Forecasting the Price of Soybean Meal

Commodity	Soybean Meal (CBT)
Forecast Period	July 2017 – December 2017
Currency	Cents (€)
Unit	Bushel
Observations	Monthly forecasts of the average spot price in the last week of the previous month

Forecasts

Observed Prices   Forecasts
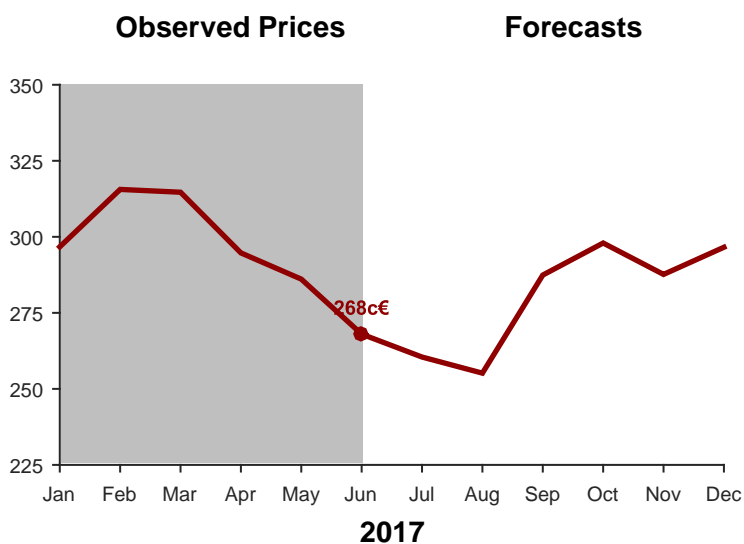
2017

Month/Year	Forecast	Prob. of Raise
Jul. 2017	260c€	48 %
Aug. 2017	255c€	41 %
Sep. 2017	287c€	62 %
Oct. 2017	298c€	66 %
Nov. 2017	288c€	58 %
Dec. 2017	297c€	58 %

Suggested Action for Procurement

| Purchase Limit Month	Suggested Action
July 2017	Buy in July
August 2017	Wait
September 2017	Wait
October 2017	Buy part of requirements
November 2017	Buy part of requirements
December 2017	Buy part of requirements

Forecasting the Price of Soybean Meal

Impact Analysis: One Month Forecast
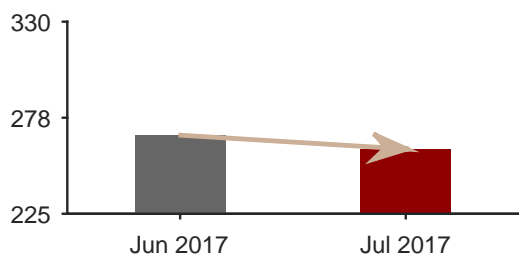
Our algorithm forecasts a lower price of Soybean Meal in one month: it is expectable that the price decreases 2.80% from 268c€ to 260c€ until the beginning of July.
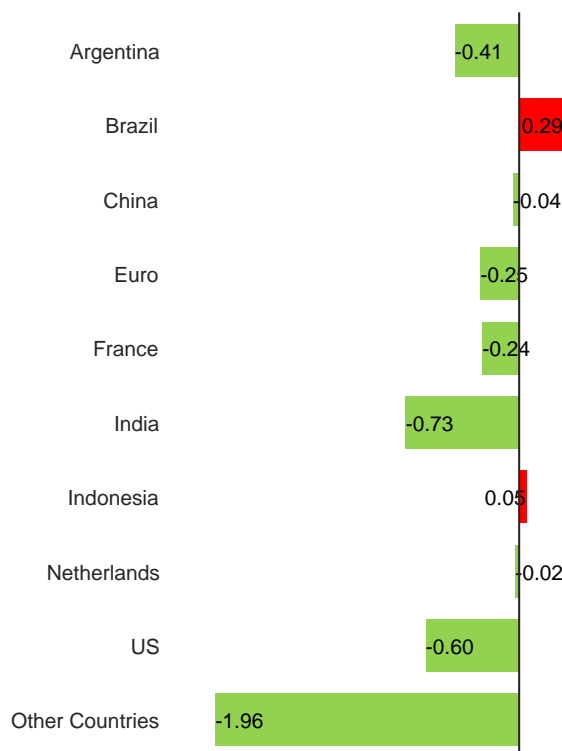
Indices of Factors
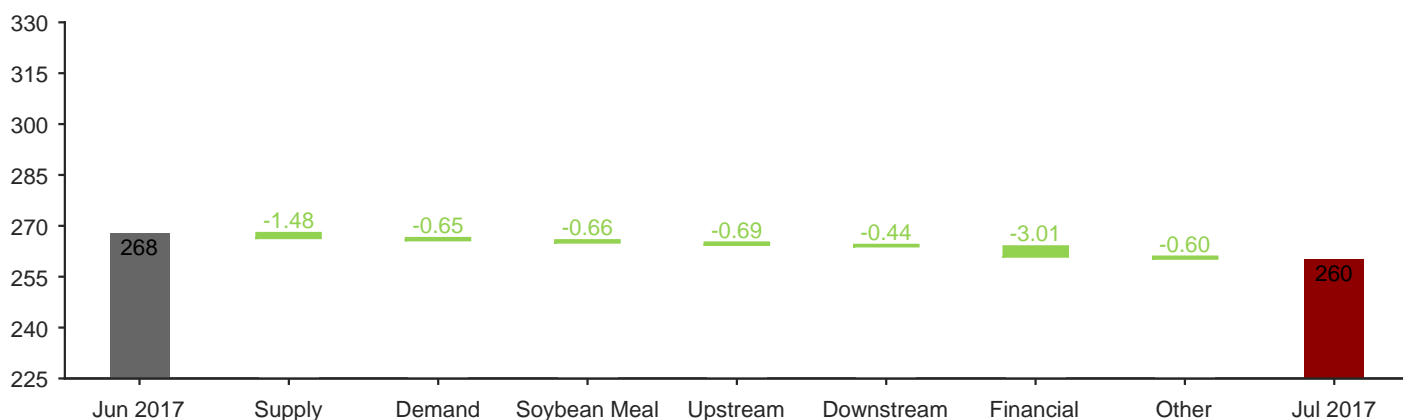
Interpretation

