



M3122 FG

**Agricultural and Food Policy**

**AGRICULTURAL INCOME POLICY**  
**- Direct Income Payments, the Green Box and Decoupling -**

Thomas Fellmann

Winter Term 2006/07, November 09<sup>th</sup> – December 01<sup>st</sup>, 2006  
Daily, 13.15 – 16.30, HS 23

Lecture notes and further information:  
<http://www.uni-hohenheim.de/apo>



**LECTURE OUTLINE**



1. Introduction
2. Rationales for Intervention in Agriculture
3. Economic Criteria for (Neutral) Payments
4. Income Transfer Efficiency of Farm Support Measures
5. Green Box and Decoupled Income Support
6. Adjustment Assistance
7. Environmental Goods
8. Conclusions

Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and  
Decoupling  
Adjustment  
Assistance  
Environmental  
Goods  
Conclusions

## MEASURING AGRICULTURAL SUPPORT - PSE



⇒ How can the “size” and “shape” of the transfers from the many disparate agricultural policy instruments be measured?

- The OECD produces several indicators of agricultural support. The most important and central one is the *Producer Support Estimate (PSE)*.
- PSE shows the *annual monetary transfers to farmers* from policy instruments (measured at the farm-gate level).

⇒ PSE is measured by adding up 2 elements:

- *market price support*: difference between domestic and world price for commodities (multiplied by the amount produced);
- *budgetary transfers*: payments to farmers, based on criteria such as the quantity of a commodity produced, the amount of inputs used, the number of animals kept, the area farmed, or the revenue or income received by farmers. Also includes potential revenue forgone by the government (e.g. through energy tax rebates, subsidised irrigation water or interest concession)

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## MEASURING AGRICULTURAL SUPPORT – PSE and AMS

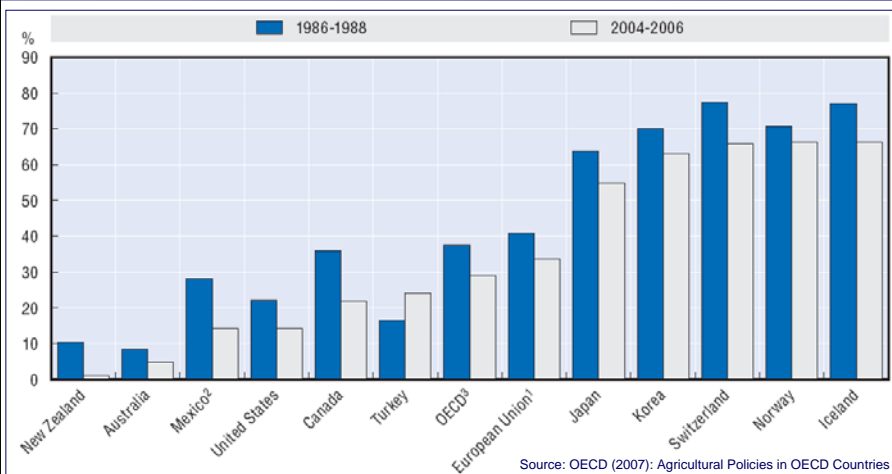


⇒ OECD uses PSE (*Producer Support Estimate*) whereas the WTO uses the AMS (*Measurement of Support*). What's the difference?

- The purpose of the PSE is to monitor and evaluate progress in agricultural policy reform, whereas the AMS is the basis for a legal commitment to reduce domestic support in the WTO Agreement on Agriculture.
- PSE covers all transfers to farmers from agricultural policies, whereas AMS covers only domestic policies deemed to have the greatest production and trade effects (amber box), and excludes trade policies that are covered under the WTO market access and export subsidy disciplines. The AMS also excludes production-limiting policies (blue box), those policies deemed non or least trade distorting (green box) and certain trade distorting policies (e.g. input subsidies) when the level of domestic support is smaller than a specified de minimis level.
- Market price support in the PSE is measured at the farm gate level using actual producer and reference (border) prices for commodities in a given year, whereas in the AMS market price support is calculated by the difference between annual prices fixed by policy makers (administered prices) and world prices in the base period (1986-88).

