# 1176: Argentine Agricultural Policy: Economic Analysis and Impact Assessment Using the Producer Support Estimate (PSE) Approach

Daniel Lema [1] and Marcos Gallacher [2]

[1] Institute of Economics-INTA and Universidad del CEMA  [2] Universidad del CEMA

[1] danilema@gmail.com  [2] gmg@cema.edu.ar

## Introduction

This paper analyzes agricultural policy in Argentina and calculates the degree of support received by producers and consumers.

The concepts of Producer Support Estimates, Consumer Support Estimates, General Services Support Estimates, Producer Nominal Assistance Coefficient and Nominal Protection Coefficient are used to analyse different dimensions of transfers occurring between agricultural producers, consumers and taxpayers in the period 2007-2012.

Understanding the impact of policy on prices paid by consumers and received by farmers is important for several reasons.

First, it constitutes an important input for policy makers engaged in trade-related international discussions.
Second, it allows progress to be made in understanding response of the agricultural sector to different kinds of interventions.
Third, it results in important data for the design of domestic programs aimed at reducing the impacts of increases of commodity prices on low-income population groups.

In Argentina, agriculture is discriminated against through export taxes

The extent of the "negative protection" has changed over the years, however in general public policy has resulted in decreased output prices received by farmers, and increased input prices paid by these farmers.
Incomes have been transferred from agriculture to both, consumers in the form of lower prices, as well as to the government in the form of taxes.

## Materials and methods

Calculation of support measures follows the methodology of the "OECD's Producer Support Estimate and Related Indicators of Agricultural Support – The PSE Manual" (OECD, 2010)

Eight commodities were selected for the analysis: wheat, corn, soybeans, sunflower, beef, pork meat, poultry and milk from 2007 to 2012. These eight commodities represent more than 70% of the total value of agricultural production

The Market Price Differentials (MPD)

The underlying principle is to measure the difference between two prices: a domestic market price in the presence of policies and a border price, representing the theoretical opportunity price for the domestic producers.

$MPD_i = PP_i - RP_i$
and
$RP_i = (BP_i \times QA_i - MM_i) \times WA_i$
Where:
$PP_i$ : producer price for commodity $i$
$RP_i$ : reference price for commodity $i$ (border price at farm gate)
$BP_i$ : border price for commodity $i$ or products derived from commodity $i$
$QA_i$ : quality adjustment coefficient for commodity $i$
$MM_i$ : marketing margin for commodity $i$
$WA_i$ : weight adjustment for commodity $i$

## Results

The difference between the Producer Price (PP) and the Reference Price (RP), multiplied by the total amount produced represents total transfer from producers to consumers and tax revenues. This is called the "**Market Price Support" (MPS)** of the commodity

| Market Price Support by commodity (2012) | MPS 2012 000 US$ | % Value of Production (farm gate) |
|---|---|---|
| Soybeans | -4896 | -33 |
| Corn | -1380 | -38 |
| Wheat | -2111 | -84 |
| Sunflower | -623 | -50 |
| Dairy | 916 | 25 |
| Beef | -59 | -1 |
| Poultry | 257 | 10 |
| Pigmeat | 384 | 51 |
| Total | -7612 | -12 |

Export taxes reduce domestic prices, thus a transfer results from producers to consumers (and taxes). The **Consumer Support Estimate (CSE)** is the annual monetary value of gross transfers to consumers, measured at the farm gate level. For the 2007-2012 period total CSE averaged US$ 3700 million/year.