- **Increase of Supply**: Negative pressure of the Supply index

- **Decrease of Demand**: Negative pressure of the Demand index

- Negative pressure of the index of Soybean Meal

- Negative pressure of the index of variables representing the market upstream

- Negative pressure of the index of variables representing the market downstream

- **Considerably negative pressure of the financial index**

- Negative pressure of other commodities and other factors
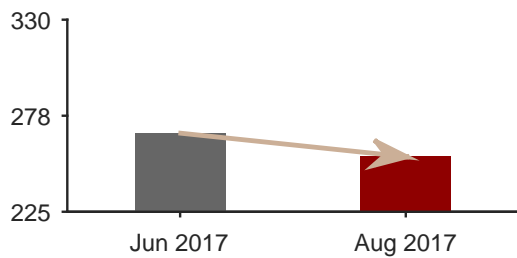
- Focus on Mexico, India, and US

Impact per Country

| Country	Value
Argentina	-0.41
Brazil	0.29
China	-0.04
Euro	-0.25
France	-0.24
India	-0.73
Indonesia	0.05
Netherlands	-0.02
US	-0.60
Other Countries	-1.96

Forecasting the Price of Soybean Meal

Impact Analysis: Two Months Forecast

Our algorithm forecasts a lower price of Soybean Meal in two months: it is expectable that the price decreases 4.78% from 268c€ to 255c€ until the beginning of August.

