

BEHAVIOURAL ANALYSIS OF EXCHANGE RATES OF SRI LANKAN RUPEE

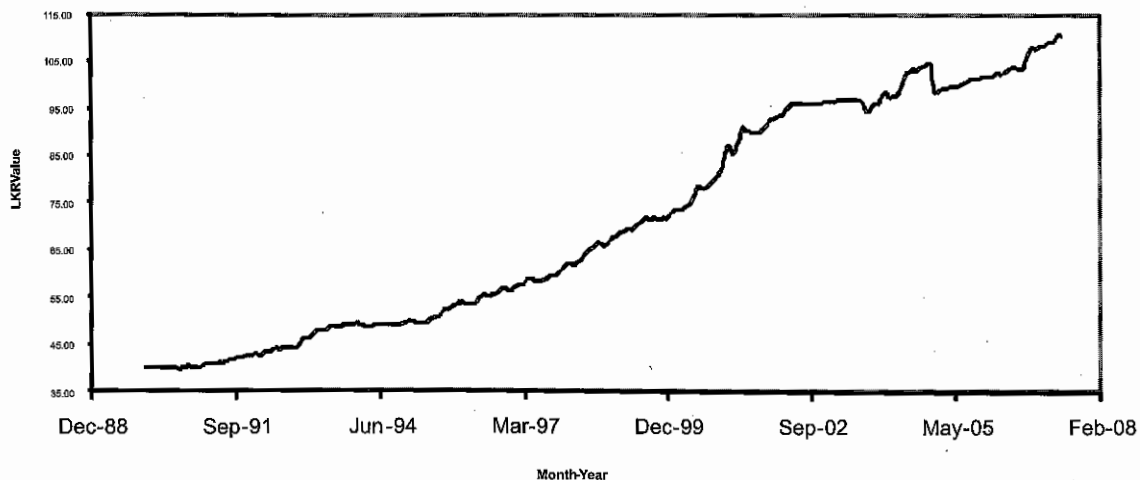
A currency is a unit of exchange. It facilitates the transfer of goods and services. A currency zone is a country or a region in which a specific currency is the dominant medium of exchange. To facilitate trade between currency zones, there are exchange rates. This is the price at which currencies can be exchanged with each other. Having replaced the rupee in 1828 the British Pound remained Ceylon's official currency until 1828. The rupee replaced the British currency in 1870 and it was equal to the Indian rupee. It was at the rate of 1 rupee = 2 shilling and 3 pence. It is still the currency of Sri Lanka with the currency code LKR.

The depreciation of the LKR was experienced in the last two decades in relation to international currencies. This given rise to the questions such as what is the present, past and the future situation of the LKR in relation to other currencies and what are the main effects of the depreciation on the economy? The article will try to answer the questions briefly.

US\$ has served as the world's prominent international currency for the past half century and approximately 51% of the world's bank deposits are Dollars. Therefore LKR fluctuation is compared with US\$. The data used in the interpretation, estimation and fitting parts of the study are the monthly average buying rate of LKR for one US\$ from January 1990 to June 2007. They were found from the web site www.x-rate.com. The site assures the reliability of data by mentioning that the given values were "gathered from the Federal Reserve Bank of New York, representing the 12 noon buying rates and the International Monetary Fund, according to their availability".

