Forecasting the Price of Corn
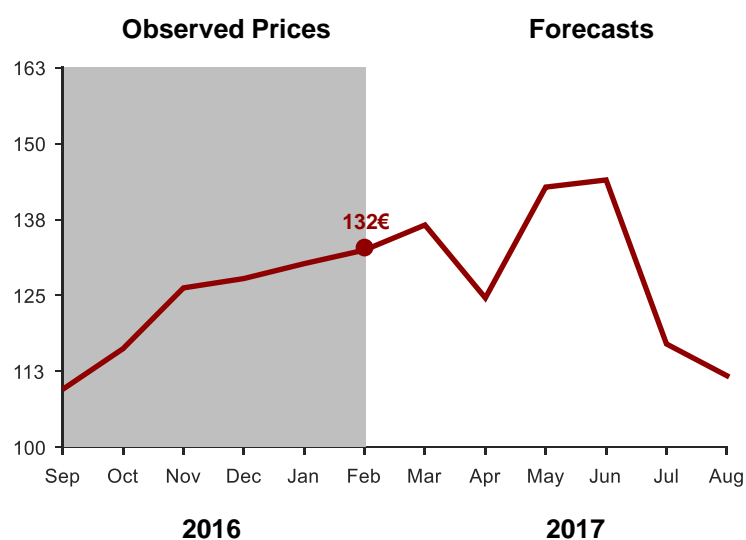
Commodities	Corn (CBT)
Forecast Period	March 2017 – August 2017
Currency	Cents (€)
Unit	Metric Tonne
Observations	Monthly forecasts of the spot price in the last week of the previous month

Forecasts

Observed Prices   **Forecasts**

2016   **2017**

| Month/Year	Forecast	Prob. of Raise
Mar. 2017	137€	54%
Apr. 2017	125€	39%
May 2017	143€	50%
Jun. 2017	144€	51%
Jul. 2017	117€	40%
Aug. 2017	112€	36%

Suggested Action for Procurement

| Purchase Limit Month	Suggested Action
March 2017	Buy in February at 132€
April 2017	Buy part of requirements
May 2017	Buy part of requirements
June 2017	Buy part of requirements
July 2017	Buy part of requirements
August 2017	Buy part of requirements

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Forecasting the Price of Corn

Impact Analysis: One Month Forecast
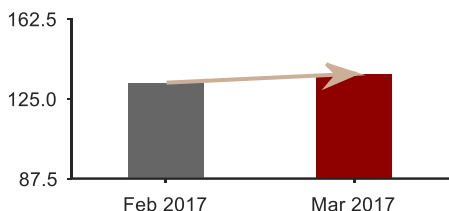
Our algorithm forecasts a higher price of Corn in one month: it is expectable that the price increases 3,11% from 132€ to 137€ until the beginning of March.
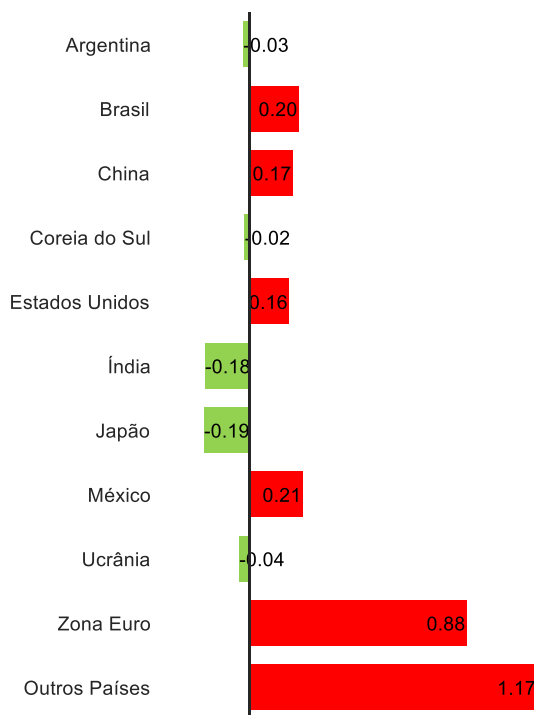
Indices of Factors
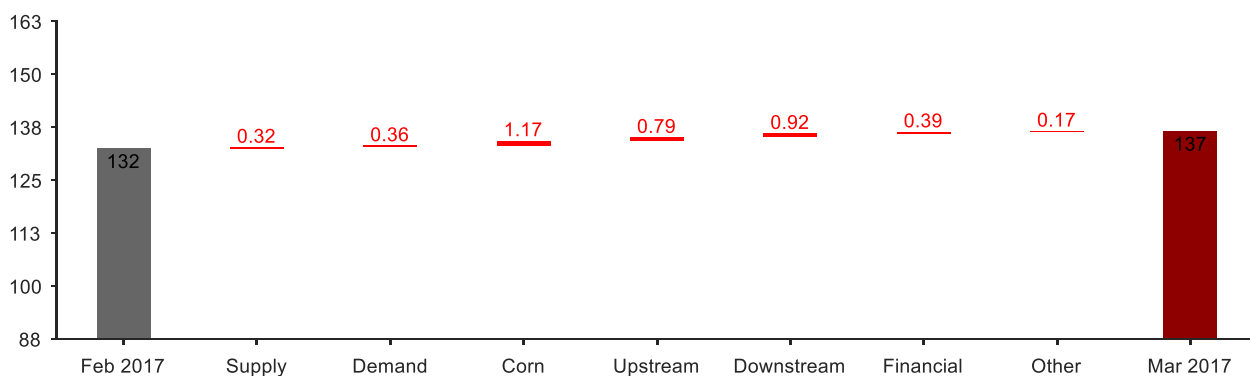
Interpretation