Indices of Factors
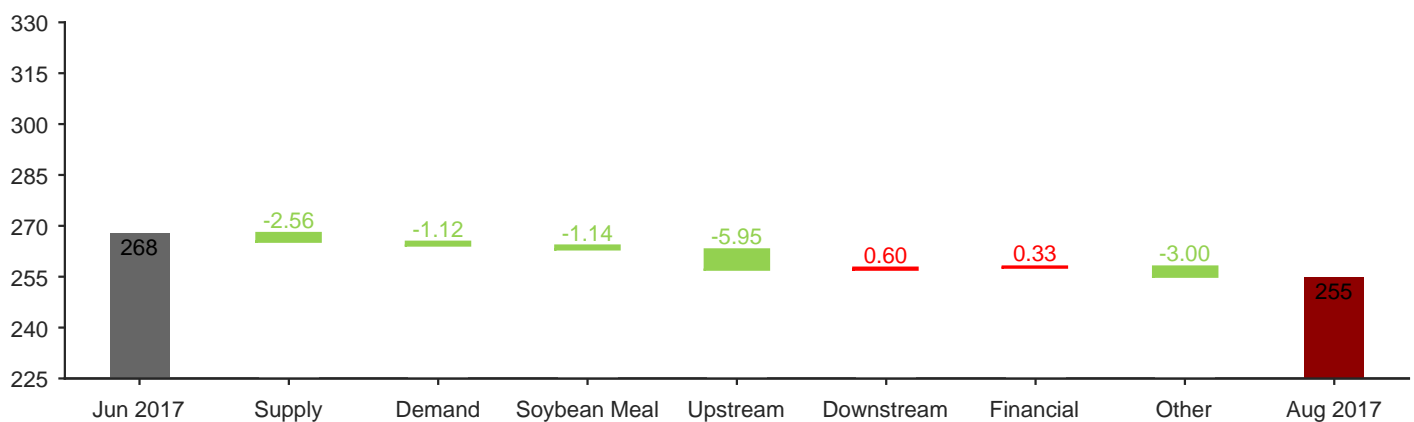
Interpretation

- **Increase of Supply**: Negative pressure of the Supply index
- **Decrease of Demand**: Negative pressure of the Demand index
- Negative pressure of the index of Soybean Meal
- **Considerably negative pressure of the index of variables representing the market upstream**
- Positive pressure of the index of variables representing the market downstream
- Slightly positive pressure of the financial index
- Negative pressure of other commodities and other factors
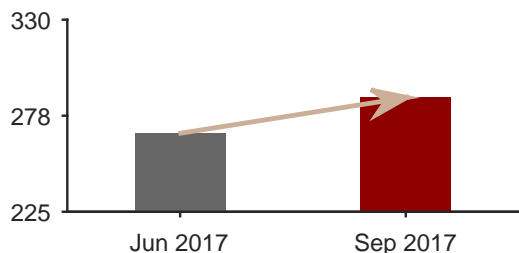- Focus on US, India, and Japan

Impact per Country

Forecasting the Price of Soybean Meal

Impact Analysis: Three Months Forecast

Our algorithm forecasts a higher price of Soybean Meal in three months: it is expectable that the price increases 7.24% from 268c€ to 287c€ until the beginning of September.

