

Adding value to applied policy models: The case of the WTO and OECD support classification systems

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Abstract

Both the OECD and the WTO have accumulated systematic data on the magnitude of support going to farmers as a result of farm policies. The datasets are collected for different purposes but both give a detailed picture of the evolution of these policies. This paper extends recent work on the compatibility or otherwise of these two attempts at policy monitoring by considering the categorization of individual policy instruments in Norway, Switzerland, the US and the EU. The results show how the OECD data set, particularly with respect to the link between direct payments and production requirements, complements that of the WTO. Many payments classified as in the WTO Green Box require production, raising the possibility that they may not be in practice trade-neutral. Though the issue of correct notifications to the WTO is the province of lawyers the implications for modeling and policy analysis is of interest to economists. And the broader question of improving the consistency of the two datasets is of importance in the quest for transparency in the interpretation of changes in farm policy.

JEL classification: C81, H50, Q17, Q18

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1. Introduction

This paper examines the potential for applied policy analysis of agricultural and trade policies of a fuller utilization of the information contained in the WTO and OECD support classification systems. This could increase the added value of models for policy makers, government officials, researchers and other end-users of model results.

The starting point of our paper is two observations related to the current use of the two systems in applied policy models. First, although the OECD support system indicators (embodied in the PSE database) are frequently used as a data input for models, less work has been done that makes use of the richness of the classification underlying the policy indicators in the OECD system in such models. Secondly, while there has been much emphasis on the market access and export subsidies components of the Uruguay Agreement on Agriculture (AoA) and the current Doha negotiations, less analytical effort has been devoted to domestic support, the third of the pillars of the AoA. There has been little use of the WTO system of notification of domestic support as an input for policy models, and no attempt to develop model-based indicators that reflect WTO-notifications of domestic support.

There may be several reasons why there has not been a more systematic use of the two classification systems for modeling purposes. There currently seems to be a lack of political demand for such modeling. The OECD regularly publishes its PSE calculations, providing commentators with fodder for a news story or two. But governments do not appear to show the same interest in these indicators as they did twenty years ago. And the public discussion of the WTO notifications is virtually non-existent. This may be due to the fact that the WTO domestic support commitments do not seem to restrict policy design for most members. This picture may change if political focus turns towards domestic support, either in the realm of the conclusion of the Doha-round or in case of an increase in the number of dispute settlements based on an alleged faulty notification of domestic support measures.

However, even in the absence of strong demand for the results, there is an active community of scholars who follow in detail the changes in agricultural policy and trade-related aspects of the food system. Economic models help to explain and elucidate such policy developments. But many models treat policy instruments at a fairly aggregated level, and are rarely able to make use of the detailed information contained in the classification systems. The level of aggregation of commodities in models also makes it difficult to use detailed OECD or WTO data.

It is widely understood that there are considerable differences in aim, method, and coverage between the OECD and the WTO databases. A casual comparison of the two systems with regard to the conceptual design and the numerical results indicates these differences. This appears to have led to the wrong conclusion that the two systems are incomparable. In fact, both systems use the same sources (i.e., data on policy expenditure and support prices from national governments) and use the same unit of analysis (i.e., single policy instruments) thus facilitating comparison. The more one thinks of these two systems as being complementary rather than unconnected the easier it is to define their relevance for policy models.

While the slack demand by politicians for indicator-based policy analysis is out of control for modelers, and the issues of aggregation are dealt with in other papers in this session, this paper

focuses on the issue of complementarity. It expands on the work of Burfisher *et al.* (2001), Orden *et al.* (2011) and Effland (2011) by applying a measure-by-measure comparison of the two systems. The analysis reveals the close complementarity of the two systems, and illustrates how the method may add value on its own (e.g., providing timely Pre WTO-notifications from the OECD system) and with regard to applied policy models. As a specific use of the approach taken here, we examine the information from four developed countries that illustrate the relationship between the OECD and WTO data and the consistency between the elements of the WTO green box, supposedly unrelated to production levels, and the way in which the OECD classifies these policy instruments as to whether they require production. Where there are discrepancies between the classification systems we argue that the policy analyst and modeler need to understand the reasons.

2. The Two Domestic Support Classification Systems Compared

Our comparison is based on publicly available WTO and OECD datasets covering the years 1995 to 2010 (OECD 2011, WTO various). The matching process was accomplished by comparing policy instruments on a measure-by-measure basis. In many cases the program titles and the monetary volume of the measures are very close so as to facilitate reliable matching. Other cases were less clear-cut. We used our best judgment to identify matching policy instruments where possible: for others that could not be plausibly matched we placed in a separate category ‘Not covered’¹.

The OECD Classification

Table 1 shows the categories of the PSE-database. It includes three different components: the ‘traditional’ PSE containing transfers received by farmers from consumers and taxpayers, the GSSE (General Services Support Estimate) that lists measures to support general services provided to agriculture and financed by taxpayers, and the CSE which covers transfers from consumers to producers and from taxpayers to consumers. The ‘traditional’ PSE is the most commonly used measure in the PSE-database. We include the GSSE and those parts of the CSE where the support covered in these categories is reported in the WTO-notifications. The PSE-database contains nine categories of support for the PSE and seven categories for GSSE. The PSE includes transfers received by farmers from consumers and taxpayers, while the GSSE contains measures to support general services provided to agriculture and financed by taxpayers. The first two PSE categories (A1 and A2) contain payments linked to output, while the next three categories (B1, B2, and B3) cover payments based on input use. Market price support (MPS) is measured by the OECD using actual domestic and world market prices multiplied by eligible production. Hence, MPS measures the value of border protection applied to sustain the (positive) difference between the domestic price and the international price. Other PSE categories (C to E) cover payments based on current or non-current acreage, animal numbers, receipts or income. Finally, there are categories for payments based on non-commodity criteria (F) and miscellaneous payments (G).

¹ The listing of instruments and their matching is shown in an Annex to Mittenzwei and Josling (2012).

Table 1. Definition of categories in the OECD PSE support classification system

PSE	
A1	Market price support
A2	Output payments
B1	Variable input use
B2	Fixed capital formation
B3	On-farm services
C	Current A/An/R/I ¹⁾ , production required
D	Non-current A/An/R/I ¹⁾ , production required
E	Non-current A/An/R/I ¹⁾ , production not required
F	Non-commodity criteria (long-term resource retirement (F1), a specific non-commodity output (F2), other non-commodity criteria (F3))
G	Miscellaneous payments
GSSE	
H	Research and development
I	Agricultural schools
J	Inspection services
K	Infrastructure
L	Marketing and promotion
M	Public stockholding
N	Miscellaneous payments
Relevant part of CSE	
Q1	Commodity specific transfers to consumers from taxpayers
Q2	Non-commodity specific transfers to consumers from taxpayers

¹⁾ Area, number of animals, farm receipts or farm income

Source: OECD (2011)

The GSSE is divided into seven groups (H to N) that range from research and development to infrastructure, marketing and promotion and other services. To simplify the presentation, we refer to these categories as PSE-categories H to N, although they are strictly speaking not part of the PSE but belong to the GSSE.² For the EU and the US, it was necessary to include in the PSE/GSSE coverage several measures notified to the WTO that were identified as belonging to the CSE sub-groups Q1 (Commodity specific transfers from consumers to taxpayers) and Q2 (Non-commodity specific transfers from consumers to taxpayers). These included payments made to the processors of food in the case of the EU, while a large share of domestic food aid is recorded in the CSE for the US.

For the purpose of the analysis in this paper, we focus on the distinction between policy instruments for which production is required (PSE-categories A1, A2, B1, B2, B3, C and D) and

² Depending on the context the term 'PSE' is used both to indicate the 'traditional' PSE (categories A to G) and to denote the total of PSE and GSSE (categories A to N).

those for which production is not required (PSE-categories E to N). This feature can be used as a first proxy as to whether the policy instrument is question distorts production and/or trade. Basically, if production is required, then it follows theoretically (and from empirical evidence) that production is distorted. And if production is distorted, so will be trade.

