

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>**. **The variables studied are:** Closing Stocks, Opening Stocks** and **Total Supply** for all **23** countries present in **AMIS** database.

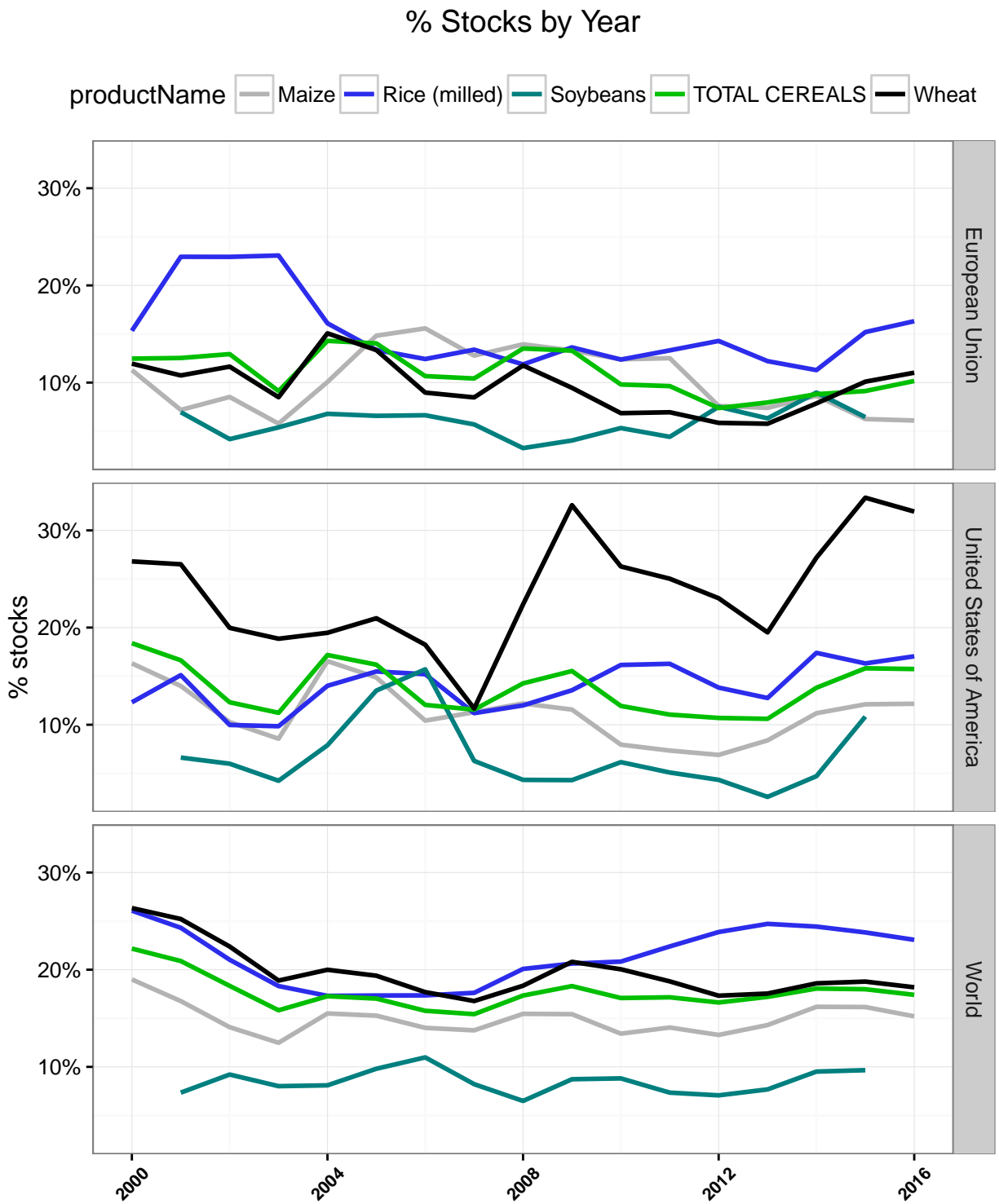
```
##      dataSource countryRegionName productName      elementName      units
## 1:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 2:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 3:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 4:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 5:      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
## 5: 2012/13    0.8
```