Indices of Factors
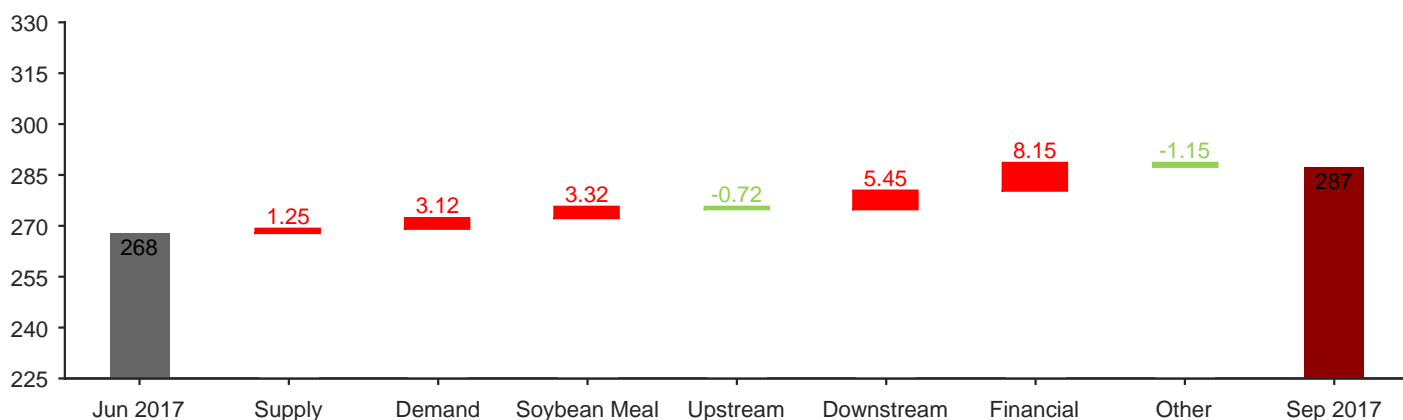
Interpretation

- **Decrease of Supply**: Positive pressure of the Supply index
- **Increase of Demand**: Positive pressure of the Demand index
- Positive pressure of the index of Soybean Meal
- Slightly negative pressure of the index of variables representing the market upstream
- Positive pressure of the index of variables representing the market downstream
- **Considerably positive pressure of the financial index**
- Negative pressure of other commodities and other factors
- Focus on US, India, and Argentina
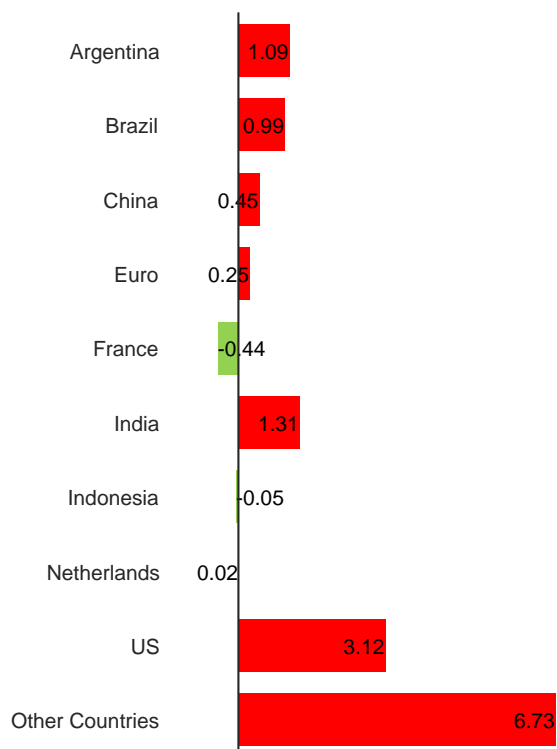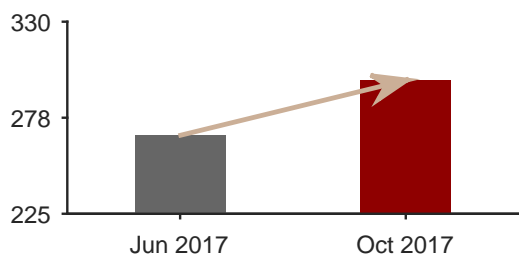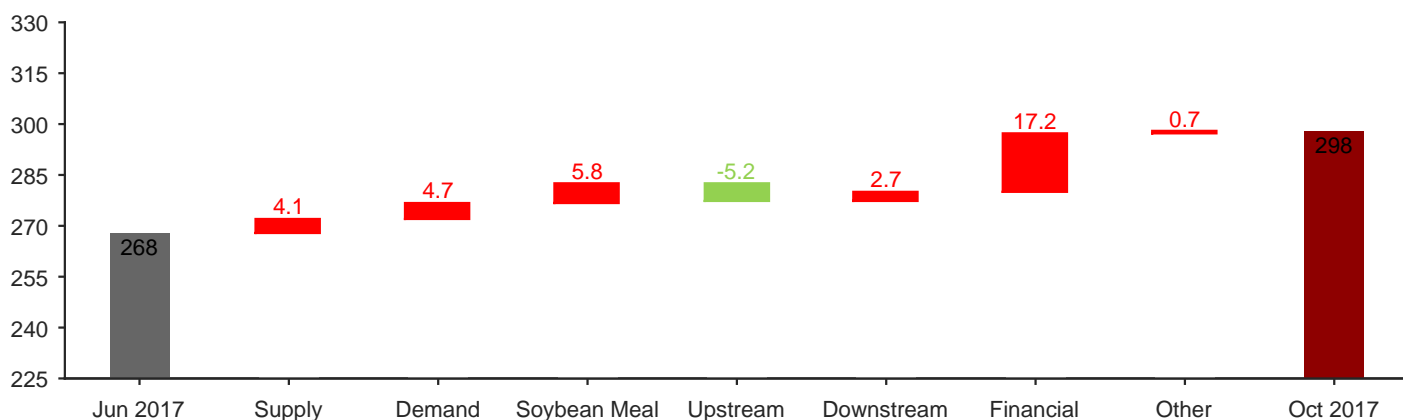
Impact per Country

Forecasting the Price of Soybean Meal

Impact Analysis: Four Months Forecast

Our algorithm forecasts a higher price of Soybean Meal in four months: it is expectable that the price increases 11.18% from 268c€ to 298c€ until the beginning of October.