The WTO Classification

The WTO-notifications on domestic support distinguish between three categories (table 2): aggregate measurement of support (AMS), blue box and green box. AMS contains policy instruments that are considered to distort production and/or trade.³ They are further divided into two groups: ‘Market price support (MPS)’ and ‘Non-exempt direct payments (Non-ex DP)’. MPS as measured by the WTO must not be confused with MPS as measured by the OECD (Orden *et al* 2011)⁴. The former represents the putative value of support as a result of the government setting an administrative price higher than the external reference price. There does not need to be a direct link between the administrative price and border protection, although in many cases border protection is used to sustain the administrative price. A major difference between the two measures is that the OECD measures MPS irrespective of the existence of an administrative price, while the existence of an administrative price is a requirement for a commodity to be included in a member’s MPS in the WTO notification. The distinction between MPS and Non-exempt DP in the WTO categories conveniently reflects the origin of the support: MPS measures the implicit production related transfer from consumers to producers as a result of having higher domestic prices compared to the world market, while Non-ex DP are production-related direct payments provided by taxpayers.

Policy instruments covered by the blue box are, in principle, distorting, but subject to a production-limiting program so to reduce or even offset the distortionary effect of the measure. According to Article 6.5 of the Uruguay Agreement on Agriculture, blue box payments are exempt from reduction commitments if, in addition to be part of a production-limiting program, one of the three criteria listed in table 2 is satisfied.

³ A *de minimis* exemption of five percent of the value of production (for both product-specific measures and non-product-specific measures) reduces the “Current Total AMS” that is compared to the member’s obligations (Brink 2011). For the sake of comparison with the OECD data we add back these *de minimis* amounts.

⁴ In the EU notifications a category is defined for market price support (and non-exempt payments) for those commodities (mostly fruits and vegetables) that cannot be easily calculated from administered prices. This Equivalent Measurement of Support is included as MPS and non-exempt payments as appropriate in our tables. The most recent EU notification has removed this element of the AMS calculation.

Table 2. Definition of categories in the WTO-notification system

Aggregate Measurement of Support: Not exempt from reduction commitments		
<i>Type</i>	<i>Program eligibility</i>	<i>Amount of payment</i>
Market price support	Existence of administrative price	Gap between fixed external reference price and applied administrative price multiplied by eligible quantity of production and net of levies and fees
Non-exempt direct payment	All direct payments eligible to farmers and not exempt from reduction commitment	
Blue box: Exempt from reduction commitments – Subject to production-limiting program		
<i>Type</i>	<i>Program eligibility</i>	<i>Amount of payment</i>
Direct payment	Payment based on fixed area and yield	
Direct payment	Payment are made on 85 per cent or less of the base level of production	
Direct payment	Livestock payments are made on a fixed number of head	
Green box: Exempt from reduction commitments		
<i>Type</i>	<i>Program eligibility</i>	<i>Amount of payment</i>
Decoupled income support	Income, status of producer or landowner, factor use, production level in a defined and fixed base period	Not related to or based on type or volume of production or prices or factors of production No production shall be required to receive such payments
Income insurance and income safety-net programs	Determined by income loss	Solely related to income Up to 70 per cent of income loss
Relief from natural disasters	Formal recognition by government authorities	Income loss or factors of production (incl. land and livestock) up to total loss
Structural adjustment - producer retirement	Facilitate total and permanent retirement of recipients from production	
Structural adjustment - resource retirement	Retirement of land (min 3 years) or other resources incl. livestock (e.g., slaughter) from production	Not related to type or volume of production (including livestock) or prices Limited to compensate structural disadvantage
Structural adjustment through investment aids	Facilitate the financial or physical restructuring of farm in response to structural disadvantages	Not related to or based on type or volume of production or prices or factors of production Limited to compensate for structural disadvantage
Environmental programs	Related to production methods or inputs and dependent on the fulfillment of specific conditions under the program	Limited to extra costs or loss of income involved in complying with program
Regional assistance programs	Limited to designated contiguous geographical areas with definable economic and administrative entity with more than temporary disadvantages	Not related to type or volume of production (including livestock) or prices Limited to extra costs or loss of income involved. If related to production factors, made at degressive rate
Other direct payments	Same as for decoupled income support	Same as for decoupled income support

Source: WTO (1994)

Four Country Examples

We applied the methods described above to four countries⁵: Norway, Switzerland, the European Union (EU) and the United States (US) for the period 1995 to 2010. The countries are chosen with respect to the diversity of their agricultural policies and recent developments in their agricultural policy reforms. The four countries together accumulate about 60 per cent of global domestic support as measured by the OECD (total of PSE and GSSE) and about 80 per cent of global domestic support notified to the WTO (total of current total AMS, blue box and green box).

Table 3 shows the number of policy instruments for Norway, Switzerland, the EU and the US that are contained in the datasets for each category. We have counted only those measures for which there was a non-zero amount for at least one year within the stated period.⁶

⁵ For convenience we refer to the EU as a ‘country’ although it currently consists of 27 member states. In WTO notifications the EU makes one submission on behalf of all member states.

⁶ There are a few instances of payments with a negative value (e.g., production fees) in both databases.

Table 3. Definition of support categories and number of reported policy instruments for Norway (NO), Switzerland (CH), the EU and the US between 1995 and 2009 (2007 for the EU)

Measure		NO	CH	EU	US
OECD PSE & GSSE		93	101	442	294
<i>OECD PSE</i>		73	57	349	245
A1	Market price support	10	12	18	14
A2	Output payments	27	2	66	143
B1	Variable input use	6	7	41	5
B2	Fixed capital formation	7	2	32	16
B3	On-farm services	1	3	30	19
C	Current A/An/R/I ¹⁾ , production required	18	25	155	43
D	Non-current A/An/R/I ¹⁾ , production required	2	3	2	-
E	Non-current A/An/R/I ¹⁾ , production not required	-	1	1	6
F	Non-commodity criteria (long-term resource retirement, a specific non-commodity output, other non-commodity criteria)	2	1	3	8
G	Miscellaneous payments	-	1	1	-
<i>OECD GSSE</i>		20	44	93	49
H	Research and development	6	7	8	12
I	Agricultural schools	-	4	7	1
J	Inspection services	3	6	5	3
K	Infrastructure	4	5	10	14
L	Marketing and promotion	2	11	44	16
M	Public stockholding	1	7	14	1
N	Miscellaneous payments	4	4	5	2
WTO-notification		84	98	143	343
MPS		14	23	45	7
Non-exempt direct payments		24	20	52	226
Blue box		5	-	28	7
Green box		41	55	18	103

¹⁾ Area, number of animals, farm receipts or farm income

Source: OECD (2011), WTO (div.)

The PSE database lists a total of around 100 measures for Norway and Switzerland each, and more than 400 measures for the EU. The US lies in the middle with around 300 programs. Most of the measures belong to the PSE, while roughly one quarter of the measures are listed under the GSSE. Within the PSE, only a few measures do not require production. Norway and Switzerland have only two such measures each, while the EU has four of its measures in these categories. The US has as many as 14 programs in this category, but it has also the highest number of output-related payments. However, as will be shown below, the pure count of measures does not provide a reasonable measure of the extent to which agricultural support is related to production as the monetary amount behind the measures listed varies significantly. Most importantly, the level of program detail differs quite a lot across countries. For example, the PSE database contains no less than 34 US commodity loan interest programs, as there is a line for each commodity.

The WTO-notifications contain about the same total number of policy measures as does the OECD database for Norway and Switzerland, but less than half of the total number of PSE and GSSE measures for the EU.⁷ This is due to both reporting practice and concept design. The PSE-database is more disaggregated and requires the listing of single instruments. The WTO-notification scheme allows for providing totals for sub-groups of instruments, especially in the green box that only distinguishes between the twelve sub-groups. The EU reports on the level of sub-groups, while Norway and Switzerland report more or less single measures. The coincidence of having approximately the same number of measures in the PSE-database and the WTO-notifications for Norway and Switzerland does not mean that the databases contain the same instruments and that they can be easily matched, as will be explained below. For the case of the EU, this task is even more challenging as the WTO-notifications provide only limited information about which single instruments are aggregated within the sub-group totals.

