

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.

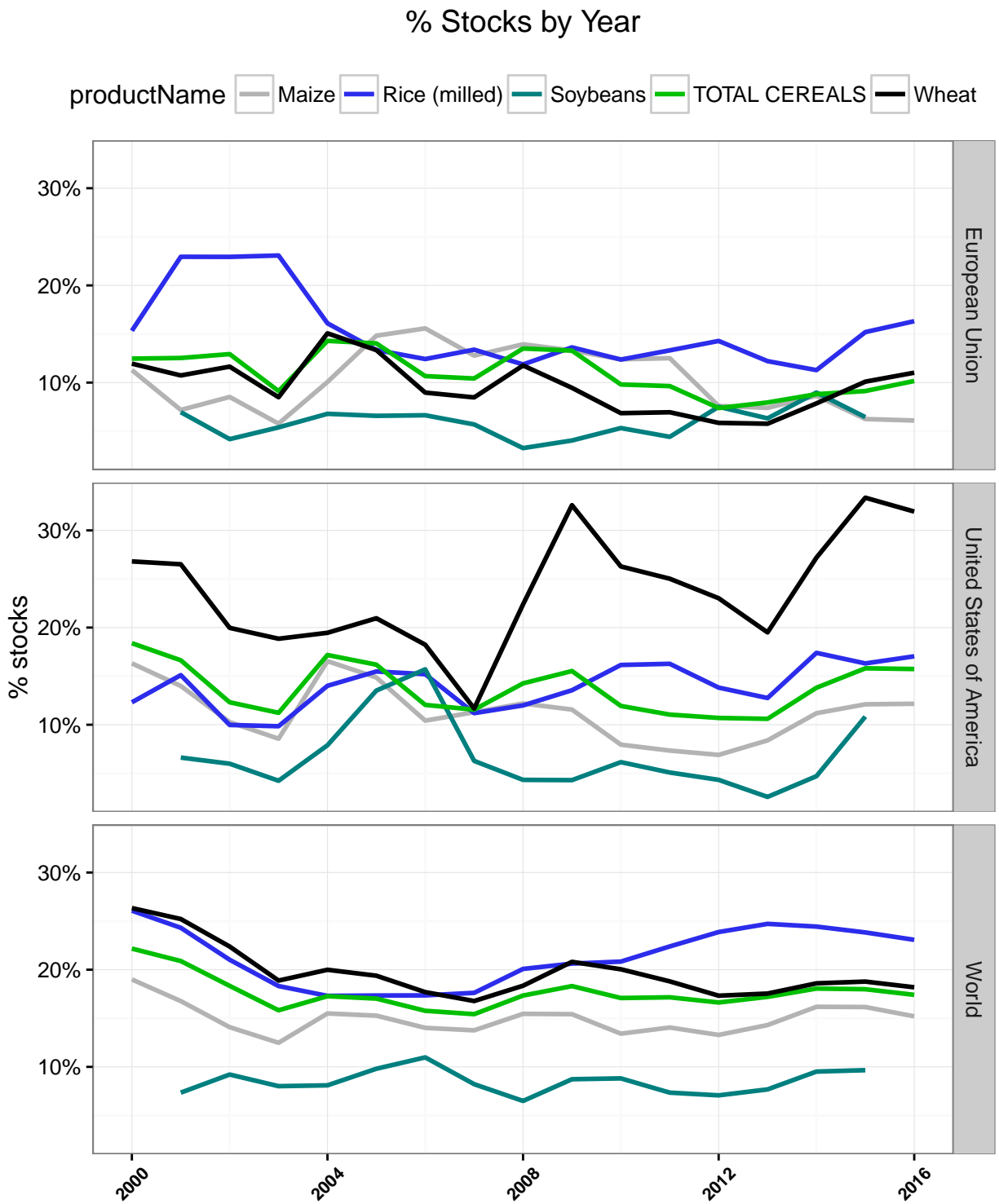
```
##      dataSource countryRegionName productName      elementName      units
## 1:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 2:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 3:      CBS      Argentina      Maize Closing Stocks Million tonnes
## 4: 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

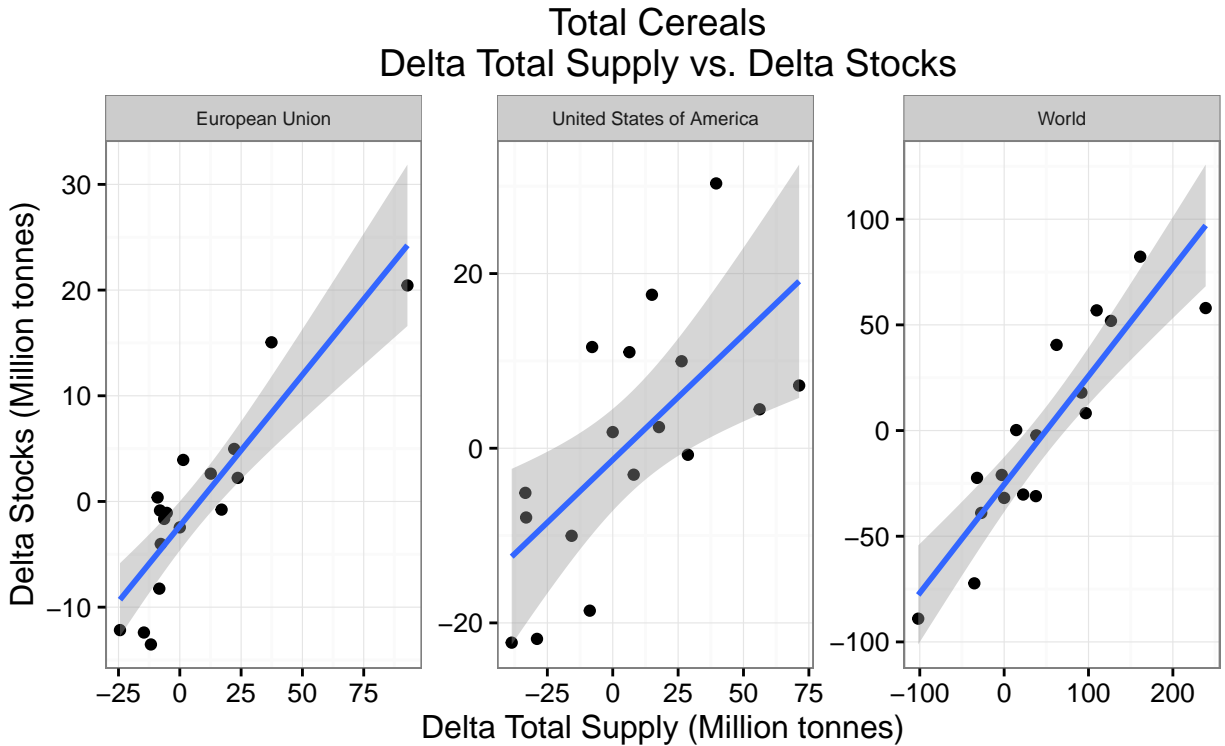
2. Data Manipulation

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**.

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- Dependent variable: closing stocks
- Independent variable: total supply, region and the type of commodity.

The **R Square** is **92.4%** The coefficients are:

	fit.coefficients
(Intercept)	-0.4234024
totalSupply	0.1095623
totalSupply:regionOthers countries	0.0449291
totalSupply:regionUnited States of America	0.0303606
totalSupply:typepulses	-0.0699751