

# Stock Module

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## Abstract

This vignette provides a detailed analysis of the AMIS data for the stock module.

## 1. AMIS Data

The data below was pulled from the AMIS website by the link <http://statistics.amis-outlook.org><sup>\*\*</sup>. The variables studied are: Closing Stocks, Opening Stocks<sup>\*\*</sup> and Total Supply for all 23 countries present in AMIS database.

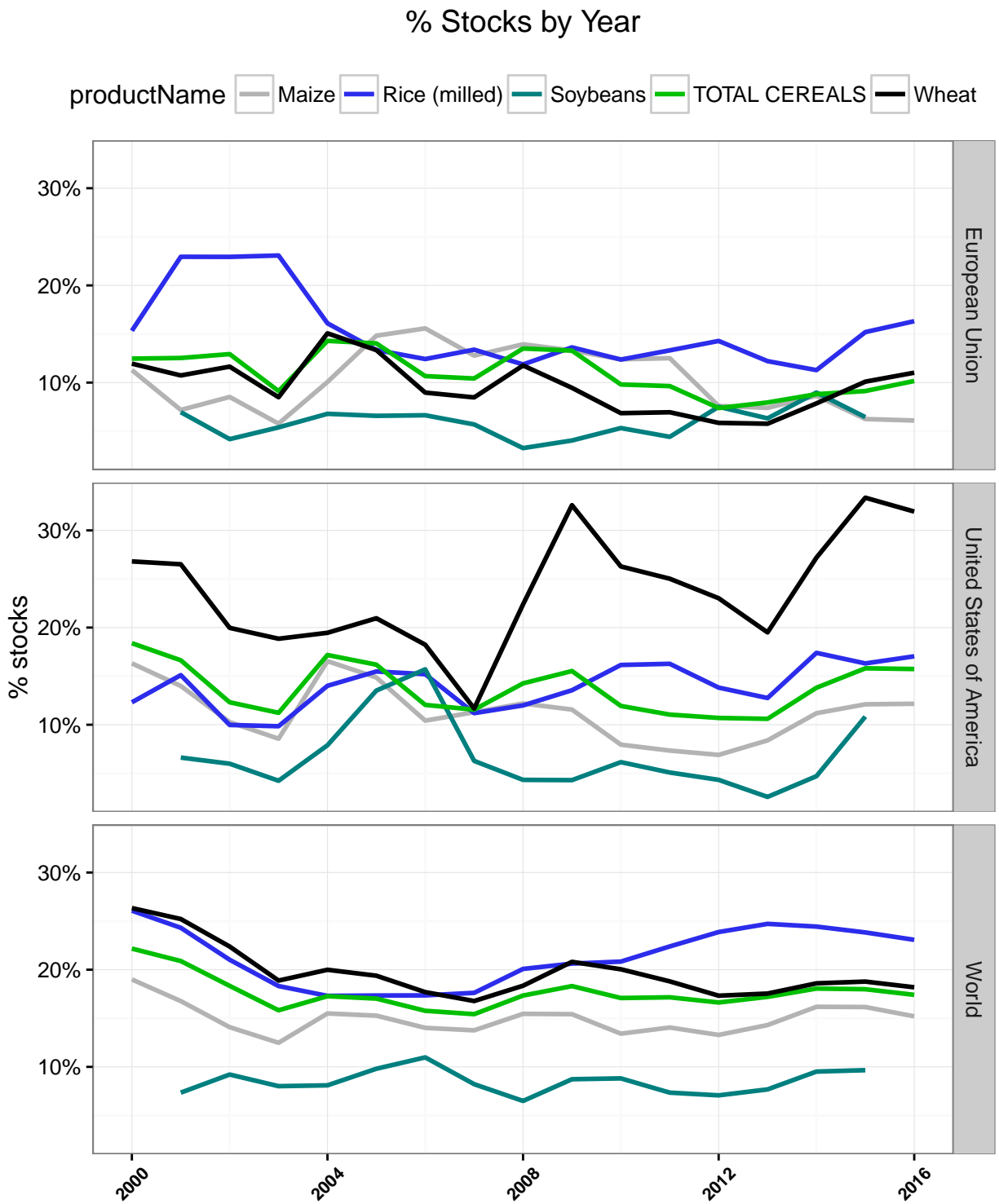
```
##      dataSource countryRegionName productName      elementName      units
## 1:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 2:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 3:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 4:      CBS      Argentina      Maize Closing Stocks Million tonnes
##      year value
## 1: 2016/17    3.5
## 2: 2015/16    4.0
## 3: 2014/15    4.0
## 4: 2013/14    2.5
```