Indices of Factors

Interpretation

- **Decrease of Supply**: Positive pressure of the Supply index

- **Increase of Demand**: Positive pressure of the Demand index

- Positive pressure of the index of Soybean Meal

- Negative pressure of the index of variables representing the market upstream

- Positive pressure of the index of variables representing the market downstream

- **Considerably positive pressure of the financial index**

- Slightly positive pressure of other commodities and other factors

- Focus on US, Indonesia, and Mexico

Impact per Country

Country	Value
Argentina	0.95
Brazil	0.07
China	-0.78
Euro	0.27
France	-0.14
India	0.37
Indonesia	1.53
Netherlands	0.09
US	3.97
Other Countries	6.33

Forecasting the Price of Soybean Meal

Impact Analysis: Five Months Forecast

Our algorithm forecasts a higher price of Soybean Meal in five months: it is expectable that the price increases 7.32% from 268c€ to 288c€ until the beginning of November.
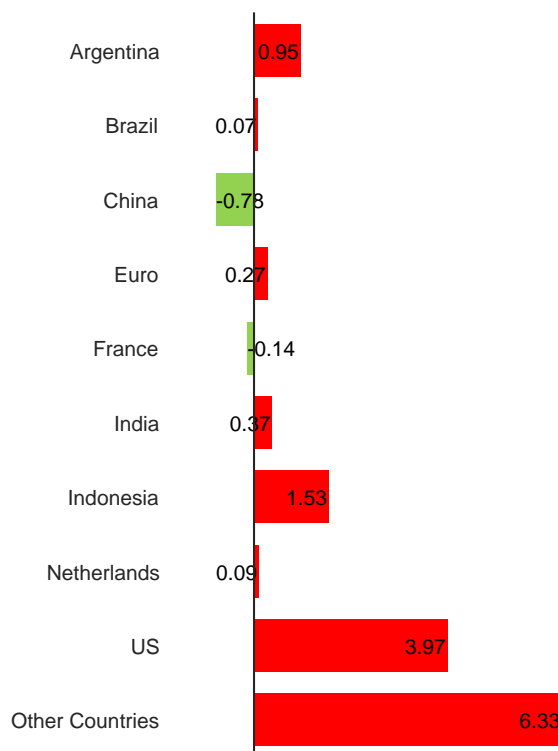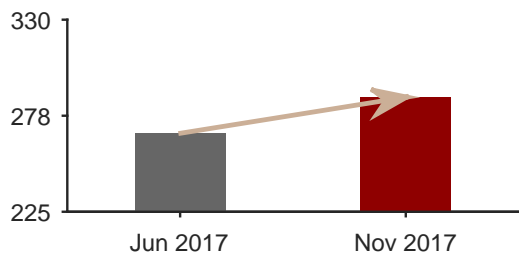
Indices of Factors

Interpretation

- Slight decrease of Supply: Positive pressure of the Supply index

- **Increase of Demand**: Positive pressure of the Demand index

- **Considerably positive pressure of the index of Soybean Meal**

- Positive pressure of the index of variables representing the market upstream

- **Considerably positive pressure of the index of variables representing the market downstream**