CSE (000 US$)
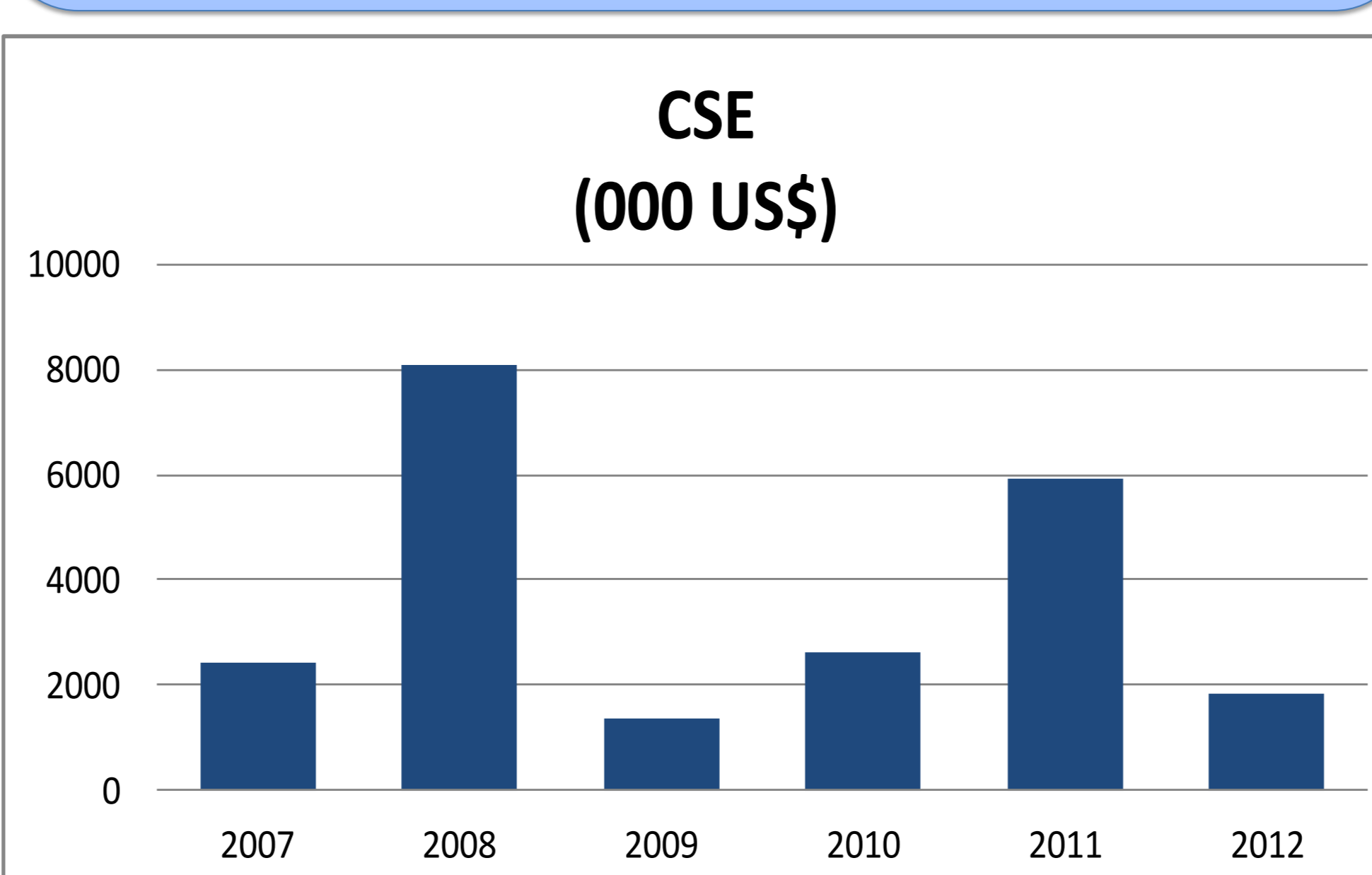
Producers may be eligible for different kinds of payments and/or subsidies on inputs used. Adding up price-based transfers (MPS) plus these other budgetary transfers, a total measure of transfers from/to agricultural producers is obtained: the *Producer Support Estimate* (PSE).