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**PRODUCER SUPPORT ESTIMATE by COUNTRY**  
 (% of value of gross farm receipts)



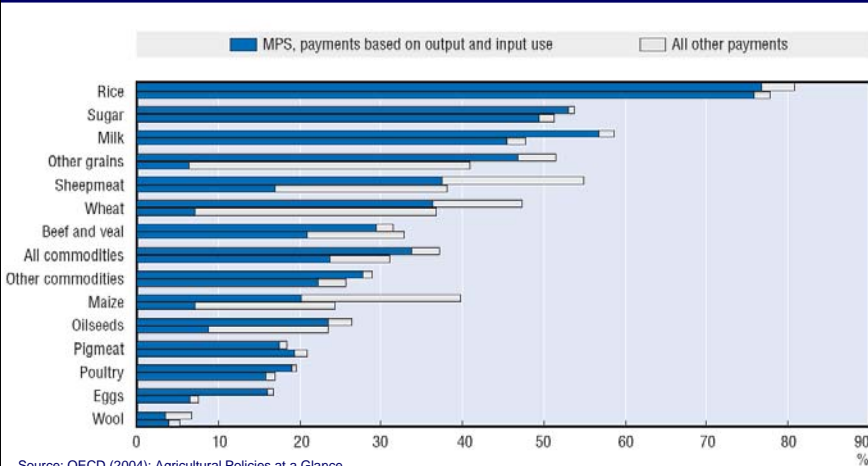
Introduction

**Producer Support Estimate (PSE) =**

an indicator of the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income.

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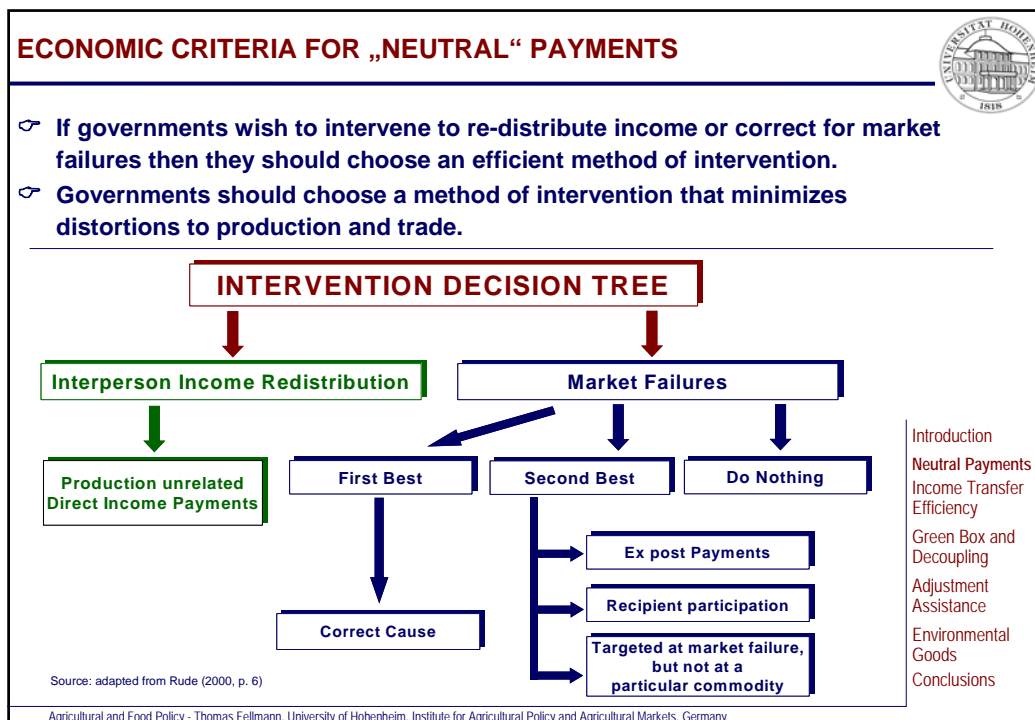
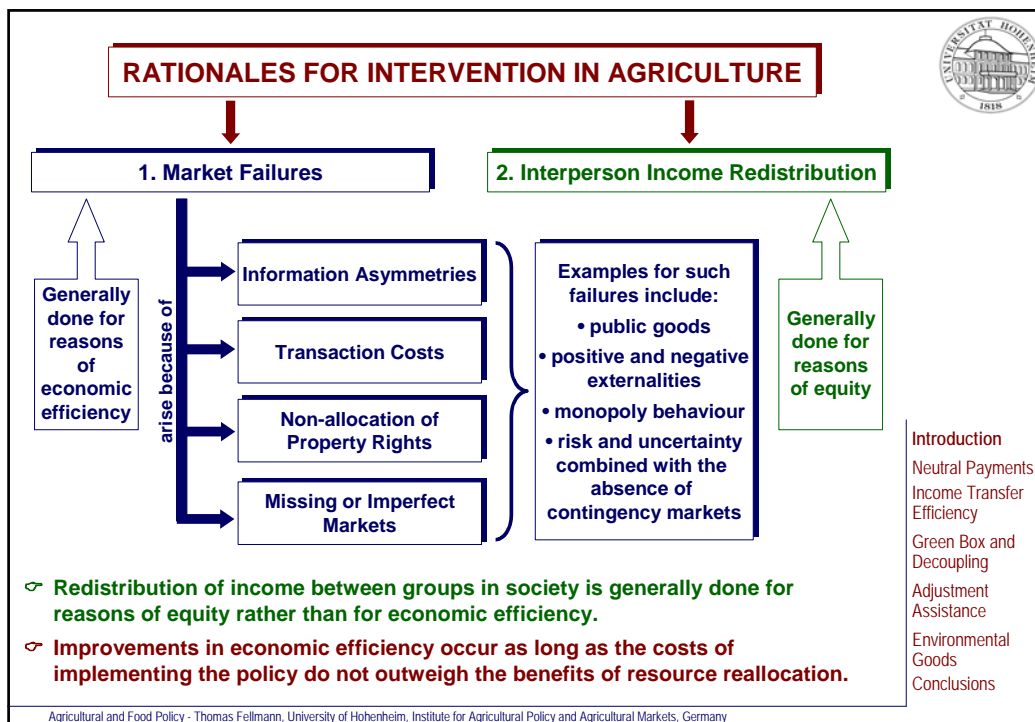
**PRODUCER SUPPORT ESTIMATE by COMMODITY, 1986-88 and 2001-03**  
 (OECD average as % of value of gross farm receipts)