- Negative pressure of the financial index

- Slightly positive pressure of other commodities and other factors

- Focus on US, UK, and Mexico

Impact per Country

Forecasting the Price of Soybean Meal

Impact Analysis: Six Months Forecast

Our algorithm forecasts a higher price of Soybean Meal in six months: it is expectable that the price increases 10.66% from 268c€ to 297c€ until the beginning of December.
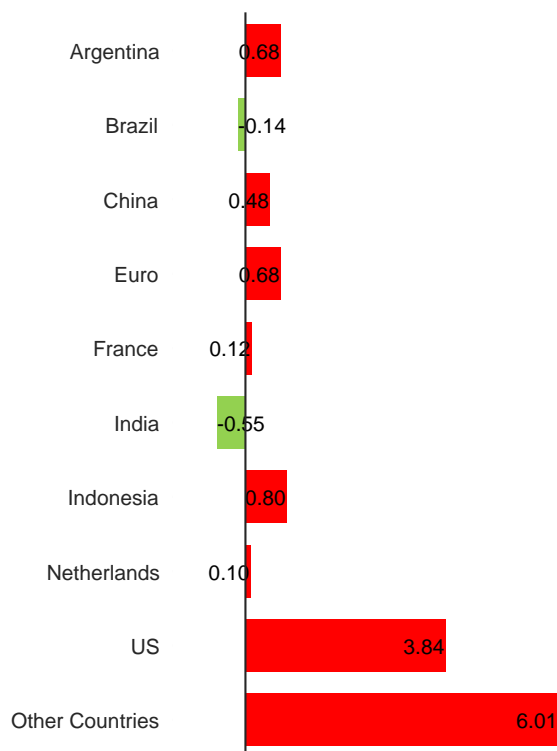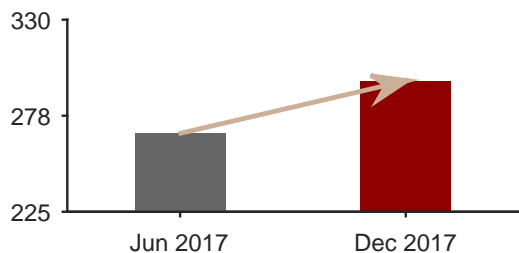
Indices of Factors
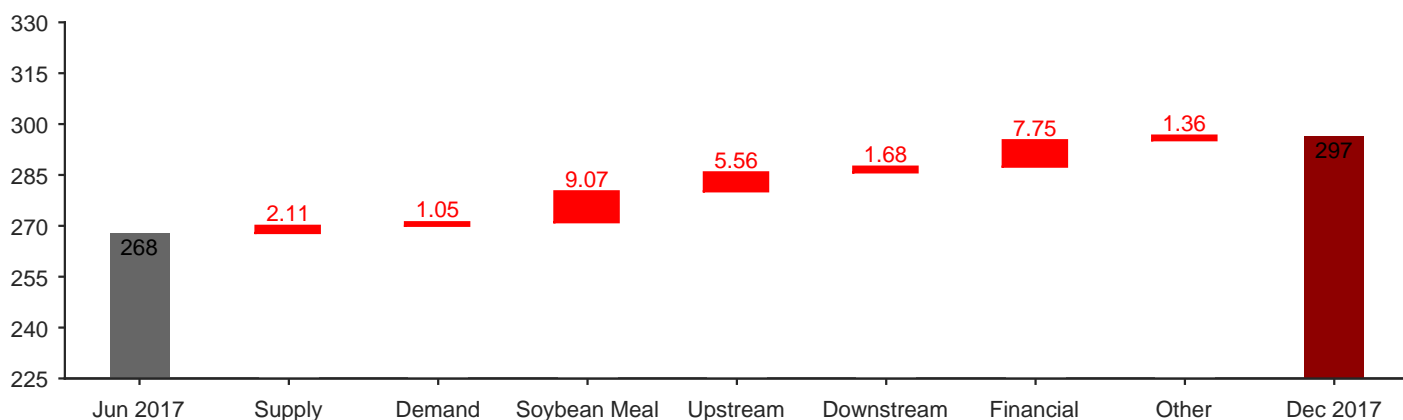
Interpretation

- **Decrease of Supply**: Positive pressure of the Supply index

- **Increase of Demand**: Positive pressure of the Demand index

- **Considerably positive pressure of the index of Soybean Meal**

- Positive pressure of the index of variables representing the market upstream

- Positive pressure of the index of variables representing the market downstream

- **Considerably positive pressure of the financial index**

- Positive pressure of other commodities and other factors

- Focus on US, Indonesia, and Mexico

Impact per Country

Country	Value
Argentina	1.01
Brazil	-0.56
China	-0.02
Euro	0.35
France	0.48
India	0.77
Indonesia	1.29
Netherlands	0.05
US	2.33
Other Countries	5.69