- **Decrease of Supply**: Positive pressure of the Supply index
- **Increase of Demand:** Positive pressure of the Demand index
- Positive pressure of the index of Corn
- Positive pressure of the index of variables representing the market upstream
- Positive pressure of the index of variables representing the market downstream
- Positive pressure of the financial index
- Positive pressure of other commodities and other factors
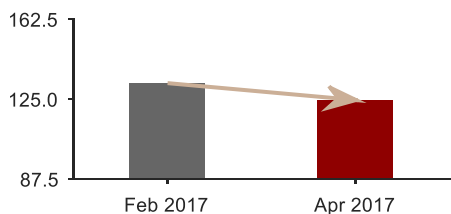- Focus on Euro, Egypt, and UK

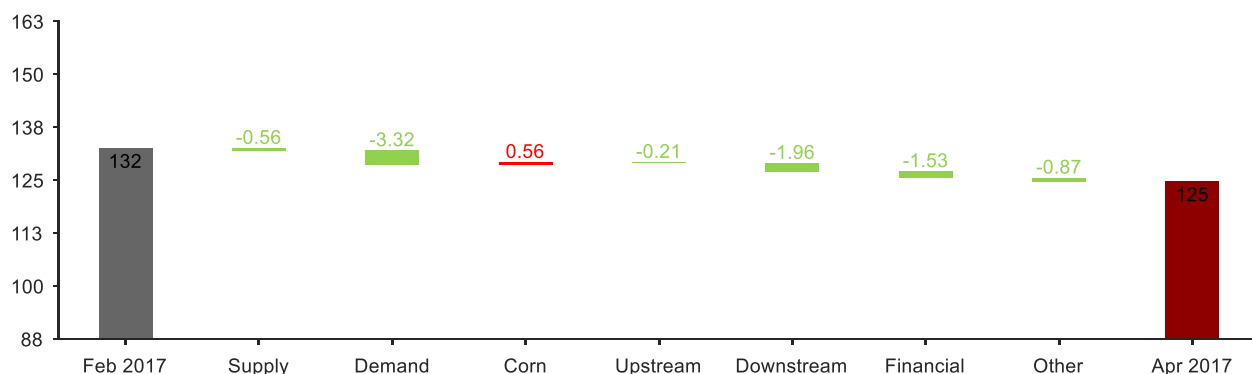### Impact per Country

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Forecasting the Price of Corn