Single policy instruments were matched by comparing the instruments' names and their annual values. In some cases, both the names and the values are more or less identical and hence easy to match (one-to-one correspondence). Policy instruments have also been matched in cases where either the names are identical, while the numbers differ or *vice versa*. When policy instruments were listed *en bloc* (as in the WTO green box notifications for the EU), policy instruments in the WTO-database were allocated to the corresponding single policy instruments in the PSE-database (one-to-many correspondence). In the absence of further information, the decision whether or not to match instruments required a subjective decision.⁸ Policy instruments not matched were put in a separate group "Not covered". The total monetary value of this group consists of those instruments and the (positive or negative) difference of matched instruments where their monetary values did not coincide.

Broadly speaking, a country's most important policy instruments in terms of monetary value and political significance could be more or less easily identified and matched. Problems arose frequently with respect to temporary measures, measures with small monetary amounts and measures contained in the GSSE (although the GSSE-categories have counterparts in the 'General services' sub-group of the WTO green box). This is especially true for the EU for which hundreds of single measures needed to be matched with only a few categories in the WTO-notifications with little additional information. Therefore, we regard our results for the EU as somewhat preliminary. We expect, however, our results to be quite robust even if a revision of the matching process should require some changes.

3. Differences between the Two Datasets in the Four Countries

3.1 Norway

The Norwegian notifications to the WTO Committee on Agriculture follow the adopted rules by providing the required support tables. The latest available notification to the WTO Committee on Subsidies and Countervailing Measures (SCM) covers subsidies for the years 2008 and 2009 (WTO 2011a) and follows that Committee's rules for all subsidies except those to agriculture. Instead of including the detail of such subsidies a reference is made to the notifications to the Committee on Agriculture. The SCM notifications however do give a short presentation of the

⁷ In the case of the US the WTO notifications identify more categories in the PSE database.

⁸ A complete list of the mapping of policy measures can be found in the annex.

major support measures to agriculture covering both market regulation and direct payments and including figures for commodity trade balances.

Figure 1 provides an overview of the PSE-data and the WTO-notifications for Norway for the period 1995 to 2009. In general, there are small net differences in the total support measured by the OECD and notified to the WTO across years. There are, however, some major differences in single years, such as 2001 and 2009.

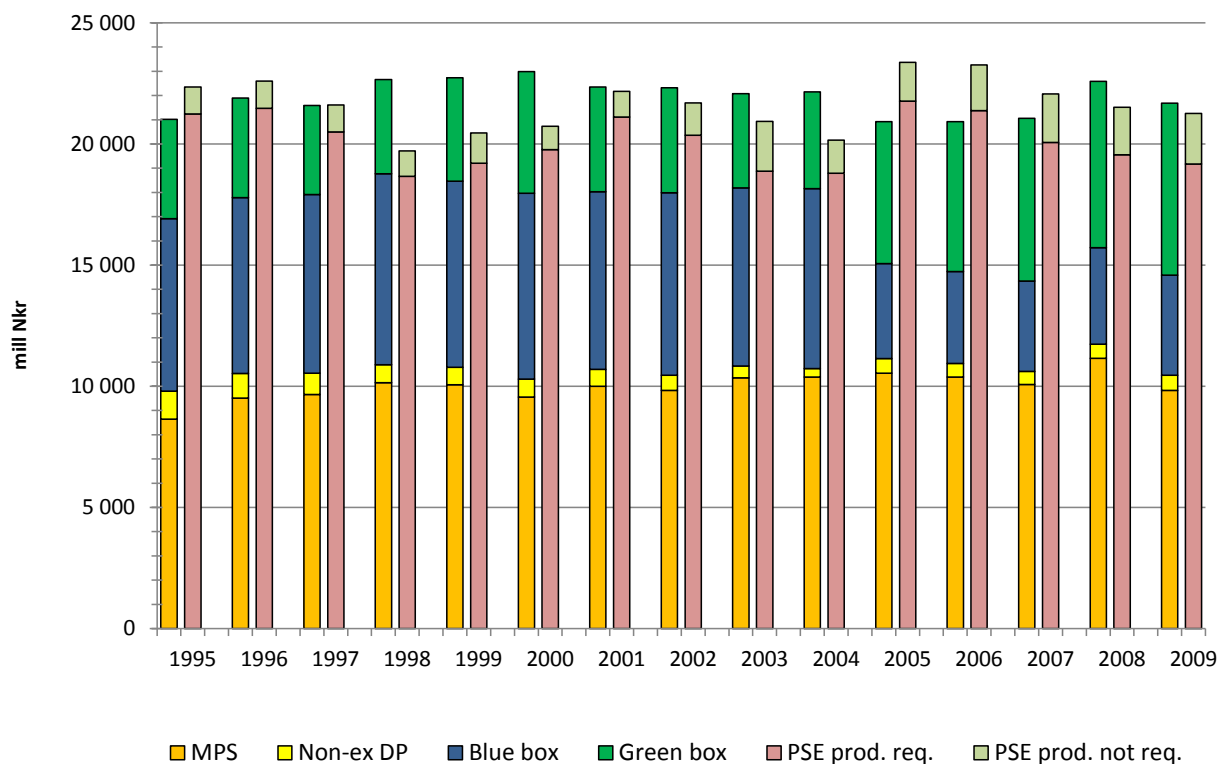


Figure 1. Overview of PSEs and WTO-notification for Norway for 1995-2009 (mill Nkr)

Total support to agriculture in Norway as notified to the WTO consists of about one half production and/or trade distorting support (MPS and Non-ex DP)⁹. The other half is made up of blue box support and green box support. A shift can be observed in 2005. Until 2004, blue box support dominates, while from 2005 onwards, green box support takes the lion's share. This shift is not however reflected in the PSE database as grouped according to the measures' production requirement. Almost all of the support provided to the agricultural sector is implemented in a way that requires production. According to the OECD, only a tiny fraction of support does not require production, and it is apparently much smaller than that which is notified as green box support to the WTO.

Figure 2 shows the development in Norway of blue box support and green box support by PSE categories from 1995 to 2009. Despite some changes, total unconstrained support (i.e., sum of blue box and green box) stays relatively constant in nominal terms within the entire period. There

⁹ For more detail on Norway's notifications to the WTO Agriculture Committee see Gaasland *et al* 2011.

is a drop in support associated with a major change in the composition of policy instruments from 2004 to 2005, but total support rises again to reach post-2004 levels. The period between 1995 and 2002 was one of political stability in Norway. A policy change induced by the presentation of a White Paper on agricultural policy in 1999 and a change in government in 2001 made some blue box support shift from category C to category D. Two years later, this support seemingly shifted from the blue box to the green box. About half of the amount, however, stayed in category C, while the other half was accounted for in category D. As mentioned above, categories C and D differ with respect to whether payments are based on current (C) or non-current (D) area/animals/receipts/income, but they both require production in order for farmers to be eligible to receive payments. In this respect, shifting that support from the blue box to the green box does not seem to have taken away the link to production of that support.