PSE as % of Gross Farm Receipts
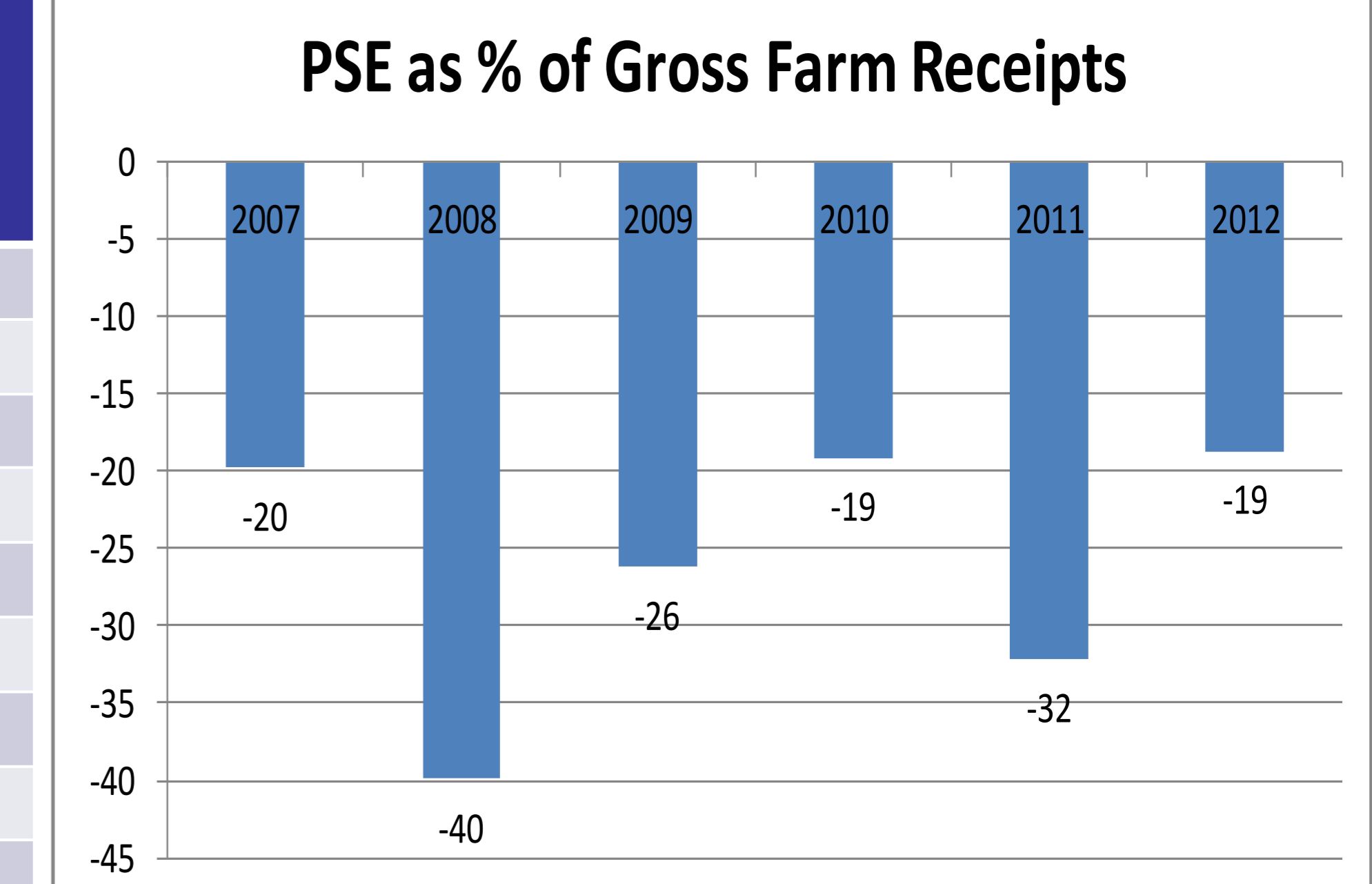
PSE results for Argentina contrast sharply with estimates for other southern hemisphere countries with large agricultural sectors as Australia, Brazil, Chile, New Zealand and South Africa (OECD 2013).

