**ANALYSIS OF NEFT TRANSCATIONS OF BANKS IN INDIA**

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**ANALYSIS OF NEFT TRANSCATIONS OF BANKS IN INDIA (2009-2016)**

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**ANALYSIS OF NEFT TRANSCATIONS IN BANKS IN INDIA**

**About The Data**

**Source**

The data is a list of NEFT (National Electronic Fund Transfers) transactions that was recorded by RBI in from January 2009 to October 2016. The raw data (month by month from Jan 2009 to October 2016) was collected from the RBI website (https://www.rbi.org.in/Scripts/NEFTView.aspx).

The monthly data was downloaded and then collated into 8 files based on year (2009.xls to 2016.xls).

**Schema**

The data contains the following:-

* Name of the bank
* Outward Number of Transactions (i.e. transactions from the Bank)
* Outward Value of Transactions in Rs. Millions
* Inward Number of Transactions (i.e. transactions to the Bank)
* Inward Value of Transactions in Rs. Millions

Two new columns were introduced in the data set namely, *Month* and *Year.*

Another data file “Classifiication.xls” was prepared with contains the “sector” of the Bank viz. Public (PSB), Private (PVT), Foreign (FOR), Cooperative (CO-OP) or Other Financial Institutions (FI).

Using the data as structured above, a preprocessing was done on the data to convert it into the desired format. Preprocessing is done in the “RBI\_Neft.R” file, which does the following:-

1. Reads the raw data files year by year
2. Creates 3 new columns:-
   * MonthAndYear – Combination of Month And Year separated by space.

Example: Jan 2009, July 2012, etc.

* + TotalTxns – Sum of the inbound number of transactions and outbound number of transactions
  + TotalTxnValue – Sum of the inbound value of transactions and outbound value of transactions.

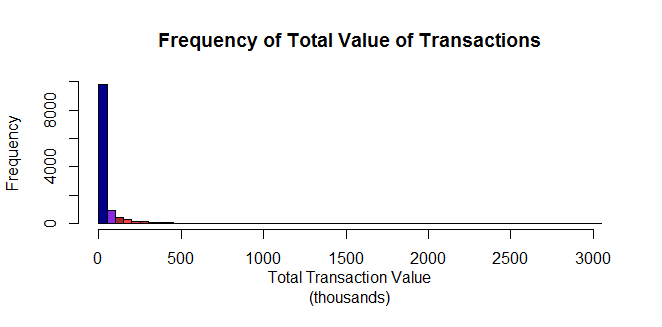
1. Creates a new column “Sector” by taking the join of the above modified dataset and the data in the “Classification.xls” file.
2. This enhanced dataset is represented as “neftDataMerged”

**Challenges**

* Incomplete data – Data for some months missing (particularly November 2016, which was to be used to analyze the impact of demonetization on the NEFT transactions)
* Units of data were inconsistent (some data was in million, others in crores)
* Bank Names were inconsistent. Same banks were represented in different names across months/years.
* RBI publishes data monthly and in a proprietary format - data had to be downloaded for each month and standardized.
* In order to make sense of the data, additional nominal variables (Sector) had to be stitched to the raw monthly dataset provided.

**Data Analysis**

**Frequency Distribution**



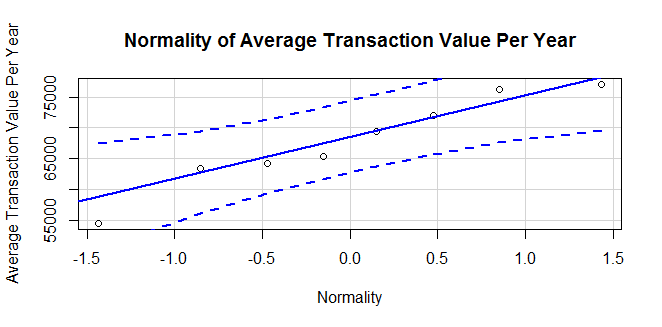
**Graph 1 Frequency of Total Value of Transactions**

Above graph shows the frequency distribution of the total value of transactions per year. It is clear that a large number of transactions are carried under the transaction value of Rs. 500,000.

