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Analysis in this report is done on a commodity data to identify the themes (i.e. factors) in the data. We used Factor Analysis technique to

* Reduce the number of variables and
* To analyze and find the relationship structure among the variables

Per our analyses, we have identified three main factors/themes which are the Households, Utilities and Imported Materials.

As you observe below, through this factor analysis technique we are now able to show how strongly our dataset variables are associated with each of the three factors. These associations with the factors can vary from -100% to 100%. Numbers having larger absolute values indicate a more strong association with that particular factor.

Detailed analysis of each factor is provided on the following pages….

**Factor1: Households**

Below are the commodities with their percentages that come under households. From the description we have identified that the import and export is evenly spread across households ….…..

|  |  |  |
| --- | --- | --- |
| **COMMODITIES** | **DESCRIPTION (HOUSEHOLDS)** | **%** |
| PCOFFOTM\_USD | Coffee, Other Mild Arabicas, International Coffee Organization New York cash price, ex-dock New York, US cents per pound |  |
| PROIL\_USD | Rice, 5 percent broken milled white rice, Thailand nominal price quote, US$ per metric ton |  |
| PMAIZMT\_USD | Maize (corn), U.S. No.2 Yellow, FOB Gulf of Mexico, U.S. price, US$ per metric ton |  |
| PSOYB\_USD | Soybeans, U.S. soybeans, Chicago Soybean futures contract (first contract forward) No. 2 yellow and par, US$ per metric ton |  |
| PSUGAISA\_USD | Sugar, Free Market, Coffee Sugar and Cocoa Exchange (CSCE) contract no.11 nearest future position, US cents per pound |  |
| PSUNO\_USD | Sunflower oil, Sunflower Oil, US export price from Gulf of Mexico, US$ per metric ton |  |
| … |  |  |

**Factor2: Utilities**

Below are the commodities with their percentages that come under Utilities. From the description we have identified that the export dominates imports in Utilities in global market….

|  |  |  |
| --- | --- | --- |
| **COMMODITIES** | **DESCRIPTION (UTILITIES)** | **%** |
| PIORECR\_USD | China import Iron Ore Fines 62% FE spot (CFR Tianjin port), US dollars per metric ton |  |
| PLEAD\_USD | Lead, 99.97% pure, LME spot price, CIF European Ports, US$ per metric ton |  |
| PNGASEU\_USD | Natural Gas, Russian Natural Gas border price in Germany, US$ per thousands of cubic meters of gas |  |
| …. | ,,,, |  |

**Factor3: Raw Materials**

Below are the commodities with their percentages that come under Raw Materials. From the description we have identified that imports holds the majority in Raw Materials in global market..

|  |  |  |
| --- | --- | --- |
| **COMMODITIES** | **DESCRIPTION (RAW MATERIALS)** | **%** |
|  |  |  |
| PWOOLC\_USD | Wool, coarse, 23 micron, Australian Wool Exchange spot quote, US cents per kilogram |  |
| PWOOLF\_USD | Wool, fine, 19 micron, Australian Wool Exchange spot quote, US cents per kilogram |  |
|  |  |  |
| …… | …. |  |

**Technical Appendix**

This appendix introduces the various technical issues that were encountered during the factor analysis of the commodities data which is represented above. The analysis was based on a set of 200 observations that were collected from the global commodity market prices.

Below are the technical decisions relative to the factor analysis:

The factor analysis was performed with assigning variance as one to each variable. The number of factors was initially selected by retaining only those factors with an eigenvalue greater than one. Among the various methods –list here ….- tested, Varimax rotation outperformed to the others due to….

**PROGRAMS**

**……**