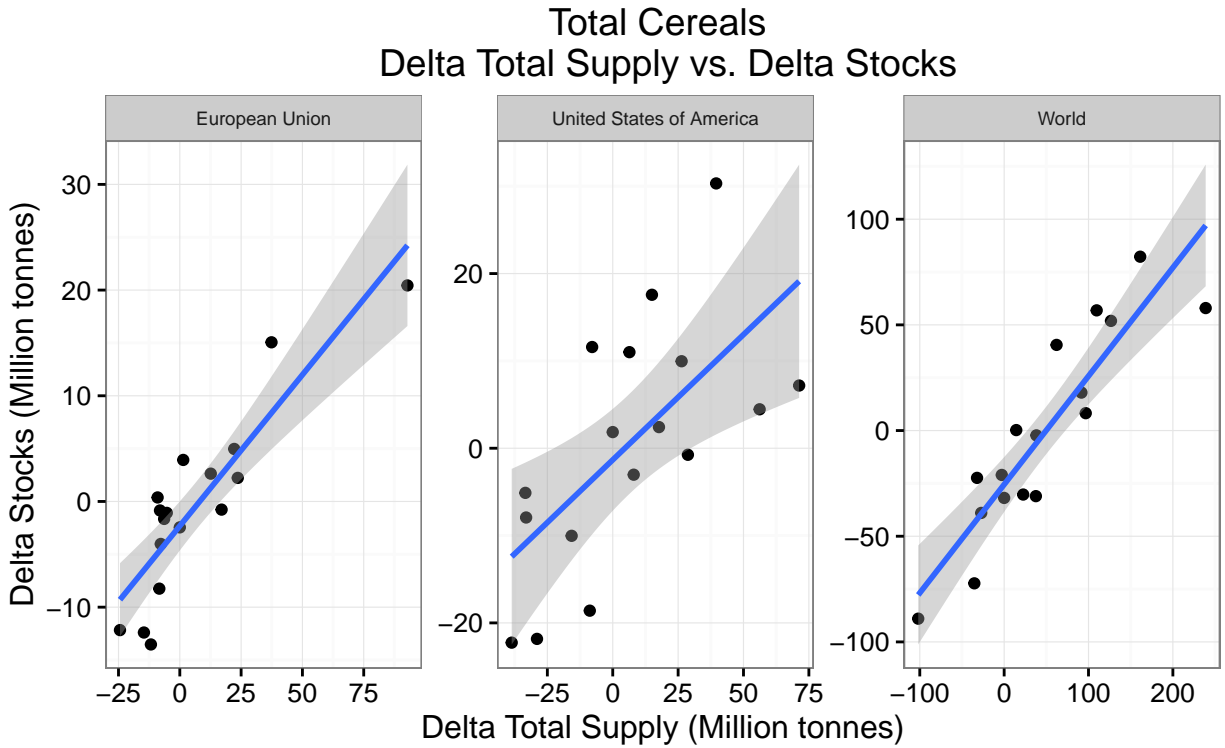
2. Data Manipulation

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
## 5:      Argentina      Maize Million tonnes 2001/02      0.99
##      openingStocks totalSupply deltaTotalSupply deltaStocks percentStocks
## 1:      0.97      17.75      0.00      -0.05      0.05183099
## 2:      0.18      0.81      0.00      -0.09      0.11111111
## 3:      1.85      40.14      0.00      0.47      0.05779771
## 4:      0.50      16.46      0.00      0.50      0.06075334
## 5:      0.92      16.28      -1.47      0.07      0.06081081
```

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 **European Union** and the item **Total Cereals**

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

The coefficients are:

	fit.coefficients
(Intercept)	-0.4612075
deltaTotalSupply	0.4382141

The **R Square** is **53.4%**