**Measures of central tendency and dispersion**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Min.** | **1st Quartile** | **Median** | **Mean** | **3rd Quartile** | **Max.** | **SD** |
| **2009** | 0.07 | 104.4 | 773.7 | 5367 | 4218 | 87450 | 252227.4 |
| **2010** | 0.02 | 144.2 | 1472 | 12180 | 8972 | 278500 | 475435.7 |
| **2011** | 0.2 | 300.9 | 3756 | 25130 | 21290 | 515300 | 802637.7 |
| **2012** | 0 | 275.8 | 2818 | 36560 | 32580 | 771700 | 1276600 |
| **2013** | 0 | 300.3 | 1457 | 45770 | 37730 | 1277000 | 2002122 |
| **2014** | 0 | 461.7 | 1767 | 58530 | 44230 | 1735000 | 2886055 |
| **2015** | 0 | 604.1 | 2417 | 77300 | 54410 | 2314000 | 3908475 |
| **2016** | 0 | 866.3 | 3177 | 99600 | 56200 | 3002000 | 4313386 |

Above table shows the summary measures of the data year wise.



**Graph 2 Normality of Average Value of Transactions per year**

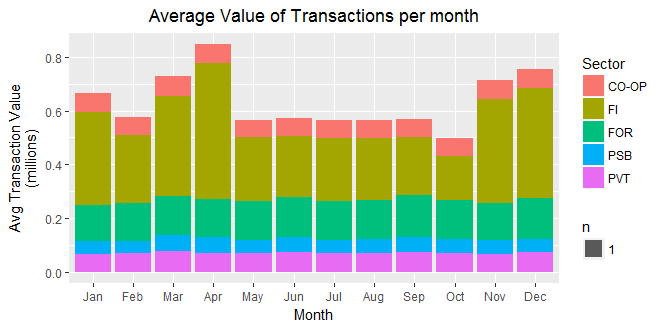
**Summary Measures of Average Value of Transactions per year:-**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Min.** | **1st Quartile** | **Median** | **Mean** | **3rd Quartile** | **Max.** | **SD** | **Skewness** |
| 54470 | 63980 | 67380 | 67760 | 73040 | 77080 | 7493.371 | -0.3615122 |

The above graph shows a normal distribution of the average value of transactions per year.

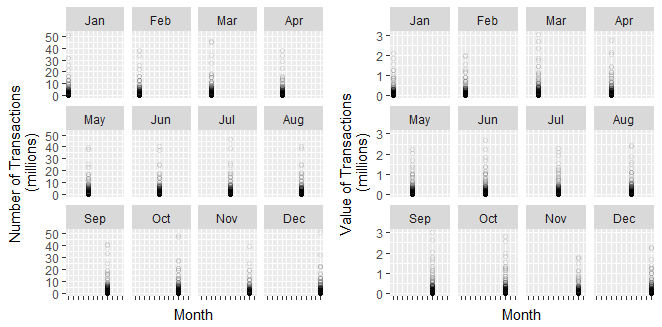
Supported by the table of summary measures, we can see that the skewness conveys that the distribution is normal.

