

# An Overview of India COSIMO Model

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# Scheme of Presentation

- AGLINK – Commodity Simulation Model (COSIMO)
- India Stand Alone COSIMO Model
  - Constituents of the Model
  - Solving the Model
  - Scenario Analysis
- Further Work

## ■ The AGLINK-COSIMO model

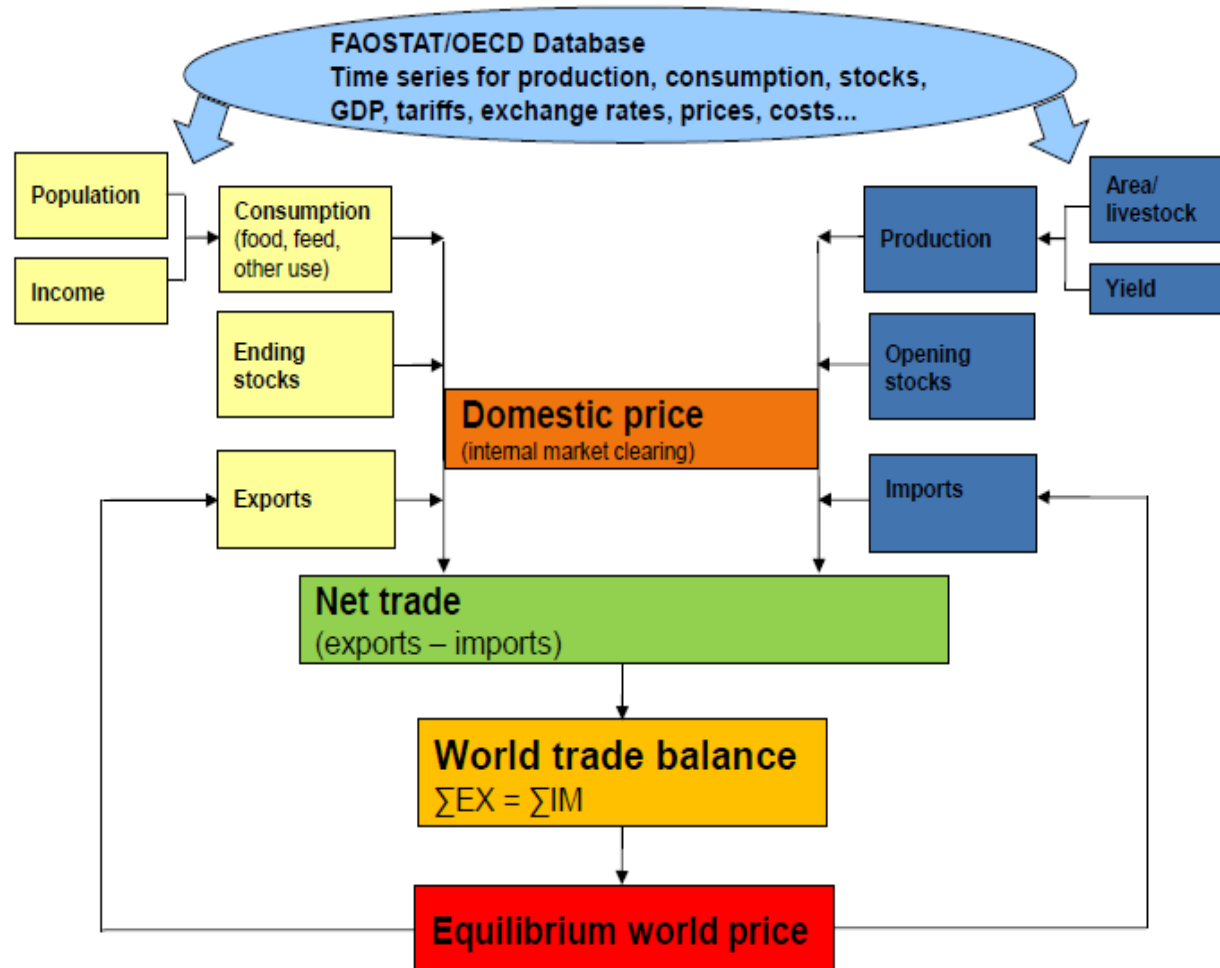
- is an integrated system to generate short, medium and long term projections for major agricultural commodities.
- is used to assess global supply, demand and trade, and their driving factors.
- can generate various scenarios to analyze emerging market and policy issues.
- aims to develop a ‘consensus analyses’ on the future evolution of international commodity markets.

- **Key features of the model:**

- Supply-Demand equilibrium.
- interactions between domestic and international markets.
- provides the 'baseline' for comparison and forming expectation.
- comprehensive coverage of both crop and livestock commodities.
- flexible to incorporate a number of policy features.
- suitable for policy simulations.

# AGLINK-COSIMO Framework

## Aglink-Cosimo model



- Advantages of the model:

- it provides scope for the disaggregated analysis.
- the structure of the model is flexible for any modification and extension.
- it has minimal data requirement.