Introduction

⇒ For each commodity the first horizontal bar represents 1986-88, the second 2001-03. Commodities are ranked according to 2001-2003 levels.

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Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and Decoupling  
Adjustment Assistance  
Environmental Goods  
Conclusions

## ECONOMIC CRITERIA FOR „NEUTRAL“ PAYMENTS



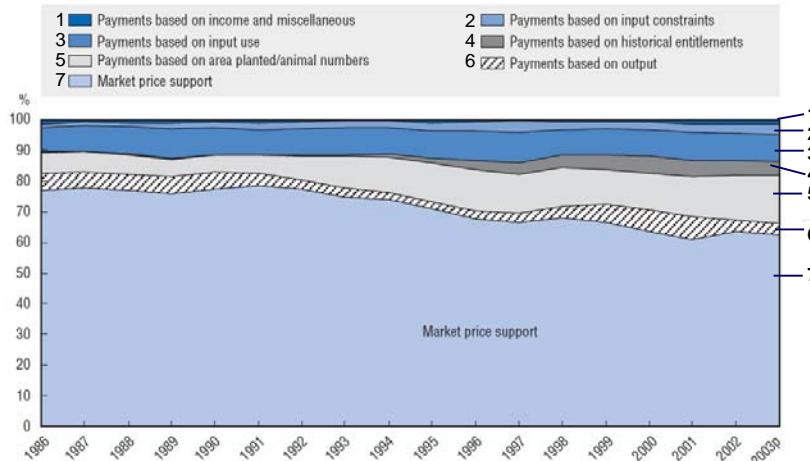
### SOME “RULES OF THUMB” WHICH CAN BE USED TO MINIMISE DISTORTIONAL EFFECTS ON MARKETS:

- ⇒ If the **intervention takes place after** the individual has made the production decision the chance for distortion is greatly minimized.
- ⇒ The payment base for the program should not be subject to influence by the producer and therefore should probably be **based on a fixed historic criteria** such as historic production.
- ⇒ If the **intervention is not targeted at one specific sector** there is less chance for distortion as market considerations should still determine the allocation of resources among sectors.
- ⇒ If **individuals are partially responsible for financing the program** there should be less incentive for them to change their behaviour in order to increase the size of the government payment.