**Time Series**

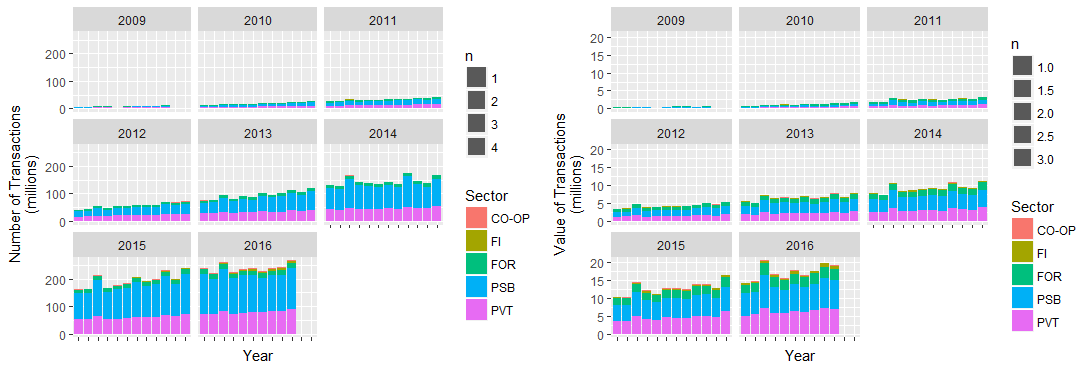


**Graph 3 Bar-Graph of the Average Value of Transactions month-wise and then arranged as per the Bank Sector**

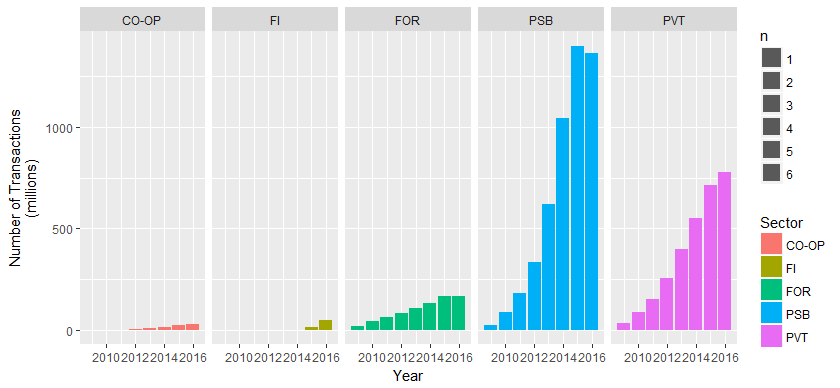
Looking at the above graph, we see the trend in the average value of transactions taking page per month for each of the bank sector.



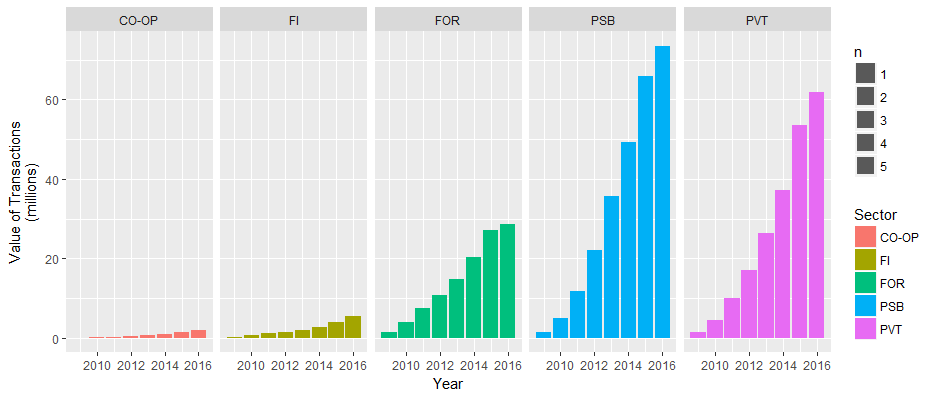
**Graph 4 Plot of Total Number of Transactions/Total Value of Transactions by each month**



**Graph 5 Graph of the Number of Transactions/Value of Transactions month wise (clubbed by year) and then arranged as per the Bank Sector**



**Graph 6 Graph of the Total Number of Transactions year-wise grouped by the Bank Sector**



**Graph 7 Graph of the Total Value of Transactions year-wise grouped by the Bank Sector**

**Interpretation from the Graphs**

* Looking at the graph1 and graph2 plots, it can be seen that the number of transactions are particularly high during the months of March, October and December. This may be attributed to year end closing being in March, festive seasons during October, and calendar year end during December. This also aligns with the Total Transaction Value noted during the period.
* Looking at Graph 3 and 4 it can be said that the average value of transaction per year is quite normal and the skewness is -0.3 approximately. Also the median and mean do not vary too much.
* If we take a look at the Graph 5 we can observe that the total number of transactions in the PSB is larger than any other sector. The second sector is the PVT sector. But looking at the Graph 6 reveals that even though the number of transactions of PUB sector is quite large compared to that of PVT sector, the value of transactions isn’t significantly large. This may signify that the average value of transactions done in PVT sector is larger than the average value of transactions done in the PUB sector.