Impact Analysis: Two Months Forecast

Our algorithm forecasts a lower price of Corn in two months: it is expectable that the price decreases 5,95% from 132€ to 125€ until the beginning of April.
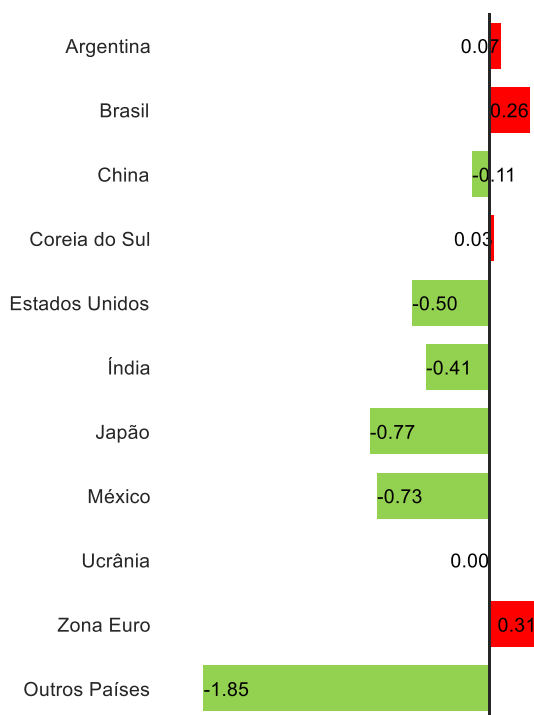
Indices of Factors

Interpretation

- **Increase of Supply:** Negative pressure of the Supply index
- **Considerable decrease of Demand:** Negative pressure of the Demand index
- Positive pressure of the index of Corn
- Slightly negative pressure of the index of variables representing the market upstream
- Negative pressure of the index of variables representing the market downstream
- Negative pressure of the financial index
- Negative pressure of other commodities and other factors
- Focus on Egypt, Japan, and Mexico

Impact per Country

Country	Value
Argentina	0.07
Brasil	0.26
China	-0.11
Coreia do Sul	0.03
Estados Unidos	-0.50
Índia	-0.41
Japão	-0.77
México	-0.73
Ucrânia	0.00
Zona Euro	0.31
Outros Países	-1.85

Forecasting the Price of Corn

Impact Analysis: Three Months Forecast

Our algorithm forecasts a higher price of Corn in three months: it is expectable that the price increases 7,82% from 132€ to 143€ until the beginning of May.

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 Corn
- Positive pressure of the index of variables representing the market upstream
- Positive pressure of the index of variables representing the market downstream
- Positive pressure of the financial index
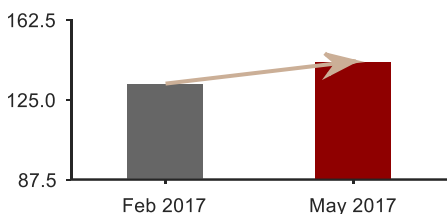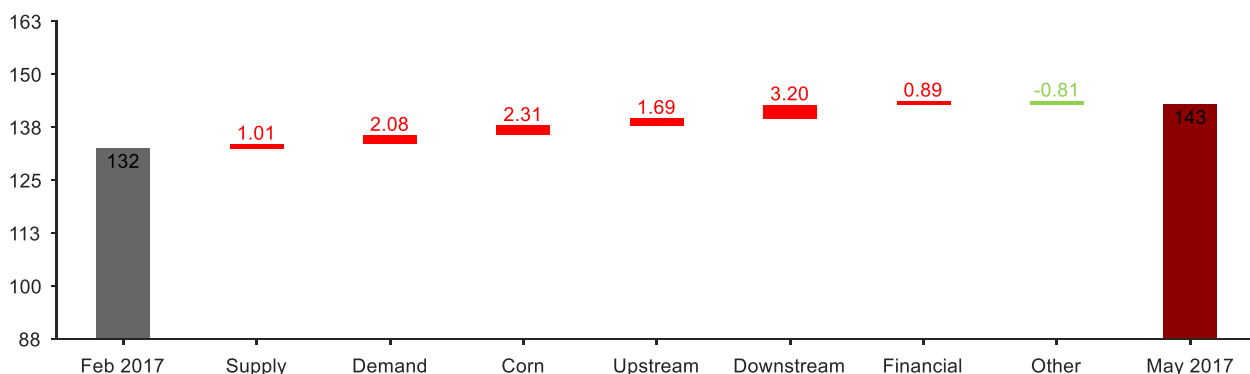- Negative pressure of other commodities and other factors
- Focus on US, Taiwan, and Malaysia