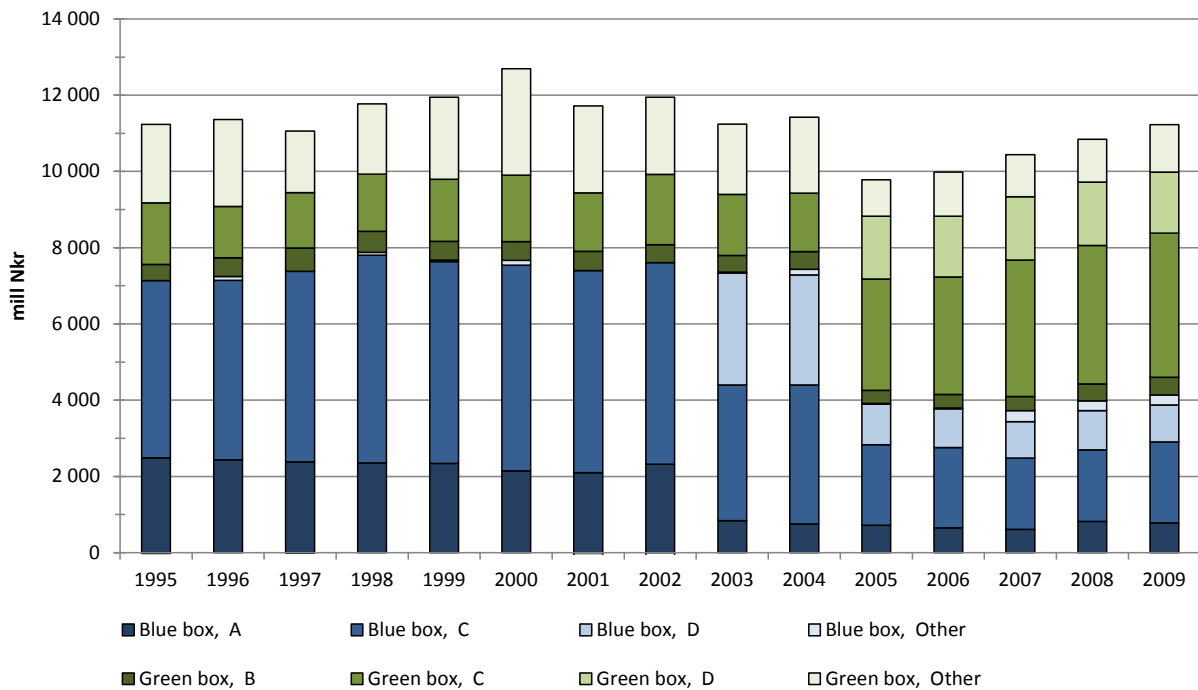


Figure 2. Development of blue box support and green box support by PSE categories for Norway for 1995-2009 (mill Nkr)

3.2 Switzerland

The Swiss notifications to the WTO Committee on Agriculture and to the WTO Committee on Subsidies and Countervailing Measures also follow closely the respective rules by providing the required information. The latest available notification to the Committee on Subsidies and Countervailing Measures covers subsidies for the years 2009 and 2010 (WTO 2011b). The notifications are, however, limited to commodity-specific measures such as market intervention, export refunds and non-exempt product-specific direct payments. The notifications to the Committee on Subsidies and Countervailing Measures thus seems to cover only the AMS part of domestic support leaving out all exempt direct payments (WTO green box) notified to the Committee on Agriculture.

There is somewhat more discrepancy between the WTO-notifications and the PSE for Switzerland when compared to Norway (see figure 3). This may be caused by the fact that MPS is more dominant in Switzerland and smaller differences between the WTO external reference price and the PSE observed reference price can cause larger overall differences. The picture is somewhat different from that of Norway in another respect: MPS as measured in the WTO notifications has been continuously reduced as a result of an increase in direct payments. Switzerland does not use the blue box, but it has nearly all of its direct payments notified in the green box. Much of this support is considered related to production in the PSEs, although the share of support that does not require production has considerably increased in both relative and absolute terms between 1995 and 2009. This overview reveals significant reform towards the decoupling of agricultural support that has taken place in Switzerland over the last two decades. But despite these achievements, there is still a significant amount of green box support that is linked to production.

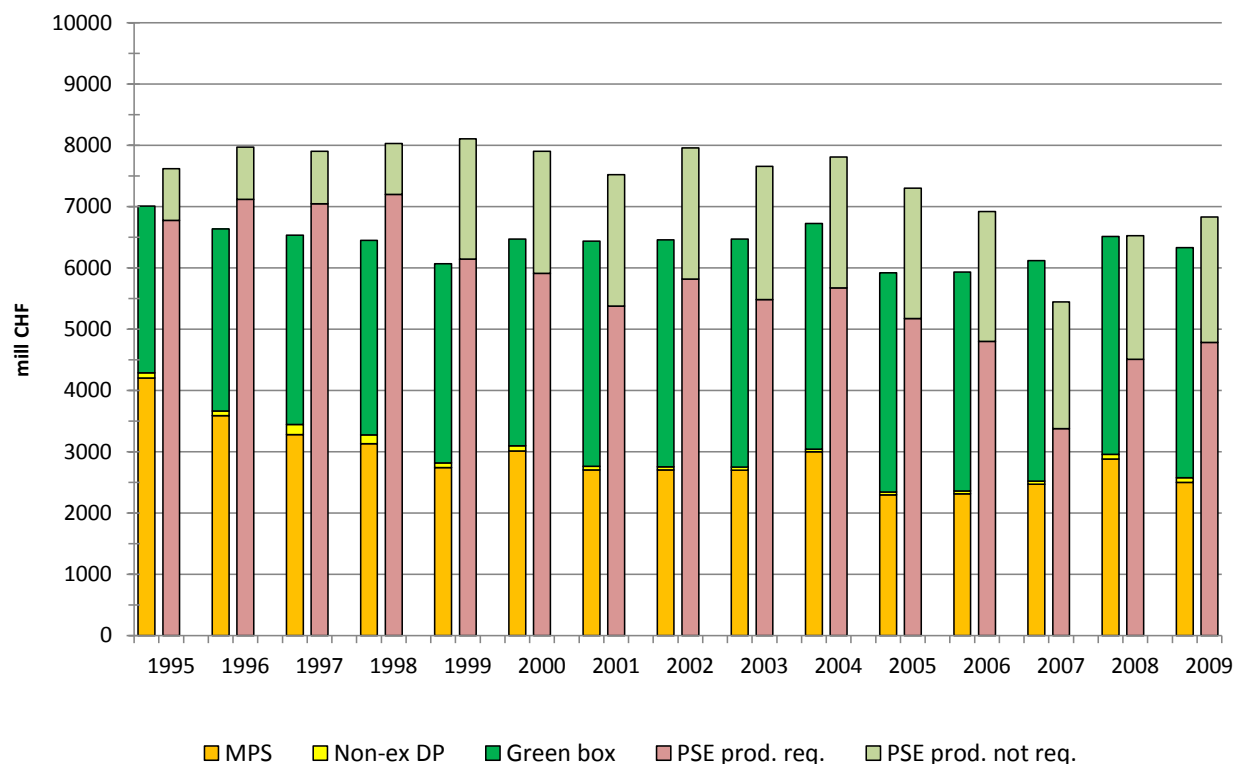


Figure 3. Overview of PSEs and WTO-notification for Switzerland for 1995-2009 (mill CHF)

Figure 4 illustrates the development of green box support by PSE categories for Switzerland between 1995 and 2009. The figure shows the introduction of non-production related support in category F in 1999 at the expense of a reduction of support in category C and other categories not explicitly shown in the figure. The figure also reveals that the green box contains some payments that are regarded as output payments by the OECD. Their value has significantly increased between 1998 and 2001, and has remained more or less stable since. These payments include direct price support to milk processed into cheese that is notified under the sub-group ‘regional assistance programs’ in the green box. To the best of our knowledge, this payment is not regionalized. It is paid to the processors of designated types of cheese that are then encouraged to

pay a correspondingly higher milk price to farmers who deliver milk to them. The payment makes up about one quarter of the milk price.

