Stock Module - F.O Lichts

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Abstract

This vignette provides a simple analysis of the F.O.Lichts refined sugar data for the stock module.

1. F.O.Lichts Data

The data below was pulled from the publication in May/2016. The variables studied are: **Opening Stocks**, **Production**, **Trade**, **Consumption** and **Closing Stocks** for **industrialised** and **developing** countries.
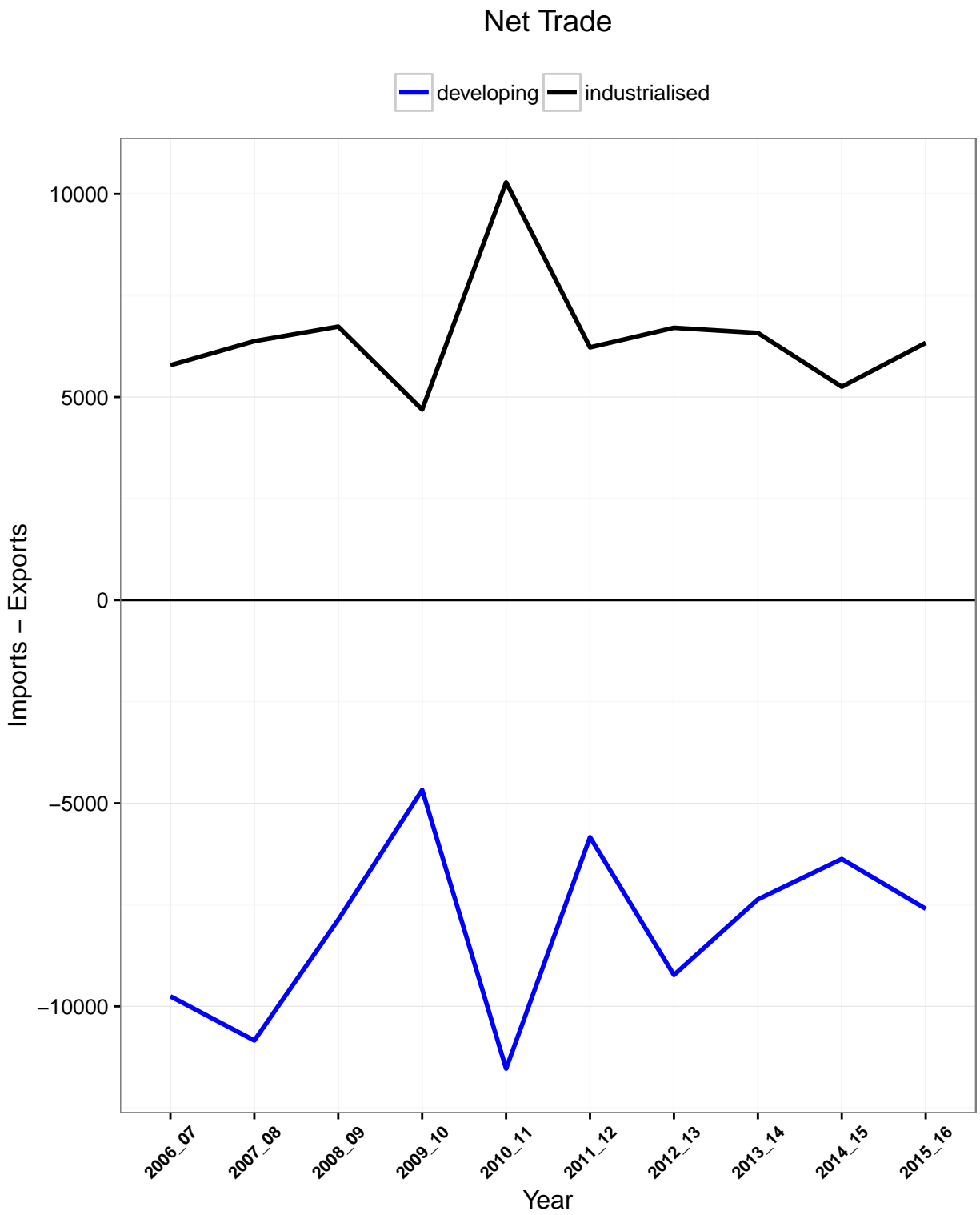
```
##    timePointYears  country_group opening_stocks production imports
## 1:        2006_07 industrialised          19296      40892   18437
## 2:        2007_08 industrialised          19813      39392   19111
## 3:        2008_09 industrialised          18833      37864   18950
##    consumption exports ending_stocks
## 1:       46158   12653         19813
## 2:       46748   12735         18833
## 3:       45762   12216         17669
```