Introduction  
 Neutral Payments  
 Income Transfer  
 Efficiency  
 Green Box and Decoupling  
 Adjustment Assistance  
 Environmental Goods  
 Conclusions

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## COMPOSITION of PRODUCER SUPPORT ESTIMATE for the OECD (% share in PSE)



- ⇒ In OECD countries a change in the composition of support can be examined.
- ⇒ Movement away from consumer payments to budgetary payments.

Introduction  
 Neutral Payments?  
 Income Transfer  
 Efficiency  
 Green Box and Decoupling  
 Adjustment Assistance  
 Environmental Goods  
 Conclusions

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## The most distorting forms of support have declined but still dominate



- ⇒ The current level of market protection is still an important factor in encouraging domestic production, distorting trade and depressing world prices of agricultural commodities.
- ⇒ These create costs not only to domestic consumers and taxpayers, but also to other countries (in particular those producing the same commodities).
- ⇒ Increased production and protection in one country, reduces production incentives elsewhere, may affect consumption patterns and food security, and can limit growth opportunities in developing countries
- ⇒ As price support is transmitted to food consumers it can impact most on low income households for whom food constitutes a larger share of their total expenditure.
- ⇒⇒⇒ ok, these support is economic distorting, but maybe it is efficient in order to support the farmers income...???



Introduction  
Neutral Payments?  
Income Transfer  
Efficiency  
Green Box and  
Decoupling  
Adjustment  
Assistance  
Environmental  
Goods  
Conclusions

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## INCOME TRANSFER EFFICIENCY of FARM SUPPORT



- ⇒ Governments intervene in agriculture with a view to achieve a wide range of economic and social objectives. One of the most cited reasons for intervention is to **improve the income position** of farm households.
- ⇒ Broadly speaking, with support governments want to help farmers earn more income than the market would otherwise provide them.
- ⇒ This is done by either
  - a) imposing tariffs/granting export subsidies that drive up the prices consumers pay to producers in the domestic market or
  - b) supplementing market receipts with payments drawn directly from budgetary funds.
- ⇒ Important question: **How efficient** are the different measures in increasing the income of farm households ?



Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and  
Decoupling  
Adjustment  
Assistance  
Environmental  
Goods  
Conclusions

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## INCOME TRANSFER EFFICIENCY of FARM SUPPORT



### SOME GENERAL CONSIDERATIONS IN ANALYSING THE BENEFITS AND COSTS OF FARM SUPPORT:

- ⇒ With **perfect transfer efficiency** every dollar of the extra money consumers pay through higher prices (and every dollar of the extra money taxpayers pay to fund direct payments) would find its way directly into the income of the intended beneficiaries, i.e. farm households.
- ⇒ In reality there are **transfer efficiency losses** because
  - a) the costs of administering the programme,
  - b) all the different ways governments use to support farmers involve distortions to relative prices and the accompanying inefficiencies in resource use and
  - c) some of the economic benefits of farm support go to people who do not farm.



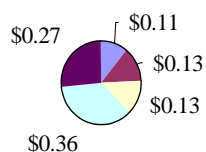
- Introduction
- Neutral Payments
- Income Transfer Efficiency**
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## TRANSFER EFFICIENCY of FARM SUPPORT



### THE INCIDENCE of MARKET PRICE SUPPORT:



<span style="color: blue;">■</span> Farm household labour	<span style="color: purple;">■</span> Farm household land	<span style="color: yellow;">■</span> Landlords
<span style="color: cyan;">■</span> Input supplier profits	<span style="color: darkred;">■</span> Resource costs	

Source: OECD (2002)

- ⇒ The estimated transfer efficiency of market price support is **0.24 (Farm household labour + Farm household land)**
- ⇒ Farm households experience a gain of only 24 cents for each one-dollar of additional taxpayer plus consumer costs for market price support
- ⇒ Put the other way round: taxpayers and consumers together pay more than four dollars for each one-dollar gain in farm household income due to market price support

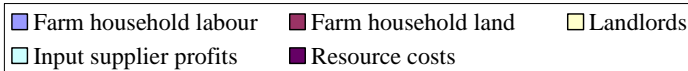
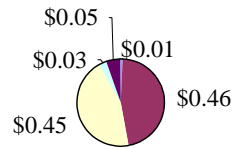
- Introduction
- Neutral Payments
- Income Transfer Efficiency**
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## TRANSFER EFFICIENCY of FARM SUPPORT