Forecasting the Price of Soybean Meal
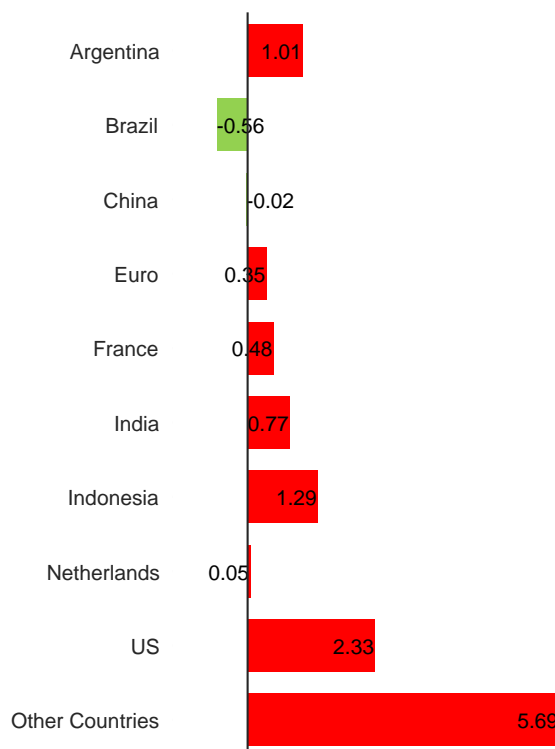
APPENDIX – Technical Explanation of the Impact Analysis

In this appendix, we explain the impact analysis of the factors that most contribute for our forecasts.

This Impact Analysis is conducted individually for **each time horizon**, allowing for a distinction between the indices of variables that contribute for our forecasts at short and medium run.

For each time horizon, our analysis has **two components**: first, we present the impact of variables grouped by **indices of factors**; second we present the impact of variables grouped by **indices of countries**.

Indices of Factors

Indices of factors are indices of the weighted contributions of the variables grouped in those factors.

Supply Index: composed of macroeconomic variables of the producing and exporting countries. It includes variables such as production, exchange rates, inflation, monetary policy, and wages. For example, an increase in wages implies higher production costs which should (in linear, general, and ceteris paribus terms) generate an incentive to increase prices;

Demand index: composed of macroeconomic variables of the consuming and importing countries. It includes variables such as production, exchange rates, inflation, monetary policy, and wages. For example, a decrease in a consumer confidence index should (in linear, general, and ceteris paribus terms) increase savings and decrease demand, leading to lower prices;

Soybean Meal Index: composed of variables related to Soybean Meal. It includes variables such as the price of Soybean Meal in different regions of the world and exports, imports, and producer prices of Soybean Meal in some countries. For example, an increase in the price of Soybean Meal in other region may imply an increase in the price of Soybean Meal in Europe due to arbitrage movements;

Upstream index: composed of variables related to Soybean, Weather, and Fertilizers. It includes variables such as the price and exports, imports, and producer prices of the inputs in some countries. For example, an increase in the price of Fertilizers should (in linear, general, and ceteris paribus terms) generate an increase in the price of Soybean Meal;

Forecasting the Price of Soybean Meal

APPENDIX – Technical Explanation of the Impact Analysis (II)

Downstream index: composed of variables related to the Feed Industry. It includes variables such as the exports, imports, and prices of Pork, Poultry and Beef in some countries. For example, an increase in the demand of Pork should (in linear, general, and ceteris paribus terms) generate an increase in the price of Soybean Meal;

Financial Variables Index: composed of financial market variables. It includes the share price of companies that produce Soybean Meal. It also includes financial indices related to this sector. For example, a positive change in the share price of a producer of Soybean Meal should (in linear, general, and ceteris paribus terms) imply an increase in expected profitability of the firm. This may signal an expectation of increase in the price of Soybean Meal;

Other Variables Index: composed of variables related to other cereals, such as Corn and Wheat. It includes the price, exports, and imports of these commodities. For example, a positive change in the price of a substitute commodity, should (in linear, general, and ceteris paribus terms) imply an increase of demand of Soybean Meal, and thus, of the price of Soybean Meal.

Indices of Countries

Indices of Countries: are indices of the weighted contributions of the macroeconomic variables of each country. The countries we present are the most relevant countries in the production, consumption, and international commerce of Soybean Meal.

Interpretation Warning

Forecasting the Price of Soybean Meal

It is important to note that the contribution of individual variables and indices of variables is not linear. The interaction between variables and between variables of different factors may not be neglectable, which means that the importance of each variable and indices of variables is determined together with the importance of all other variables.

Furthermore, the analysis of changes in variables is not linear. This means that the same variable with the same change in different moments of time may have different impacts given its previous evolution. For example, the algorithm contrasts the change in a variable with its expected change. A positive change but inferior to the expected change may originate an effect of price correction.