Impact per Country

WATSON & NOBLE

Forecasting the Price of Corn

Impact Analysis: Four Months Forecast
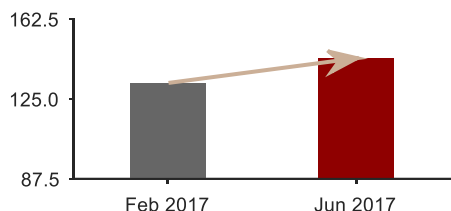
Our algorithm forecasts a higher price of Corn in four months: it is expectable that the price increases 8,71% from 132€ to 144€ until the beginning of June.
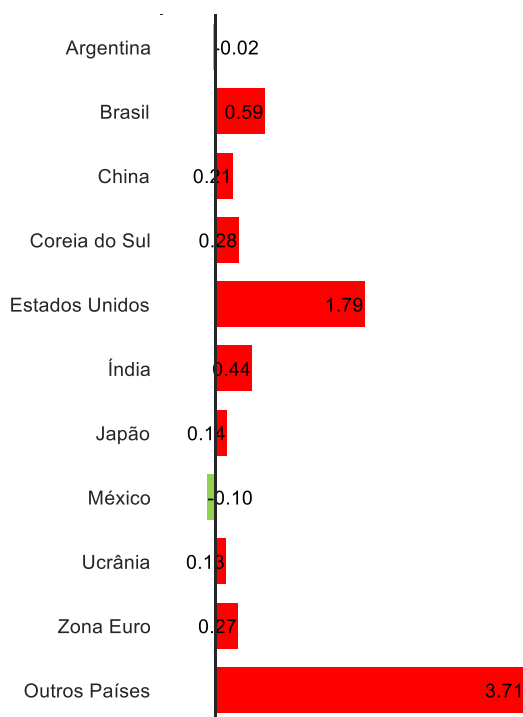
Indices of Factors
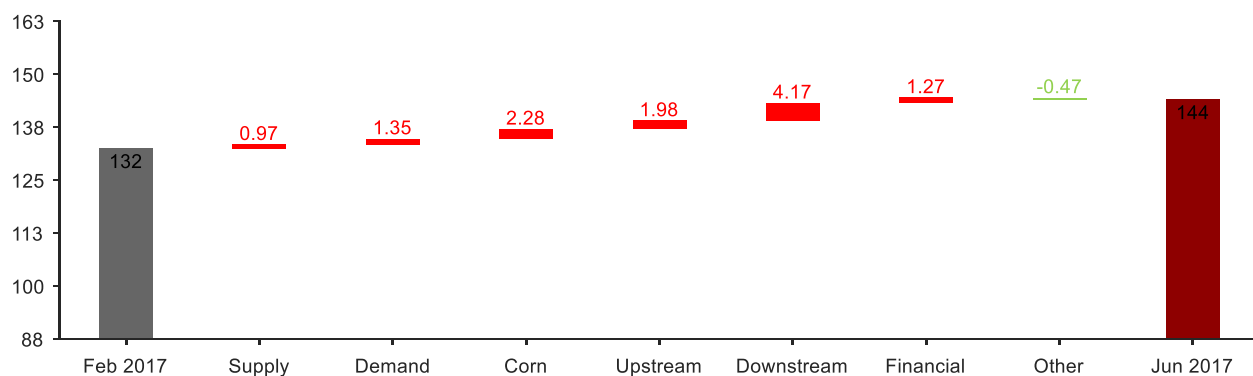
Interpretation

- **Decrease of Supply:** Positive pressure of the Supply index
- **Increase of Demand:** Positive pressure of the Demand index
- Positive pressure of the index of Corn
- Positive pressure of the index of variables representing the market upstream
- **Considerably positive pressure of the index of variables representing the market downstream**
- Positive pressure of the financial index
- Negative pressure of other commodities and other factors
- Focus on US, Russia, and Malaysia

### Impact per Country

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Forecasting the Price of Corn