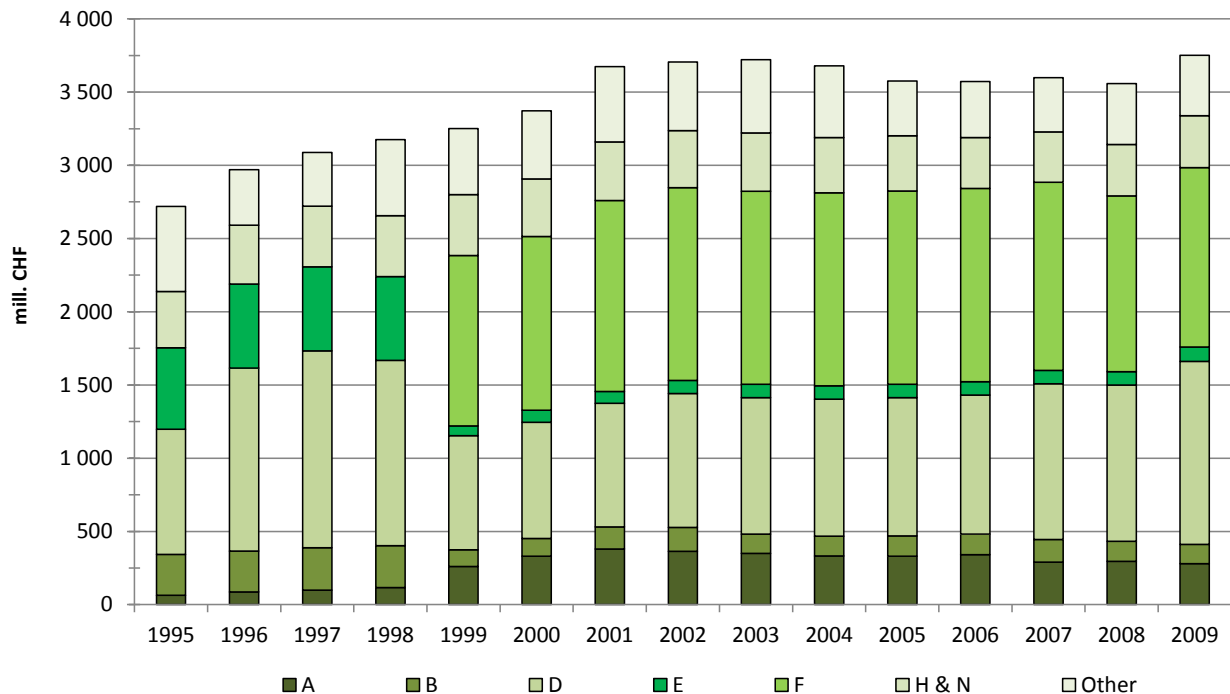


Figure 4. Development of green box support by PSE categories for Switzerland for 1995-2009 (mill CHF)

3.3 The EU

The EU notifications to the WTO Committee on Agriculture and to the WTO Committee on Subsidies and Countervailing Measures also follow the respective rules by providing the required information. The latest available notification to the Committee on Subsidies and Countervailing Measures for subsidies for 2007 and 2008, contains a comprehensive description of the policy instruments covered by the EU’s Common Agricultural Policy (CAP) (WTO 2009a). The description follows the usual division of policy instruments by the EU: Export refunds, market intervention and direct aid financed through the European Agricultural Guarantee Fund (EAGF) (‘First pillar of the CAP’), and direct aid as well as rural development measures financed by the European Agricultural Fund for Rural Development (EAFRD) (‘Second pillar of the CAP’). The rural development payments are classified under four different axes: improving competitiveness for farming and forestry, environment and countryside, improving quality of life in rural areas and diversification of the rural economy and the leader axis that aims to co-integrate the different axes.

The SCM notification does not make an explicit reference to the notifications to the Committee on Agriculture, but states that regarding the first pillar of the CAP “in 2008, 74 per cent of the support provided did have no or at most minimally trade distorting effects” (WTO 2009a). Concerning the second pillar of the CAP, the notification simply reads that there are “no, or at most minimal, trade distorting effects” (WTO 2009a). This claim is following by a

comprehensive list of support measures covered by the second pillar of the CAP, pointing out that payment rates cover extra costs or loss of income of program participation. In some instances, such as for agri-environmental payments and animal welfare payments, the notification states that “*where necessary, [the payment rates] may cover also transaction cost*” (WTO 2009a) indicating that the rate is set somewhat higher than cost compensation would require. However, the notification does not specify what “transactions” the transaction costs cover and what they amount to. The mention of transaction costs is not mirrored in the notifications of new support measures introduced as part of the CAP’s Agenda 2000 (WTO 1999b) or the 2003 Midterm Review (WTO 2009b).

Among the three European countries (or groups of countries) considered, the EU appears to have undertaken the most significant steps of agricultural reform. This is especially visible when looking at the WTO-notifications where MPS was more than halved during the reporting period, and was only partly compensated by direct payments, mostly in the form of green box support (Josling and Swinbank 2011). On the other hand, figure 5 reveals that this development is supported to a much lesser extent by the PSE-figures. Here, total PSE (including GSSE) stays fairly constant in nominal prices throughout the period. However, from being almost negligible in 1995, support that does not require production accounted for around 50 per cent of the PSE in 2008. This mirrors the shift towards the decoupling of direct payments that also could be inferred from the WTO notifications, but to a much smaller extent. It is apparent from the comparison that the EU’s green box must be composed of payments that require production, as the level of the green box is significantly higher than the level of support that is regarded by the OECD as not requiring production.

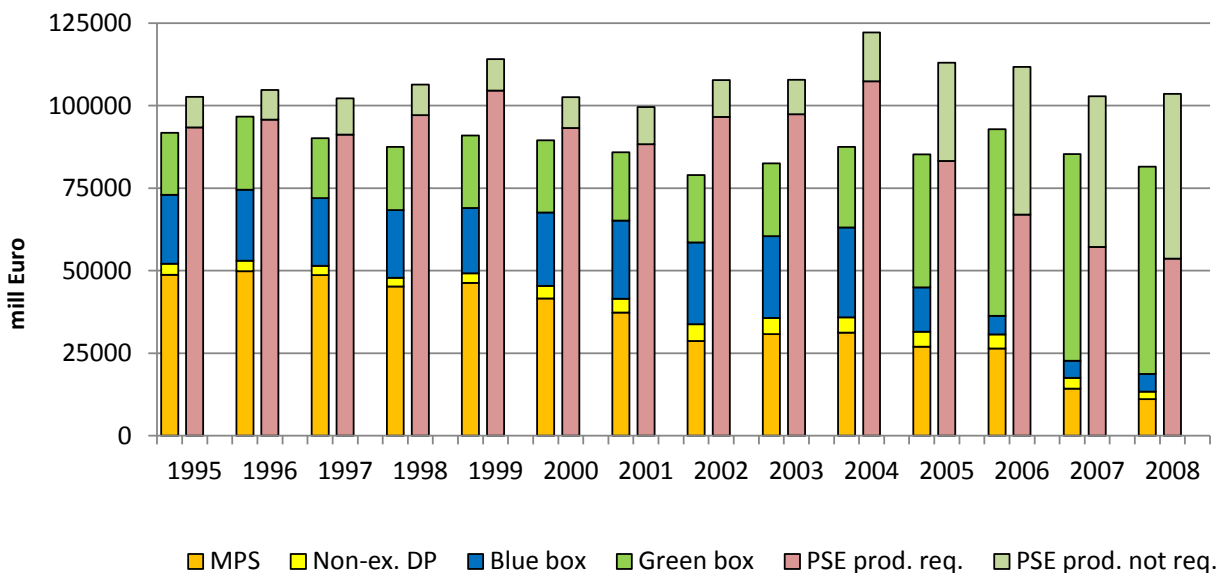


Figure 5. Overview of PSEs and WTO-notification for the EU for 1995-2008 (mill Euro)

The development of blue box support and green box support in the EU between 1995 and 2007 (figure 6) illustrates the major reform step that took place in the CAP with the introduction of the decoupled Single Farm Payment Scheme (SPS) as part of the Mid-term review in 2003. Not only did that policy instrument change shift support from the blue box to the green box (as in

the case of Norway), but it also shifted it from category C (requiring production) to category E (not requiring production) (as was not the case in Norway).¹⁰ As a result, the EU has almost abolished its blue box support.