### THE INCIDENCE of AREA PAYMENTS:



Source: OECD (2002)

- ⇒ **The estimated transfer efficiency of an area payment is 0.47 (Farm household labour + Farm household land)**
- ⇒ **Farm households experience a gain of forty-seven cents for each one-dollar of additional taxpayer costs for an area payment**
- ⇒ **Crucial point: Who is farming the land ?**

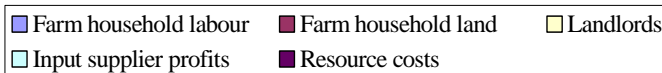
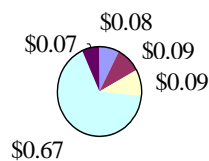
Introduction  
Neutral Payments  
Income Transfer Efficiency  
Green Box and Decoupling  
Adjustment Assistance  
Environmental Goods  
Conclusions

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## TRANSFER EFFICIENCY of FARM SUPPORT



### THE INCIDENCE of an INPUT SUBSIDY:



Source: OECD (2002)

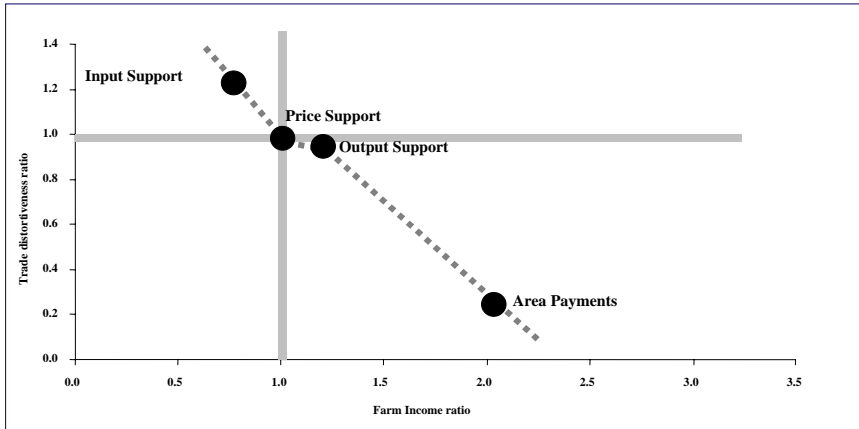
- ⇒ **The estimated transfer efficiency of an input subsidy is only 0.17 (Farm household labour + Farm household land)**
- ⇒ **Taxpayers pay almost six dollars for each one-dollar gain in farm household income due to such a subsidy**

Introduction  
Neutral Payments  
Income Transfer Efficiency  
Green Box and Decoupling  
Adjustment Assistance  
Environmental Goods  
Conclusions

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## THE RELATIONSHIP BETWEEN TRADE DISTORTIONS AND THE TRANSFER EFFICIENCY OF FARM SUPPORT



Source: DEWBRE, ANTON AND THOMPSON (2001, p.1210)

The trade distortiveness ratio measures the impact of policy on net traded quantities relative to the impact of market price support, while the farm income ratio measures the effect of policy on farm income, also relative to that of market price support.

- Introduction
- Neutral Payments
- Income Transfer Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

## TRANSFER EFFICIENCY - DIRECT INCOME PAYMENTS



⇒ Although some of these measures are less inefficient than others none of the support measures studied so far can be seen as really efficient in providing income benefits for farm households.

⇒ Why not use a more direct way for income support, such as a **DIRECT INCOME PAYMENT** ?

⇒ Think about a simple example:



- Introduction
- Neutral Payments
- Income Transfer Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

## DIRECT INCOME PAYMENTS – DEFINITION



After an award-based definition the category of **DIRECT INCOME PAYMENTS** for agriculture covers all those payments that are made *directly* from public authorities' budgets to individual farmers or farms and have the effect of increasing farmers' *current* income. While they are not paid through the market, they are either made *to meet particular (agri-) social aspects* or *to remunerate farmers for the provision of non-commodity outputs* for which markets do not exist. (Fellmann, 2007)



### This category of measures

⇒ **excludes** budget payments that are intended to improve the performance of the sector as a whole (e.g. payments for research or infrastructure), as well as earmarked investment contributions, because such payments are intended to increase the income possibilities in the future without increasing the current income.