Impact Analysis: Five Months Forecast

Our algorithm forecasts a lower price of Corn in five months: it is expectable that the price decreases 11,66% from 132€ to 117€ until the beginning of July.
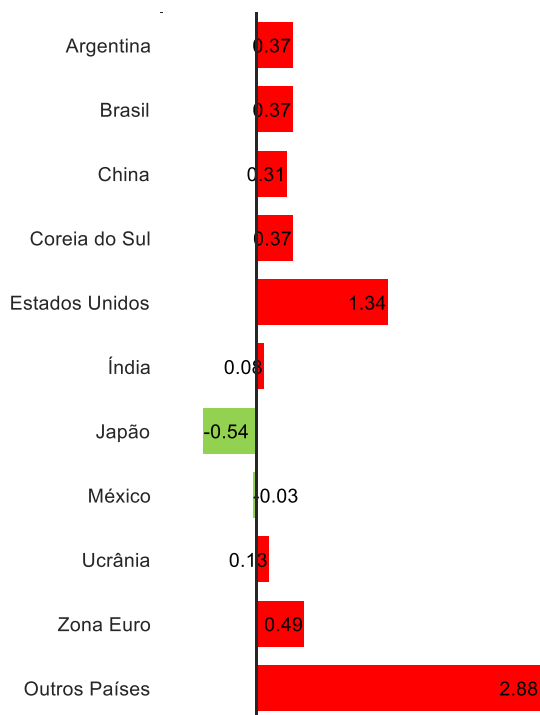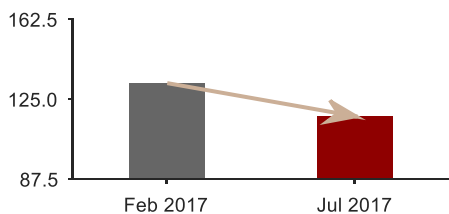
Indices of Factors
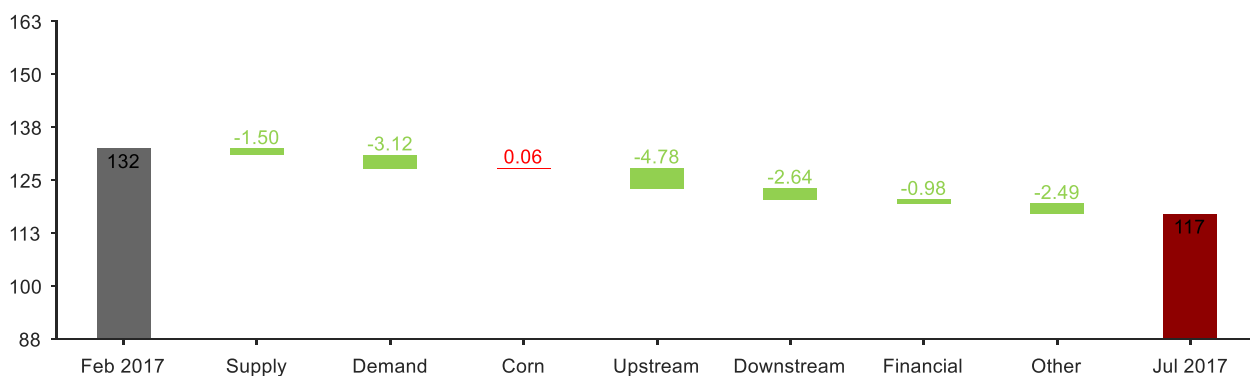
Interpretation

- **Increase of Supply:** Negative pressure of the Supply index
- **Considerable decrease of Demand:** Negative pressure of the Demand index
- Slightly positive pressure of the index of Corn
- **Considerably negative pressure of the index of variables representing the market upstream**
- Negative pressure of the index of variables representing the market downstream
- Negative pressure of the financial index
- Negative pressure of other commodities and other factors
- Focus on Egypt, Mexico, and Euro

Impact per Country

| Country	Value
Argentina	-0.41
Brasil	0.23
China	-0.40
Coreia do Sul	0.03
Estados Unidos	-0.72
Índia	-0.32
Japão	-0.69
México	-1.06
Ucrânia	0.19
Zona Euro	-0.87
Outros Países	-4.02

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Forecasting the Price of Corn

Impact Analysis: Six Months Forecast

Our algorithm forecasts a lower price of Corn in six months: it is expectable that the price decreases 15,61% from 132€ to 112€ until the beginning of August.