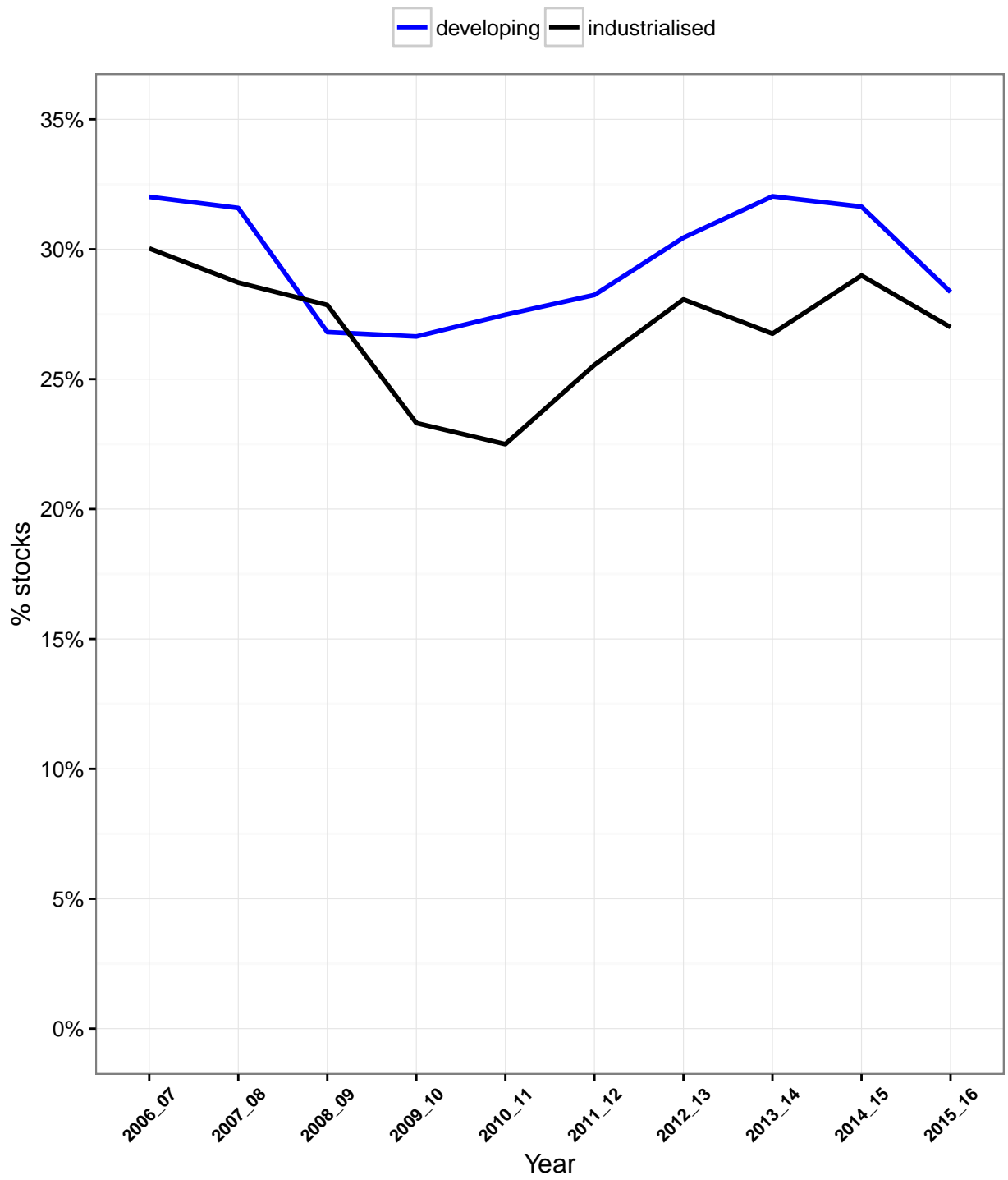## 2. Data Manipulation

We computed the **Supply**, **Utilization**, **Delta Stocks**, **% of Stocks** and **Delta Total Supply**.
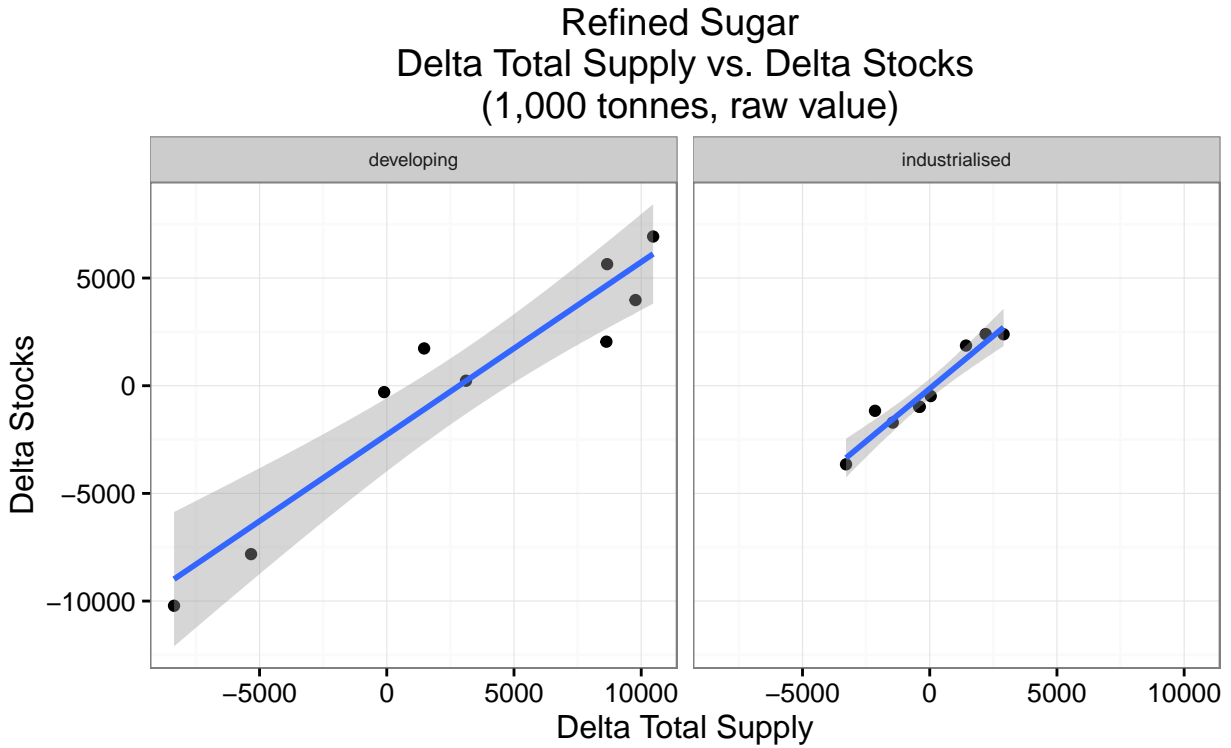
```
##    timePointYears  country_group opening_stocks production imports
## 1:        2006_07 industrialised          19296      40892   18437
## 2:        2007_08 industrialised          19813      39392   19111
## 3:        2008_09 industrialised          18833      37864   18950
##    consumption exports ending_stocks supply utilization delta_stocks
## 1:       46158   12653         19813  65972       65971          517
## 2:       46748   12735         18833  65581       65581         -980
## 3:       45762   12216         17669  63431       63431        -1164
##    stocks_percent delta_total_supply netTrade
## 1:      0.3003244                 NA     5784
## 2:      0.2871716               -391     6376
## 3:      0.2785546              -2150     6734
```

3. Data Visualization

Net Trade

Legend: developing (blue) — industrialised (black)

Y-axis: Imports − Exports

X-axis: Year (2006_07, 2007_08, 2008_09, 2009_10, 2010_11, 2011_12, 2012_13, 2013_14, 2014_15, 2015_16)

% Stocks by Year

Refined Sugar
Delta Total Supply vs. Delta Stocks
(1,000 tonnes, raw value)

4. Correlation

country_group	corr
industrialised	96.4
developing	95.0

5. Model

A linear regression was fitted:

- Dependent variable: ending stocks
- Independent variable: supply and country_group

The coefficients are:

	sugarModel.coefficients.1.2.
supply	0.2702364
supply:country_groupdeveloping	0.0265826

The **R Square** is **99.5%**