden (1971), and Vernon *et al.* (1965), and the many empirical studies during the 1960s and 1970s which they inspired. These studies had significant impact on the GATT process, and the analytical instruments it applied continue to be used today. To provide a comprehensive overview of the studies that estimate and use the support indicators would be too onerous a task; it is however worthwhile highlighting some of the more recent works.

The World Bank has long been involved in the measurement of agricultural policy distortions given their interest in analysing policy impacts on poverty and development. The most comprehensive study, led by Krueger, Schiff and Valdés, was published in 1991-92 in the five-volume *The Political Economy of Agricultural Pricing Policy* (Krueger *et al.*, 1991 and 1992). This study covered the period of 1950-1992 and included 18 developing countries in Latin America, Africa and Asia. It sought to analyse the scale of policy distortions in agriculture, in particular those affecting producer prices. The analysis distinguished between price distortions arising from agricultural and non-agricultural policies (such as industrial protection and exchange-rate misalignment). Capturing these two different policy sources of distortions, the study estimated what it named the “direct” and “indirect” NPRs, as well as the aggregate of the two, called the “total” NPR. The latter corresponded to the concept of effective protection because it captured protection of both agricultural and non-agricultural prices. A key conclusion of this study was that agricultural producers in developing countries were considerably taxed by both agriculture-specific and non-agricultural policies, with taxation from the latter often outweighing taxation from agricultural interventions as such. This analysis was later continued in the World Bank’s regional policy studies on Latin America (Valdés 1996) and transition economies (Valdés *et al.* 2000), which estimated NPR, EPR and ERA indicators for countries in these regions during the period of profound policy reforms in the 1990s.

In 2006, the World Bank launched a large project entitled *Distortions to Agricultural Incentives* (DAI) and led by Kym Anderson ([www.worldbank.org/agdistortions](http://www.worldbank.org/agdistortions)). One of the objectives was to analyse how policy biases against agriculture have changed since the Krueger-Schiff-Valdés study. The analysis was extended to a wider range of countries, including 44 major developing countries and the European transition economies. The project has broad analytical scope and, following the approach of the Krueger-Schiff-Valdés study, seeks to differentiate and quantify various sources of policy distortions in agriculture. A methodology was developed to calculate a set of policy indicators based on the NPR, EPR and NRA concepts. The initial findings of this study were published in the World Bank’s *2008 World Development Report* (WB 2007). The authors conclude that the broad macroeconomic and agricultural reforms in the 1980s and 1990s reduced overall both the agricultural and non-agricultural policy taxation of producers. This aggregate result, however, masks continued taxation of export-oriented sectors, and high levels of protection in some import-competing sectors in developing and transition economies.

In recent years, a number of research groups have become involved in estimating the PSEs for developing countries. These studies were largely prompted by the resumption of multilateral trade negotiations within the WTO, and by the fact that the Doha round has placed particular focus on the concerns of developing countries. These studies complemented work by the OECD to extend the PSE analysis to key developing economies, such as Brazil, China and South Africa (OECD 2005, OECD 2005, OECD 2006b).

Tian, Zhang and Zhou (Tian *et al.* 2002) and Cheng (2001) produced PSE estimates for China, and Gulati and Narayanan (2003) for India. Some of this research fed into a larger study by the International Food Policy Research Institute (IFPRI), which estimated the PSEs for India, Indonesia, China and Vietnam (Orden *et al.* 2007). IFPRI’s study used the OECD methodology and also introduced approaches to deal with specific issues in estimating support for developing countries. These issues include the weak links of some agricultural sub-sectors with external markets, and the difficulties in defining the appropriate opportunity cost for domestic production so as to measure support levels. The IFPRI study also attempted to deal with the problem of diversity in regional policies, as well as exchange-rate distortions. Based on the results for the four countries, IFPRI found that previous policy taxation of the agricultural sectors was reduced, and since the end of the 1990s has turned into support. This result is broadly consistent with OECD and World Bank analysis.

***Comparison with the WTO Aggregate Measurement of Support***

443. OECD indicators are often compared to the measures of support developed to establish and monitor the implementation of the domestic support reduction commitments under the WTO Uruguay Round Agreement on Agriculture (URAA). In particular, the PSE is often compared to the Aggregate Measurement of Support (AMS). Because the AMS was developed from the concept of the PSE, both

indicators are constructed in a similar way. Both: include market price support, budgetary outlays and revenue foregone by governments; account for national and sub-national support; deduct agriculture specific levies or fees paid by producers; and are measured on an annual basis.

444. However, while the AMS is conceptually based on the PSE, it has been developed in the context of international trade negotiations. Consequently, the AMS has some unique characteristics which are not necessarily based on purely economic criteria. As with the four economic measures discussed above, distinctions between the PSE and the AMS can be made in terms of policy coverage and economic value used to measure support (Diakosavvas, 2002).

445. In terms of policy coverage, the AMS is a narrower concept than the PSE, being designed to cover only domestic policies considered trade-distorting. In contrast to the PSE, the AMS does not include support to producers provided through:

- trade policies, *e.g.* tariffs and export subsidies, because these policies are covered under the market access and export competition disciplines of the URAA, and the AMS includes an estimate of market price support only when an administered price exists
- programmes that meet the specific production limiting requirements of Article 6, paragraph 5 of the URAA, the “Blue Box”
- policies that meet the criteria of Annex 2 of the URAA, the “Green Box”<sup>26</sup>
- certain development programmes including investment and input subsidies in developing countries under Special and Differential Treatment (Article 15 of the URAA)
- policy support that would otherwise be included but are excluded because the level of product-specific or non-product-specific domestic support falls below a specified *de minimis* level, 5% for developed and 10% for developing countries of the value of production (Article 6, paragraph 4 of the URAA).

446. In terms of economic value, the PSE is a measure of actual “current” support to agricultural producers, while the AMS is not. Although both indicators include Market Price Support, there are important differences in the way that they are calculated. In the PSE, MPS is calculated using current prices, *i.e.* domestic producer and reference prices pertaining to the year in question. In the AMS, MPS is calculated using domestic administrative support prices and a fixed reference price, defined as border prices in domestic currency in a base period, generally the three-year 1986-88 average. The value of MPS calculated in the AMS does not provide a figure for the support actually being received by producers.

447. In comparison to the PSE, the AMS is therefore narrower in scope and does not measure “current” support to agricultural producers. Given the different purposes for which the two methodologies were developed, the indicators are bound to differ, and caution should be exercised when comparing them. While the WTO methodology is a legal device for negotiating and monitoring domestic support commitments, the OECD methodology aims at obtaining a comprehensive economic picture of the actual level and composition of agricultural support.

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26. It should be noted that policies excluded from the AMS because they meet the requirements of paragraph 2 (General Services) of the Green Box are also *not included* in the PSE, and are instead *included* in the GSSE.