⇒ **includes** measures that are linked to production to varying degrees, and measures under which farmers are expected to comply with particular conditions, engage in specific activities or provide specific non-commodity outputs.

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling**
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## „VERY to LESS“ ECONOMIC DISTORTING POLICIES – The WTO-BOXES



In the year 1994 the **Uruguay Round Agreement on Agriculture (URAA)** marked the integration of agriculture into the multilateral trading system, now governed by the rules of the World Trade Organization (**WTO**).

In the URAA **domestic support policies** in agriculture are assigned to one of three boxes, depending on their impact on international trade.



AMBER BOX



BLUE BOX



GREEN BOX

Source: Agreement on Agriculture (www.wto.org)

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling**
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## „VERY to LESS“ ECONOMIC DISTORTING POLICIES – The WTO-BOXES



Domestic support policies considered to **distort trade or production** are placed in the so called “**amber box**” and **subjected to reduction requirements**.



Some certain distorting policies are placed in the “**blue box**” and **exempted from reduction requirements**.

Support that would normally be in the amber box is placed in the blue box, **if the support also requires farmers to limit production**.

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

Source: Agreement on Agriculture (www.wto.org)

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## „VERY to LESS“ ECONOMIC DISTORTING POLICIES – The WTO-BOXES



Policies considered to have **no, or at most minimal, distorting effects** on trade or production are placed in the “**green box**” and **are not** subjected to the requirement that support must be reduced.



The green box includes, beside some general services like research or pest and disease control, a bundle of direct payments to producers with different objectives.

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

Source: Agreement on Agriculture (www.wto.org)

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## POLICY DESIGN of DIRECT INCOME PAYMENTS – The GREEN BOX



### GENERAL REQUIREMENTS FOR DIRECT PAYMENTS TO BE INCLUDED INTO THE GREEN BOX:

- ⇒ They should have no (or at most minimal) effects on trade and production.
- ⇒ They must be provided through a publicly-funded government programme, without involving transfers from consumers.
- ⇒ They shall not have the effect of providing price support to producers.



Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
**Green Box and Decoupling**  
Adjustment Assistance  
Environmental Goods  
Conclusions

Source: Agreement on Agriculture ([www.wto.org](http://www.wto.org))



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## POLICY DESIGN of DIRECT INCOME PAYMENTS – The GREEN BOX



### NOTE:

In policy discussions the policies of the green box are often referred to as “**decoupled**” policies - in a sense of having no link to production (and consumption) and therefore being neutral to production and trade.

### BUT:

It must be noted, that the green box also includes some policies which typically will not be fully decoupled. In fact, in the URAA the term “decoupled” is only used in paragraph 6 of Annex 2 in connection with “decoupled income support”.



Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
**Green Box and Decoupling**  
Adjustment Assistance  
Environmental Goods  
Conclusions

([www.wto.org](http://www.wto.org))



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## POLICY DESIGN of DIRECT INCOME PAYMENTS – The GREEN BOX



### DIRECT PAYMENTS, USED FOR DECOUPLED INCOME SUPPORT SHOULD MEET THE FOLLOWING SPECIFIC CRITERIA:

- ⇒ Eligibility for such payments should be determined by clearly-defined criteria (such as income, factor use or production level in a defined or fixed base period).
- ⇒ The amount of such payments in any given year shall not be related to, or based on:
  - the type or volume of production (including livestock units) undertaken by the producer in any year after the base period.
  - prices, domestic or international, applying to any production undertaken in any year after the base period.
  - the factors of production employed in any year after the base period.
- ⇒ No production shall be required in order to receive such payments.



Source: Paragraph 6 of Annex 2, Agreement on Agriculture (www.wto.org)

Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
**Green Box and Decoupling**  
Adjustment Assistance  
Environmental Goods  
Conclusions

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## POLICY EFFECTS of DIRECT INCOME PAYMENTS – DECOUPLING



### FULLY DECOUPLED PAYMENTS:

- ⇒ if it doesn't distort decision making of farmers and if markets adjust as if there were no policy in place.
- ☞ a) production decisions by farmers are not affected,  
b) there is no change in equilibrium prices and quantities, and  
c) there is no difference in the response of the market to any exogenous shock.