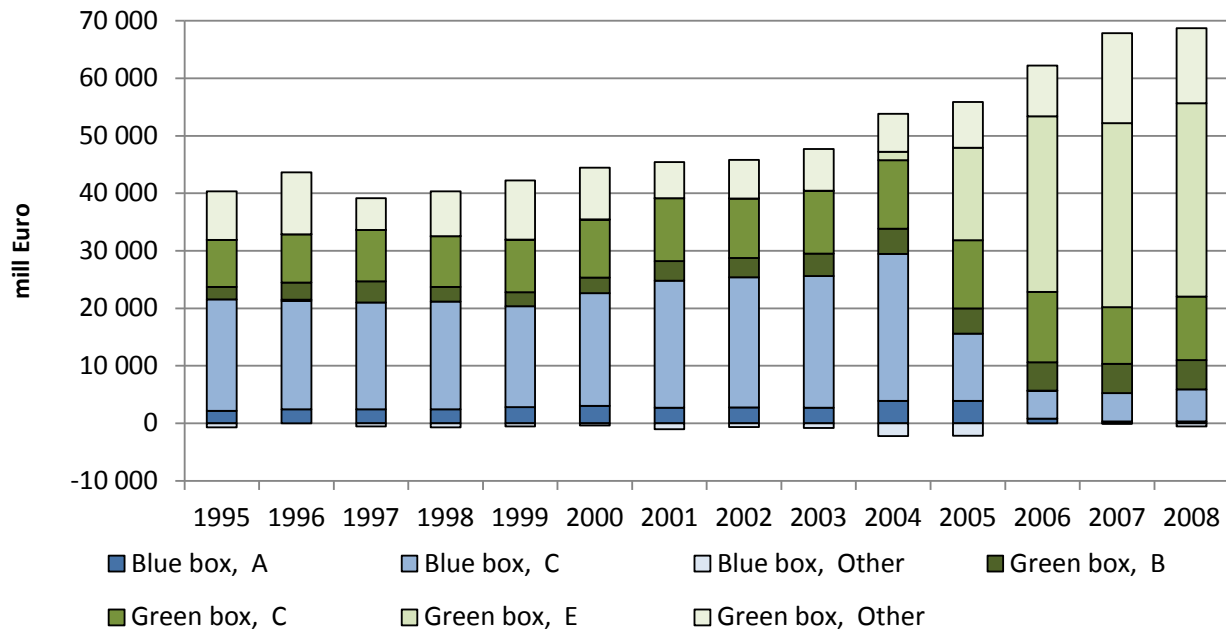


Figure 6. Development of blue box support and green box support by PSE categories for the EU for 1995-2008 (mill Euro)

3.4 The US

The US notifications to the US Committee on Agriculture and to the WTO SCM Committee also follow the respective rules by providing the required information. The latest available notification to the SCM Committee covers fiscal years 2007 and 2008 and contains a fair description of major US agricultural policy instruments (WTO 2010b). The notification lists two export programs (Export Enhancement Program, Dairy Export Incentive Program), and 15 domestic support measures including direct payments, price support for milk and sugar, disaster payments and risk management assistance. Five of the 15 measures are tax-related. Although these programs are clearly targeted towards the agricultural sector, they are not notified to the Committee on Agriculture, but contained instead in the PSE-database for the US.¹¹ The value of the tax programs accounted for a little more than 1 per cent of notified domestic support notified to the Committee on Agriculture. For 2008, domestic support notified to the SCM Committee (excluding tax measures) was 15 per cent of notified domestic support to the Committee on

¹⁰ Some observers have expressed doubts as to whether the SPS qualifies for green box criteria (Swinbank 2009). However, no WTO member country has so far formally challenged the EU's position on this point.

¹¹ According to the PSE-database, the total value of income tax concessions amounted to \$1,372 mill. in 2008, while the notifications to the SCM Committee assess the respective value to about \$1,050 mill. for the 2008 fiscal year. The decision not to include tax-concessions as domestic support in the WTO notifications apparently goes back to the Uruguay Round negotiations on the Agreement on Agriculture.

Agriculture. A major reason is that domestic food aid has not been included in the US SCM notifications.

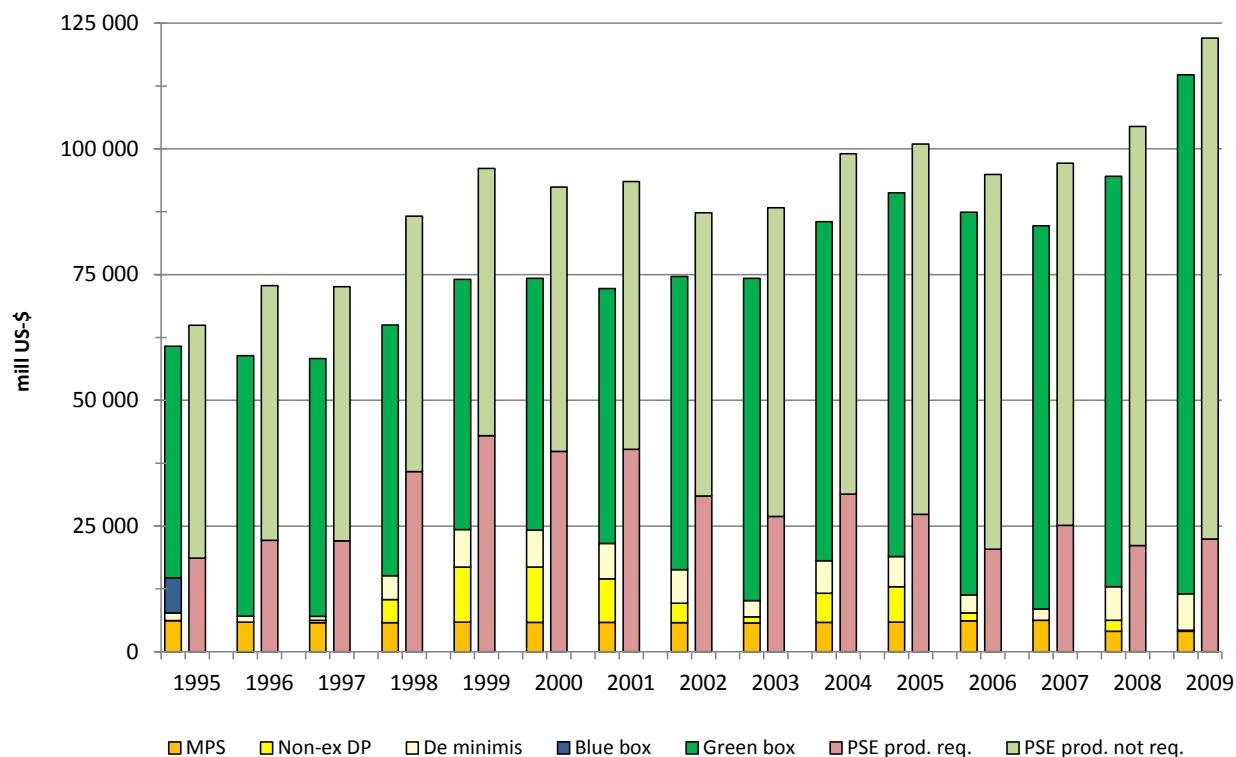


Figure 7. Overview of PSEs and WTO-notification for the US for 1995-2009 (mill US-\$)

Figure 7 compares domestic support to US agriculture as notified by the WTO and as recorded by the OECD. Both measures note a significant increase in support between 1995 and 2009. While there is a clear similarity in the relative development of support between 1995 and 2009, the absolute numbers differ. A period of relative stability between 1999 and 2003 is followed by peaks in 2004 and 2005, a slight reduction until 2007, and finally a considerably increase in support starting in 2008. WTO green box support and support not requiring production (i.e., the green bars in figure 7) dominate the overall picture. But there is still an indication that the value of production-related support, as reported in the PSE database, exceeds the total amount of market price support, non-exempt direct payments and blue box support. This hints at the fact that some production-related support must be notified within the WTO green box.