# India COSIMO Model

List of Countries			
AGLINK	COSIMO		
Australia	Algeria	Malaysia	Uruguay
Argentina	Bangladesh	Mozambique	Vietnam
Brazil	Chile	Pakistan	Zambia
Canada	Colombia	Paraguay	
China	Egypt	Peru	
EU-27	Ethiopia	Philippines	
Japan	Ghana	Saudi Arabia	
South Korea	<i>India</i>	South Africa	
Mexico	Indonesia	Sudan	
New Zealand	Iran	Tanzania	
USA	Israel	Thailand	
Norway	Kazakhstan	Turkey	
Switzerland	Nigeria	Ukraine	

# Constituents of the Model

List of Commodities		
Wheat	Beef	Skim Milk Powder
Coarse Grains	Sheep Meat	Whole Milk Powder
Rice	Pig Meat	Cheese
Oilseeds	Poultry	Butter
Vegetable Oils	Eggs	Fresh Dairy Products
Oilseed Meals	Cotton	Bio-fuels
Roots and Tubers	Sugar	



# COSIMO Model Constituents

Behavioural structure of the India COSIMO Model

## Supply Side

- Crop production: Cropped area, Yield, and Production
- Oilseed products
  - Oilseed meal production, Protein meal production
  - Oilseed oil production, Vegetable oil production
- Meat production: Livestock Inventory and Indigenous meat production
- Milk production: Cow Inventory , Cow yield, Milk production, and Milk products
- Beginning Stock
- Imports

# COSIMO Model Constituents

## Demand Side

- Food demand
- Feed demand
- Bio-fuel crop feedstock demand
- Crop other use
- Ending Stock
- Exports

# COSIMO Model Constituents

## Prices

Export price = world price \* (1+export wedge) \* exchange rate

Import price = world price \* (1+tariff+import wedge) \* exchange rate

Producer price: Domestic market clearing

Production + Stocks (-1) + Imports = Consumption + Stocks + Exports

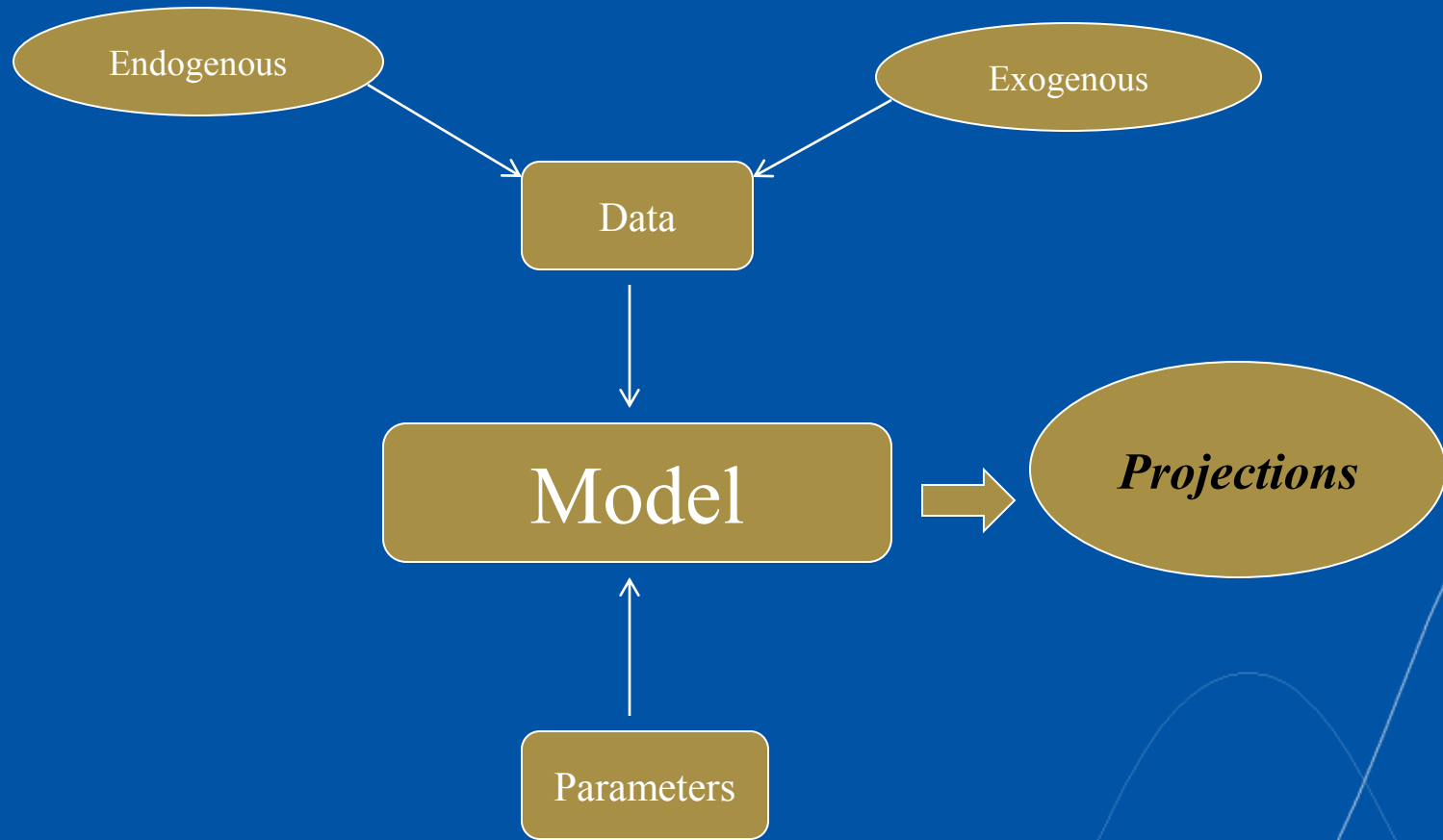
Consumer price: Consumer price = f (producer price, deflator)