Indices of Factors
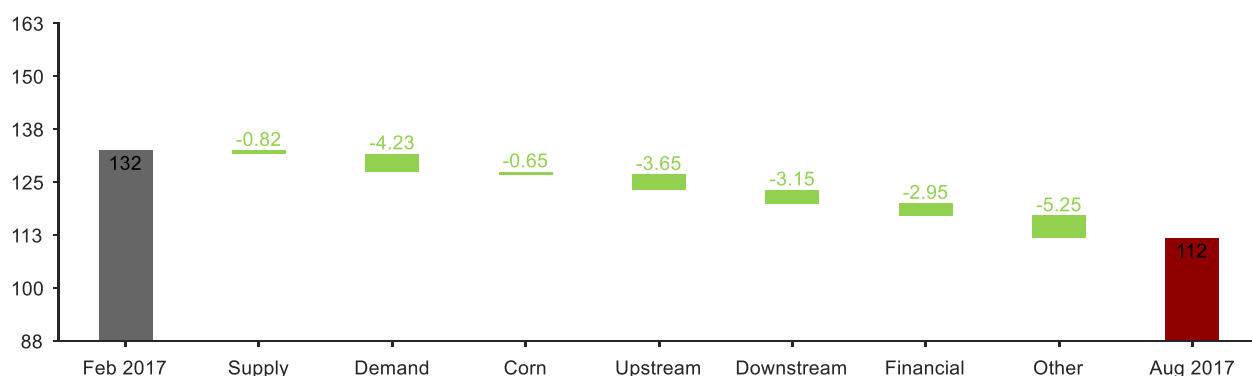
Interpretation

- **Increase of Supply:** Negative pressure of the Supply index
- **Considerable decrease of Demand:** Negative pressure of the Demand index
- Slightly negative pressure of the index of Corn
- **Considerably negative pressure of the index of variables representing the market upstream**
- **Considerably negative pressure of the index of variables representing the market downstream**
- Negative pressure of the financial index
- **Considerably negative pressure of other commodities and other factors**
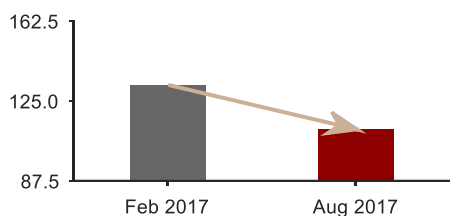- Focus on Egypt, Mexico, and Japan

Impact per Country
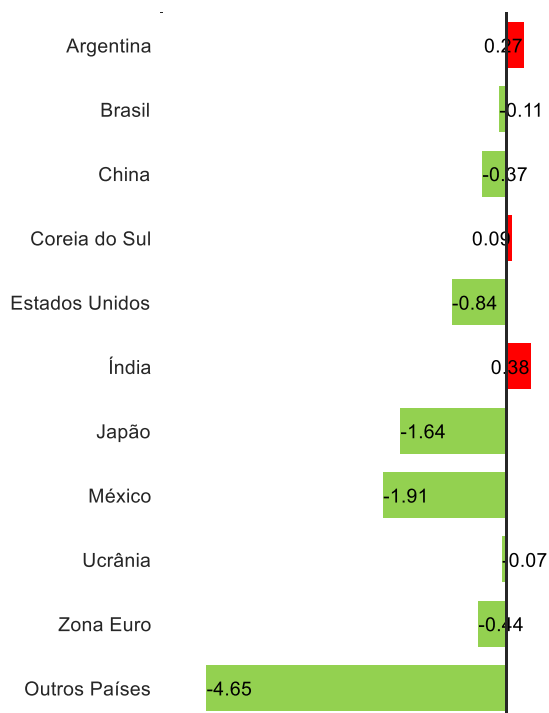
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Forecasting the Price of Corn

APPENDIX I – 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;

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

Upstream index: composed of variables related to 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 Corn;

Forecasting the Price of Corn

APPENDIX – Technical Explanation of the Impact Analysis

Downstream index: composed of variables related to feed industries. 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 Corn;

Financial Variables Index: composed of financial market variables. It includes the share price of companies that produce Corn. It also includes financial indices related to this sector. For example, a positive change in the share price of a Corn producer 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 Corn;

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

Country Indices

Country Indices 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 Corn.

Interpretation Warning

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.