%PSE Estimates Southern Hemisphere 2007-1012

Australia — Brazil — Chile — New Zealand — South Africa — Argentina
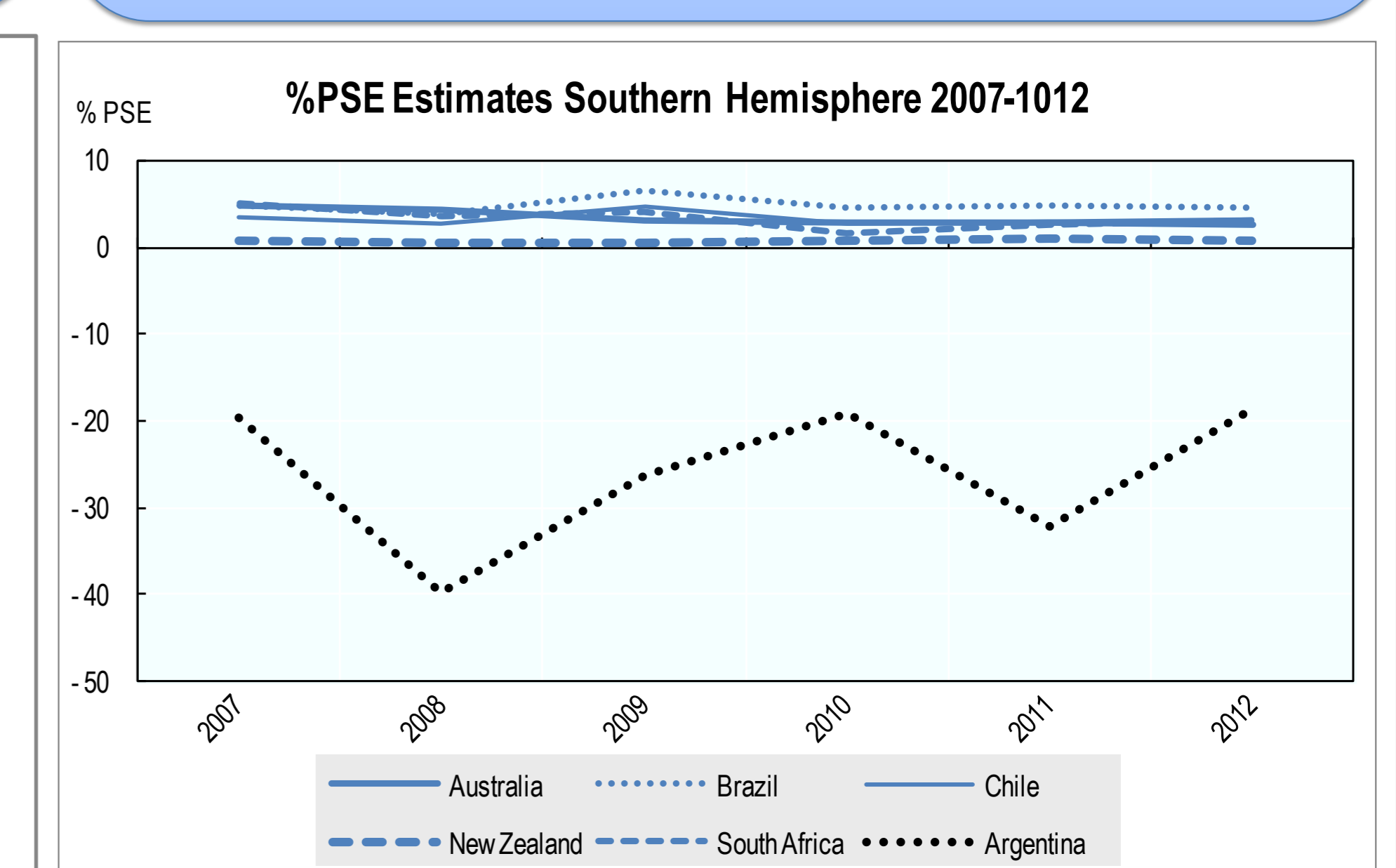
## Conclusions

• As a result of export taxes, domestic agricultural output prices have been lower than international prices
• Total transfers from producers have averaged US$ 11.000 million annually or 25-30% of total gross farm receipts.
• Grains and beef have the highest (negative) support relative to milk, poultry and pork meat production.
• Results indicate substantial transfers from agriculture to other sectors of the economy.
• The soybean crop accounts for a major portion of transfers from agriculture
• The fact that on average 90% of the soybeans are exported implies that these transfers go mostly from farmers to tax collection.
• For other activities, where exports are a smaller portion of total production (e.g. beef or wheat) lower domestic prices mainly benefit consumers, and only secondarily tax collection.

• Support flowing from the public sector to producers in the form of R&D, infrastructure and other "public good" type of inputs totalize some 500 million annually.
• An important issue to be addressed in future research relates to the "costs and benefits" resulting from taxes on exports and the consequences in terms of productivity and efficiency.
• Export taxes distort incentives to producers and as such introduce inefficiency and reduce the relative productivity.
• The magnitude of this inefficiency depends on the elasticity of supply: the higher this elasticity the higher the resulting inefficiency.
• Export taxes, however, result in lower food prices for consumers and tax revenue for government. Designing improved ways of subsidizing food consumption by low-income households, and alternative ways of financing government are challenges that remain.

## Literature cited

• OECD (2010), Trade and Agriculture Directorate, OECD'S Producer Support Estimate and Related Indicators of Agricultural Support – Concepts, Calculations, Interpretations and Use (The PSE Manual).

• OECD (2013), Agricultural Policy Monitoring and Evaluation 2013: OECD Countries and Emerging Economies, OECD Publishing. (DOI: 10.1787/agr_pol-2013-en)