The dominance of domestic food aid within the WTO green box is illustrated in figure 8. The various food programs occupy large parts of PSE-category L and CSE-category Q2. Their share of green box support stays above 60 per cent through the entire period with a peak in 1995 of 80 per cent. In 2009, domestic food aid corresponded to 75 per cent of green box support. Apart from domestic food aid, there is notable support in PSE-categories B (input subsidies) regarding as related to production. Unlike Switzerland and the EU, we were not able to identify any output-related payments among the US' green box notifications.

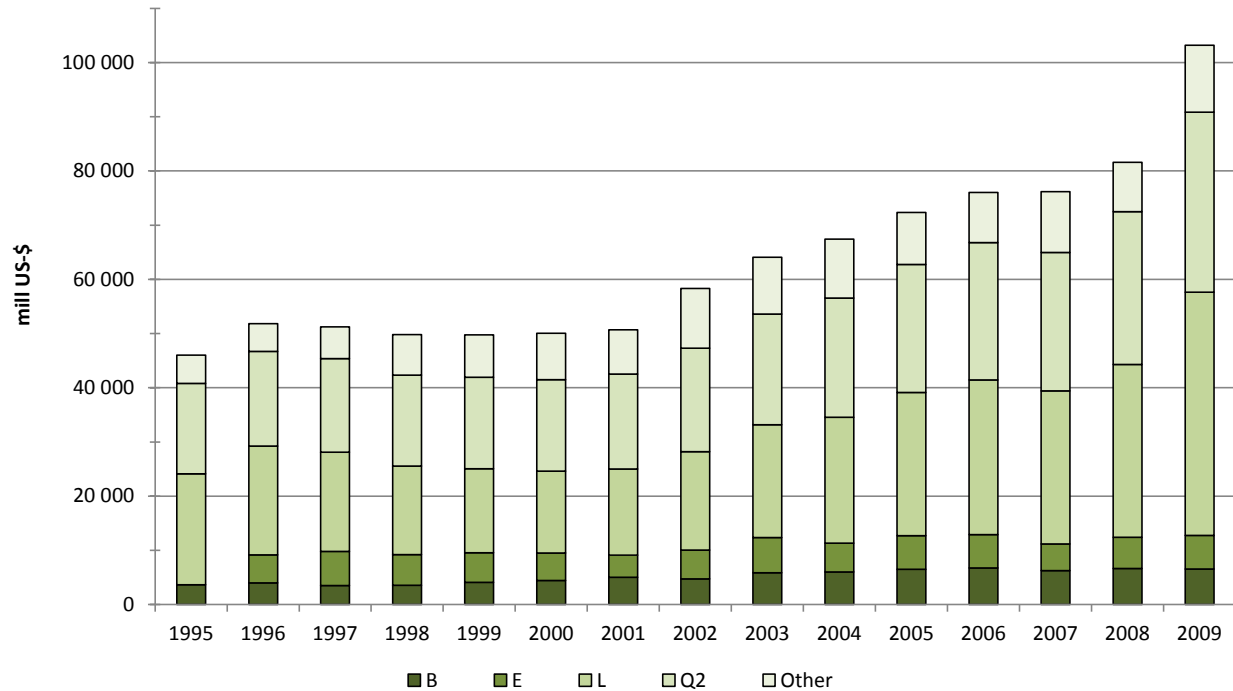


Figure 8. Development of green box support by PSE categories for the US for 1995-2009 (mill US-\$)

The US appears to offer an example of rather consistent notification to the two institutions (figure 8). Non-exempt direct payments are found in those PSE-categories containing programs that require production, while most green box support is found in PSE-categories covering programs not requiring production. Green box support regarded as provided through programs requiring production is concentrated in PSE-categories B2 and B3. These categories include general services and environmental programs. A share of non-ex DP in PSE-category C is made up by ACRE-payments and disaster payments. As will be shown below, there seems to be some flexibility as to whether disaster payments are notified as green box measures or in the group of non-exempt direct payments.

Disaster payments have frequently been notified to the WTO as green box payments and as non-exempt direct payments, while the OECD lists them all together in PSE-category C. In 1999, disaster payments were almost evenly allocated to the green box and to non-ex DP. This picture has changed considerably as most of the disaster payments in 2009 were notified as non-ex DP and only a small amount remained in the green box. It is somewhat unclear whether this is the result of significant changes in the programs, or whether it comes as a result of a change in notification practices. The WTO-notification for 2009 consists of only one program (Non-insured crop disaster assistance program by the Farm Service Agency) worth \$95 million. This program is matched with the PSE support measure 'Crop disaster payments (ad hoc)' that has a value of \$550 million.

4. The WTO Green Box and Production Requirements

The basic notion of the Green Box is to shelter from support reductions such programs that have little or no effect on production. The provision of public goods would often come within this category. The aggregate effect could still be to increase production from the sector even if the size of any producer's payment did not depend on his production. But the legal manifestation of this criterion is by no means clear-cut. Box criteria and the production requirements is summarized in table 4, which also identifies the categories in the notification format used by WTO members.¹²

Table 4. Categorization of domestic support measures in the WTO green box

Categories	Appearance in AoA Annex 2	Appearance in WTO Notification Requirement and Format	Policy-specific criteria	
			Payment amount: "Not be related to, or based on, the type or volume of production"	Payment eligibility: "No production shall be required in order to receive such payments"
General services	Para. 2	(a)		
Public stockholding	Para. 3	(b)		
Domestic food aid	Para. 4	(c)		
Decoupled income support	Para. 6	(d)	X	X
Income insurance and income safety-net programmes	Para. 7	(e)	X	
Natural disaster relief	Para. 8	(f)		X ¹⁾
Structural adjustment - producer retirement	Para. 9	(g)		
Structural adjustment - resource retirement	Para. 10	(h)	X	
Structural adjustment - through investment aid	Para. 11	(i)	X	X ¹⁾
Environmental programmes	Para. 12	(j)		
Regional assistance programmes	Para. 13	(k)	X	
Other direct payments	Para. 5 ²⁾	(l)	X	X

1) Regards future production

2) "Other direct payments" are defined in para. 5 as payments "other than those specified in paragraphs 6 through 13", and all except one of the criteria of para. 6 apply to those payments.

Source: WTO (1994), WTO (1995)

The conditions under which a policy is exempted from reduction are given in AoA Article 6, paragraph 1 (WTO 1994). This article, *inter alia*, refers to Annex 2 of the Agreement (the Green Box) that specifies that domestic support measures "shall meet the fundamental requirement that they have no, or at most minimal, trade-distorting effects or effects on production" (para. 1). This

¹² It bears repeating that for a measure to qualify in a particular green box category, the measure needs to meet all the criteria in the category, i.e., it is not enough that the measure can be described as being of the kind identified in the heading of the category.

would appear to exclude from the green box any payment that has any impact (in either direction?) on production. However, the paragraph continues “accordingly, all [green box] measures shall conform to the following basic criteria” (a) support is provided by a publicly-funded government program, and (b) it does not have the effect of providing price support to producers. In addition, specific criteria and conditions apply for each of twelve sub-categories of the green box.