## Parameters

- capture interrelationships among the variables
- determine the properties of the model
- ensure stability of the solution

- **Data Requirements:** Annual time series for the endogenous (1983 – 2014) and exogenous variables are used (1983 – 2014 are historic and 2015 – 2024 are projected).

# Solving the Model



# Scenario Analysis

INDview2015.xlsm - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View PDF

Clipboard Font Alignment Number Styles Cells Editing Privacy

G61 fx 2

Complete Data file for: **IND**

Country: **India**

Select Commodity: **WT**

Update Commodity Code here: **Wheat**

Area: **AH**

Net Trade

Exports

Imports

Producer Price

Real Price

Base

Adjusted

R-Factor

S&U Bal.

Year	Base	Adjusted	R-Factor	S&U Bal.
2014/2015	31500.00		1.06	0.00
2015/2016	32231.28		1.06	0.00
2016/2017	32261.69		1.06	0.00
2017/2018	32132.25		1.06	0.00
2018/2019	32026.00		1.06	0.00
2019/2020	31961.95		1.06	0.00
2020/2021	31921.47		1.06	0.00
2021/2022	31888.35		1.06	0.00
2022/2023	31864.94		1.06	0.00
2023/2024	31843.24		1.06	0.00
2024/2025	31816.12		1.06	0.00
annual Δ	-0.16%	2		
total Δ	-1%			
last 10y Δ	1.77%			

Problem: #REF!

Store exo variable

Store Line Adjustment

Store exo variable

Store Point Adjustment

Export Fixups

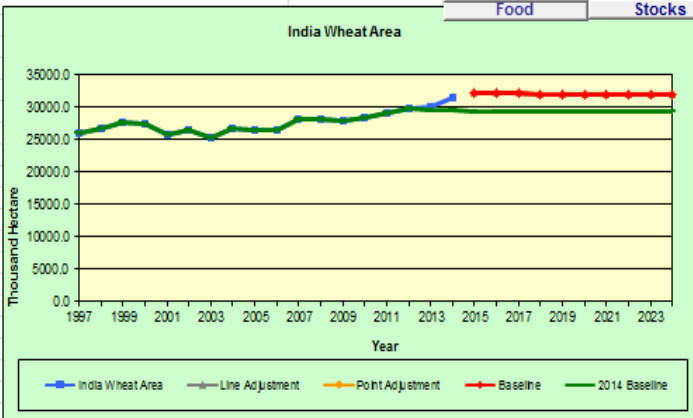
Apply Growth Rate

New Trol Run

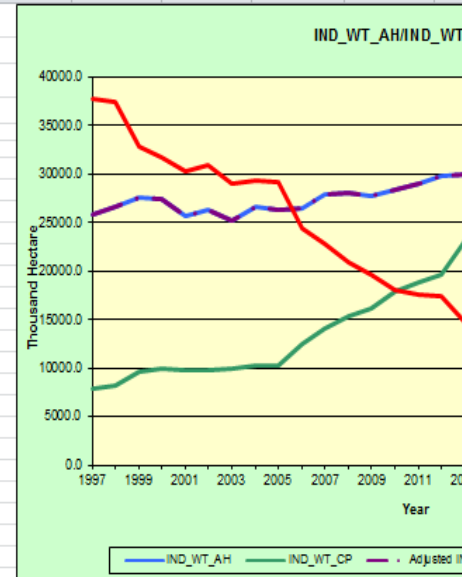
Store 2009 Baseline

Display Indicators

Display Ratio Tool



IND\_WT\_AH/IND\_WT



Thousand Hectare

Year

IND\_WT\_AH IND\_WT\_CP Adjusted INC

Base Values: 2015/2016 2024/2025

Enter Adjusted Values Here:

lastyear Baseline input Storage EXO Definitions

Ready

Microsoft Office Microsoft Office 2010 T... Microsoft Access 2010

16:11 08/04/2015

# Scope for Future Works

- More inputs on the elasticity coefficients and share parameters.
- A new block on 'Pulses'.
- A new segment of Public Distribution System (PDS) to address the impact of National Food Security programme.

# Comments and Suggestions