### EFFECTIVELY FULLY DECOUPLED PAYMENTS:

- ⇒ if production decisions could be affected by the policy, but in a way that does not increase the level of production.
- ☞ the policy results in a level of production that does not exceed the level that would exist without the policy.

cf. Cahill, 1997; OECD, 2000

Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
**Green Box and Decoupling**  
Adjustment Assistance  
Environmental Goods  
Conclusions

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## POLICY EFFECTS of DIRECT INCOME PAYMENTS – DECOUPLING



POLICIES AFFECT PRODUCTION AND TRADE THROUGH SEVERAL MECHANISMS:

### STATIC EFFECTS:

⇒ refer to the production effects of policy measures that have actually become operative in the period being analysed.

### RISK RELATED EFFECTS:

⇒ may be observed in an uncertain world when farmers are risk averse. Then farmers will face two types of risk-related effects:

a) **insurance effect** (resulting from reducing the variability of income)

b) **wealth effect** (resulting from the fact that more wealthy farmers take bigger risks).

### DYNAMIC EFFECTS:

⇒ may occur when current investment decisions and/or farmers' expectations on future policies affect production decisions in the following years.



- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling**
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## POLICY EFFECTS of DIRECT INCOME PAYMENTS – DECOUPLING



### APPROACH to DECOUPLING:



1. A programme can only be proved to be production and trade neutral if this results from an empirical *ex post* analysis of farmers' response to that programme.
2. In general *decoupling is more a question of degree* rather than a zero-one characteristic.

cf. Cahill, 1997; OECD, 2001

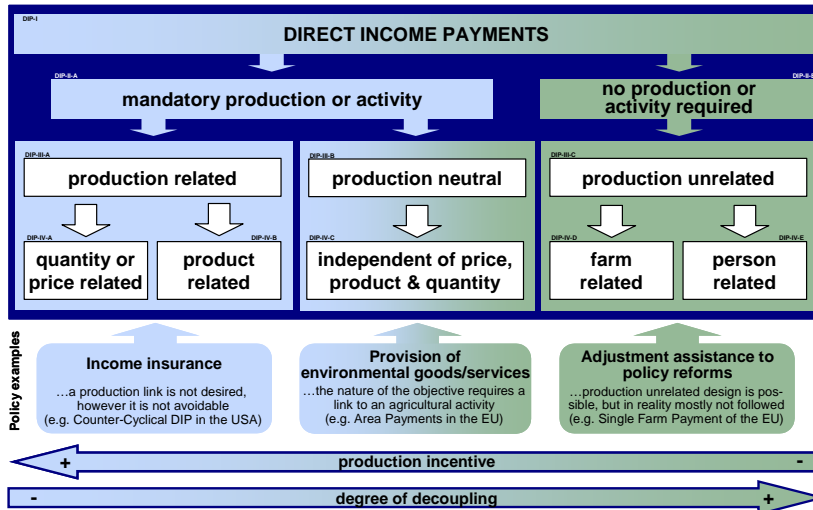
- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling**
- Adjustment Assistance
- Environmental Goods
- Conclusions

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## POLICY DESIGN of DIRECT INCOME PAYMENTS



### INTERVENTION DECISION TREE for DIRECT INCOME PAYMENTS



Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and  
Decoupling  
Adjustment  
Assistance  
Environmental  
Goods  
Conclusions

Source: Fellmann & Möllers, 2006

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## DIRECT INCOME PAYMENTS in the context of different target objectives



**Two examples should be analysed:**

**As example for direct income payments in the context of objectives concerned with equity or distributional issues:**

⇒ **Compensation Payments/Adjustment Assistance for the adjustment to changes in policy that farmers could not foresee**

**As example for direct income payments in the context of objectives related to the correction of market failure:**

⇒ **Direct income payments for the provision of environmental goods and service**



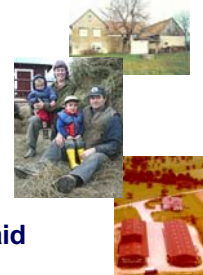
Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and  
Decoupling  
Adjustment  
Assistance  
Environmental  
Goods  
Conclusions