Two of these criteria are of special interest with regard to production requirements and production-based payments. The first of these criteria requires that the amount of the payment must not be related to or to be based on the type or volume of production, prices or factors of production. This criterion applies to payments under the headings related to decoupled income support, natural disaster relief, resource retirement, investment aid, and regional assistance, and to other direct payments. The second criterion states that no production shall be required in order to receive the payment. This applies only to decoupled income support and “other direct payments” not covered by the specific categories. The criteria for the other categories of payments do not include the requirement that the payment, in order to qualify for the green box, must not require production: a payment can be unrelated to production volume or type and still be paid only if some production occurs. In fact, many programs necessarily imply that there is some “requirement” for production: governments are unlikely to pay a subsidy for meeting some environmental production standard and then make payments even in those cases where there is no production. Some production is *de facto* required to receive that payment. In these cases the eligibility for receiving a payment (and the size of the payment) is defined with reference to, for example, the extent of income loss due to natural disasters, structural or regional disadvantages, or environmental program compliance.¹³ And, for another group of green box categories (such as general services and food aid) there are no payments to producers, and hence no opportunity to place a restriction on payments on the basis of production.¹⁴

The OECD database identifies programs that have specific production requirements. The focus is on the distinction between policy instruments for which production is required (PSE-categories A1, A2, B1, B2, B3, C and D) and those for which production is not required (PSE-categories E to N, all GSSE-categories). This feature was presumably introduced as an indication as to the extent to which the policy instrument in question might distort production and hence trade: this is an important part of the process of quantitative evaluation of policy change in OECD members.¹⁵ However, the link with the WTO green box criteria discussed above is not transparent. Some

¹³ It is, however, difficult to reconcile the “fundamental requirement” that there be no (or only minimal) effect on production with the specific criteria that allow compensation for losses or for regional cost disadvantages.

¹⁴ There has not yet been a panel ruling on the interpretation that countries have put on these criteria. The US-cotton case did touch on Green Box requirements with respect to production, in part to address the US claim that the cotton subsidies were sheltered by the Peace Clause. The panel considered the question of restrictions on the eligibility for payments that precluded some types of production (vegetables and wild rice). Their opinion was that these restrictions meant that the payments were in fact tied to production. This did not address the issue of whether, if any production is required, the Green Box conditions are violated.

¹⁵ The modeling of the quantitative effect of farm policies relies crucially on the extent to which direct payment policies give an incentive to producers. There is an extensive literature that explores the production impact of decoupled payments (reviewed in Abler and Blandford, 2007). The broad conclusion of these studies is that there are a number of mechanisms by which direct payments unrelated to output could in fact act as incentives to producers. These include a wealth effect, an income effect and an effect on the rate of exodus from the sector.

payments can fall under the OECD heading of “no production required” and still be ineligible for the WTO green box.¹⁶ Thus the most interesting link with the OECD categories is in the criteria for “decoupled income support”. The OECD category of “no production required” seems to cover cases where production is not required for eligibility and the payments are not related to production. Both these conditions must be met in order place these payments under AoA Annex 2, paragraphs 5 or 6.¹⁷

Table 5. Amount of payments classified as requiring production by the OECD and notified as green box payments to the WTO in 2007, by green box category, (million units of national currency) and as share of all support in that green box category (per cent)

Category (AoA Annex 2 paragraphs)	Norway		Switzerland		EU		US	
	mill. NOK	%	mill. CHF	%	mill. Euro	%	mill. \$	%
Decoupled income support (para 6)			509	29	277	1		
Other direct payments to producers (para 5)	1,261	100						
Natural disaster relief payments (para 8)	36	119			1,367	141	550	561
Structural adjustment - investment aids (para 11)	370	59	113	135	3,651	48		
Environmental protection (para 12)	4,084	98	411	73	4,040	64	1,435	32
Regional assistance programmes (para 13)			722	98	4,107	91		
Total green box (paras 5, 6, 8, 11, 12 and 13)	5,751	81	1,755	47	13,442	24	1,985	2

Source: Own calculation based on OECD (2011) and WTO (var.).

Using the OECD database for the four countries in our study and matching individual policy instruments with payments notified in the WTO Green Box reveals the extent of this grey area between production requirements, production-based payments and green box eligibility (table 5). Payments for which a match was found, and which were classified by the OECD as “production required”, were notified in the six (of the eleven) categories of green box payments that prohibit payment on the basis of production.¹⁸ As mentioned above, it is not inconsistent to require production, but base the payments on other criteria. But in the case of “other direct payments” (paragraph 5) and “decoupled income support” (paragraph 6) there is no such ambiguity. Norway

¹⁶ A prominent example is the counter-cyclical payments in the US: no current production is required to receive such payments, as they are paid on base acreage. But the counter-cyclical payments do not qualify for the green box as they are triggered by and related to price movements.

¹⁷ The term “decoupled” income support is used in the heading of Annex 2, Paragraph 6, but not defined. The OECD uses the term “decoupled” in a “weak” form to indicate that production would be the same with or without the support and in a “strong” form implying that changes in the level of income support will not affect production. Both are presumably subsumed by the WTO “fundamental requirement” for green box eligibility that payments have no, or at the most minimal ... effects on production (Annex 2, para.1).

¹⁸ Values above 100 per cent indicate differences in reported values in the two classification systems or possible inconsistencies in the matching process.

and Switzerland each notified significant payments that appear a priori to be ineligible for the green box. For example, NOK 1.261 billion or 100 percent of Norway's payments in the category 'other direct payments' were regarded as requiring production by the OECD. In Switzerland, 29 percent of the payments notified in the category that explicitly states that production must not be required were regarded in the OECD classification as requiring production. In the case of the EU the amount of such ambiguous payments is small relative to the total payments notified under paras 5 and 6: for the US there appeared to no such conflicting notifications.

Though the case of decoupled income support and other direct payments to producers (AoA Annex 2, paras. 5 and 6) is the most clear-cut example of where the OECD data can help to focus on the consistency of WTO notifications, other categories of the green box also raise issues that could be explored – including the compatibility with the “fundamental requirement” of Annex 2 para 1 that payments have no, or at most minimal, ... effects on production.¹⁹ For European countries, typical examples of green box measures that require production are environmental protection programs, regional assistance programs and investment aid. For instance, the Swiss Payment for the Holding of Roughage Eating Farm Animals (PHREFA) accounts for one third of total green box support notified by Switzerland. The OECD has put PHREFA in PSE-category C that covers payments made on current animal numbers for which production is required. This would seem to be inconsistent with the criteria for the green box. Two other Swiss programs, the Milk Price Supplement for Cheese Production (MPSCP) and the Payments for Non-Silage Feeding of Cows (PNSFC), have been notified as green box payments in the category 'Regional assistance'. But these are classified by the OECD as output payments and hence depend on “the type and volume of production”. Examples of EU programs notified in the green box include (regional) support to Less Favoured Areas (LFA), investment aids and agri-environmental support. These are considered as requiring production by the OECD, thus at the least raising the question of compatibility with the “fundamental requirement” in para 1 of Annex 2. Examples from Norway are the National Environmental Program and the Vacation and Replacement Scheme that reimburses farmers for the costs of hired labor during vacation and illness.²⁰

6. Conclusion

Our analysis contributes to the emerging literature that attempts to integrate domestic support and commitment levels into applied policy models (e.g., Jensen *et al.* 2009). The method used in the paper establishes the close similarity of the WTO and OECD dataset, making it possible to mirror the past and to produce pre-notifications of WTO domestic support levels through the use of the readily available OECD dataset. This opens up possibilities for applied policy models to analyze the economic effects of further restrictions on WTO domestic support commitments and

¹⁹ Discussion of the compatibility with the fundamental requirement raises issues beyond the scope of this paper, such as the import of the word “accordingly” that links the fundamental requirement with the “basic criteria” in the rest of the paragraph.

²⁰ Similar anomalies show up in the matching of instruments from the OECD categories to the notifications in the Blue Box. Norway, for instance, notifies regional deficiency payments to meat producers in this category. In order to be eligible for the blue box, payments have to be “under production-limiting programs” (along with other criteria). Although there exists an upper limit on the amount of meat that is eligible for the payments it is not binding. The regional deficiency payments to meat differ in this respect from regional deficiency payments to milk as the latter are made under a (binding) milk quota scheme. Consequently, the OECD considers the milk deficiency payments as being subject to a production limit, while it does not consider such a production limit being in place for the meat deficiency payments.

the potential production and trade-distorting impacts of green box measures. Care should be taken not to assume that there is any legal implication of a “production required” classification in the OECD database in terms of the correct notification in the WTO Green Box. Nevertheless, the distinction between “production required” and “payments on the basis of production” needs to be carefully considered in economic modeling of direct payments.

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