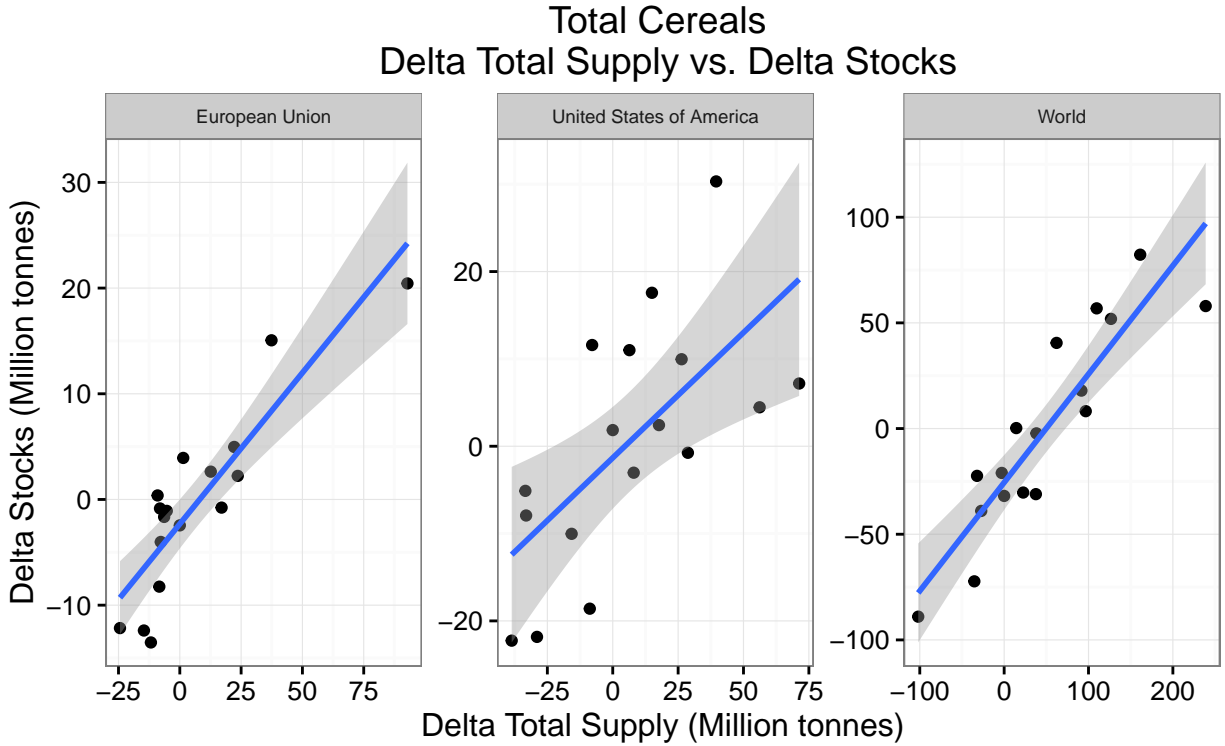
## 2. Data Manipulation

We computed the Delta Total Supply, Delta Stocks and the % of Stocks

```
##      countryRegionName      productName      units      year closingStocks
## 1:      Argentina      Maize Million tonnes 2000/01      0.92
## 2:      Argentina Rice (milled) Million tonnes 2000/01      0.09
## 3:      Argentina TOTAL CEREALS Million tonnes 2000/01      2.32
## 4:      Argentina      Wheat Million tonnes 2000/01      1.00
##      openingStocks totalSupply deltaTotalSupply deltaStocks percentStocks
## 1:      0.97      17.75      0      -0.05      0.05183099
## 2:      0.18      0.81      0      -0.09      0.11111111
## 3:      1.85      40.14      0      0.47      0.05779771
## 4:      0.50      16.46      0      0.50      0.06075334
##      region      type
## 1: Others countries cereals
## 2: Others countries cereals
## 3: Others countries cereals
## 4: Others countries cereals
```

### 3. Data Visualization





#### 4. Correlation

Region	Maize	Rice (milled)	Soybeans	Cereals	Wheat
European Union	58.0	46.9	48.8	88.1	92.3
United States of America	68.8	71.5	62.6	64.9	47.5
World	76.0	96.3	88.6	89.8	87.7

#### 5. Model

A simple linear regression was fitted excluding the regions **World** and **China** and **China Mainland**. The region was divided in: USA, EU and others countries. The items fitted were **Total Cereals** and **Soybeans**.

- Dependent variable: stocks variation
- Independent variable: total supply variation

The **R Square** is **49.6%** The coefficients are:

	fit.coefficients
(Intercept)	-1.3249028
deltaTotalSupply	0.2825014
regionOthers countries	1.0056324
regionUnited States of America	0.4108115
typepulses	0.3201229