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## DIRECT INCOME PAYMENTS for ADJUSTMENT ASSISTANCE (COMPENSATION PAYMENTS)



⇒ **PAYMENTS THAT HELP FARMERS ADJUST TO POLICY CHANGES (REFORMS) THEY COULD NOT FORESEE**



**CHARACTERISTICS of such PAYMENTS:**

- ⇒ **fixed historical basis**, for calculating the amounts to be paid
- ⇒ **should not be conditional on any other requirements**
- ⇒ **cannot be made permanent = limited to a clearly defined period**
- ⇒ **decline of payments over time**
- ⇒ **certificate that states the future stream of annual payments**
- ⇒ **should be tradable on the capital market (like government bonds)**

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance**
- Environmental Goods
- Conclusions

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## DIRECT INCOME PAYMENTS for ADJUSTMENT ASSISTANCE (COMPENSATION PAYMENTS)



**It must be emphasized that payments outlined like this, can only be considered as transitional payments, i.e. as compensation payments in order to help farmers to adjust to policy changes.**

**Since they are only provided for a limited time, after that transitional time, some farmers might still be in need of further income assistance ⇒ but then, these assistance may be in fact better encompassed by general welfare and labour schemes.**



- ⇒ **While adjustment payments as outlined would not be conditional on other requirements, direct income payments in the context of objectives related to the correction of market failure would require some kind of agricultural production or activity.**

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance**
- Environmental Goods
- Conclusions

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## DIRECT INCOME PAYMENTS for the PROVISION of ENVIRONMENTAL GOODS and SERVICES



⇒ Agricultural activities involve the **production of food and fibre**, but **also additional benefits** such as: open space, wildlife habitat, biodiversity, cultural heritage, flood prevention, an assured supply of food and viable rural communities.



⇒ Direct payments might be used to **stimulate and reward** the supply of environmental goods and services by farmers.

⇒ Those environmental goods and activities that attract payments need to be clearly and unambiguously defined.



### BUT:

- ⇒ Such payments should not conflict with the **polluter-pays-principle**.
- ⇒ Specific verifiable standards of usual **'good farming practice'**.

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

## DIRECT INCOME PAYMENTS for the PROVISION of ENVIRONMENTAL GOODS and SERVICES



### CHARACTERISTICS of such PAYMENTS:

- ⇒ they should remunerate farmers for the provision of **clearly defined** environmental goods or services for which markets do not exist;
- ⇒ they should **not conflict** with the polluter-pays-principle;
- ⇒ they should **not be linked** to the production of an agricultural commodity or the use of an input, so that they do not encourage a higher output;
- ⇒ the **size of the payment** should relate to the full cost of producing the targeted environmental good; tendering or bidding procedures could be a possibility.



- ⇒ payments should be made on a **recurrent contractual basis**.

- Introduction
- Neutral Payments
- Income Transfer
- Efficiency
- Green Box and Decoupling
- Adjustment Assistance
- Environmental Goods
- Conclusions

## CONCLUSIONS



- ⇒ All agricultural policy measures seem to have some **impact on production and trade** at the margin.
- ⇒ Therefore policy measures used to achieve the objectives of agricultural policies must be **targeted** as close as possible.
- ⇒ **DIRECT INCOME PAYMENTS** as outlined here provide the opportunity to achieve agricultural policy objectives in a more targeted and efficient way, thus being less economic distorting.
- ⇒ Objectives related to the correction of market failure and objectives concerned with equity or distributional issues must be **targeted separately**.
- ⇒ A **good definition of the objective** or target is crucial to the optimal design of direct income payments, both to be effective in achieving that target and efficient in the allocation of resources.



Introduction  
Neutral Payments  
Income Transfer  
Efficiency  
Green Box and Decoupling  
Adjustment Assistance  
Environmental Goods  
Conclusions

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## CONCLUSIONS



- ⇒ The **overall expenditure must be limited to the minimum** required to achieve the well-defined objectives.
- ⇒ Temporary income support, training and skills upgrading, re-employment assistance, etc., could prove to be more efficient and cost-effective than the current policy set.
- ⇒ **Broader (social) policies**, such as those available to others in society, seem appropriate to consider in some cases.
- ⇒ At least **part of the solution** for governments who may wish to ensure 'reasonable' income levels for farm households **lies outside of agricultural policy entirely**.



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