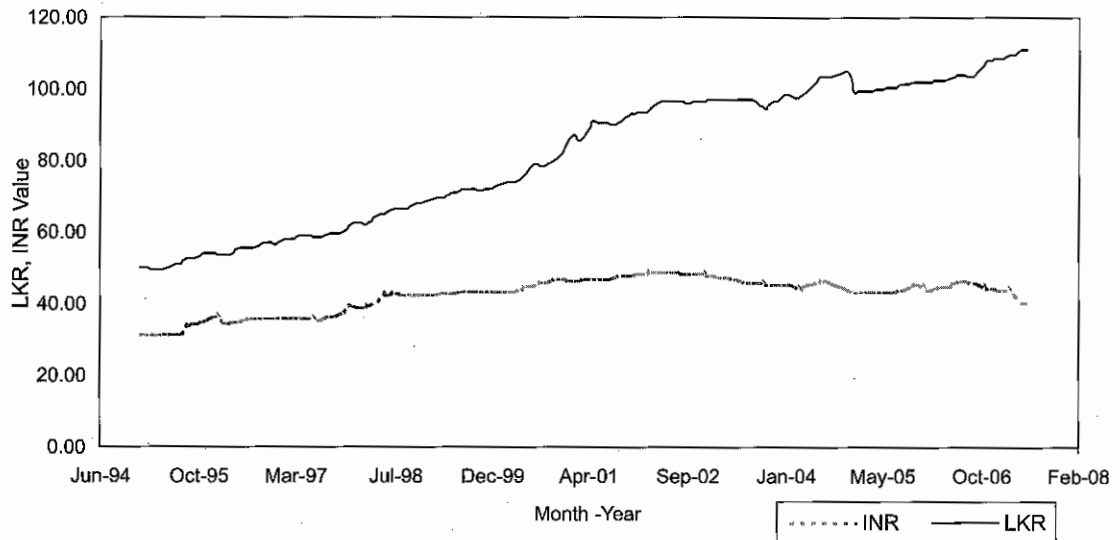
According to figure 1, the exchange rate was 40.0175 LKR in January 1990 but it was raised to 110.79LKR in June 2007. The depreciation was 70.77 LKR for one US\$ or nearly 2.72 times drop of LKR from its original value for the seventeen and half year duration. In other words we require 2.72 LKR now instead of 1 LKR required in January 1990, for goods and services only based on depreciation of LKR. Further more the graph shows a steady increase with lower gradient [rate of depreciation is lower] from year 1990 to 1995 and after then the rate of depreciation has dramatically increased. But there was a sudden increase of exchange rate of LKR from December 2004 to March 2005. That was one of the positive results of the tsunami effect. Sri Lanka received millions of US\$ as relief aid as a major tsunami affected country. The inflow of US\$ increased the LKR value.

Figure 1: LKR Value per One US\$



The figure 2 shows the comparison of the currency values of LKR and Indian rupee (INR) from January 1995 to June 2007. Compared to LKR INR value was steady. 1.59 LKR was equal to 1 INR in January 1995 but the equation was 2.737 LKR = 1 INR in June 2007. The depreciation rate of the LKR was 75% with respect to INR at the end of the period.

Figure 2: LKR, INR Value per One US\$



Some basic statistics of exchange rates of LKR and NIR are given in the table 1 of the data sets from January 1995 to June 2007. The Higher fluctuation of the LKR compared to INR is indicated by the sample variance and Standard error values.

Table 1: Basic Statistics of LKR and INR rates

Statistics	LKR	INR
Number of data points	150	150
Minimum	49.37	31.374
Maximum	110.80	49.017
Sample Mean	81.64	42.554
Sample Variance	19.47	4.925
Standard Error (Sample Mean)	1.59	0.402

The most specific question to be raised is "What is the future of LKR?" A time series model is fitted to answer the question using the data from January 1990 to June 2007. Before proceeding to make a forecast it is essential to assess the fit of the estimate model using residual analysis. The model satisfies the complete residual analysis. The following table gives the forecast monthly average buying rate of LKR for one US\$ for the next six months.

Table 2: Predicted Buying Rate of LKR for One US\$ for Next Six Months

Month-Year	Predicted Value
July-2007	111.123
August-2007	111.618
September- 2007	112.041
October - 2007	112.317
November - 2007	112.515
December - 2007	112.775

According to the table it is clear that the depreciation the LKR is going to continue in the near future. It will badly affect the economic situation of the country. The fall of exchange rate makes imported goods and services more expensive in the country. Producers may pass the higher costs of imported components and raw materials on to costumers. This will cause an extra "Cost-push" inflation.

Finally it is important to find and activate long term and short-term methods to control and stop the depreciation of LKR immediately. Further there is a need to improve the LKR value in relation international currencies.

List of References:

1. Peter J. Brockwell, Richard A. Davis, 2002, Introduction to Time Series and Forecasting, Springer-Verlag New York, Inc.
2. Sir Maurice Kendall, J. Keith ord, 1990, Time Series, Edward Arnold publication
3. www.x-rates.com

Software Packages used:

Microsoft Excel, ITSM, MINITAB

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