2. Performance of Sri Lankan Economy under the Fixed and the Floating Exchange Rate Regimes

1. P.H.G.N. Sulochani,' Faculty of Commerce and Management Studies, University of Kelaniya, Kelaniya

2. Prof. Y.M.Wickramasinghe, Professor, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura

ABSTRACT

This study was conducted to examine the behavior of Gross Domestic Product (GDP) growth, Colombo Consumer Price Index (CCPI) and the Balance of Trade (BOT) under fixed and floating exchange rate regimes. Period covered by the analysis include the period from 1960 to 1977 and from 1993 to 2010 to represent fixed and floating exchange rate regimes respectively. GDP Growth rates were calculated taking the difference in values between the current and the previous year of a variable and dividing it by the current value and multiplying by 100. The trends in growth were calculated taking time trends of the variables. The average growth rates of the variables were calculated using the Compounding Average growth Rate Model (CAGRM). It was difficult to compare the behavior of Balance of Trade (BOT) under two exchange rate regimes due to paucity of data. Results revealed that the annual growth of GDP was higher under floating exchange rate regime. The Colombo Consumer Price Index was the measure used to study the behavior of the inflation and results revealed that the inflation rate under the fixed exchange rate regime was low under floating exchange rate regime. Due to the paucity of information, behavior of the BOT was studied under the floating exchange regime and, the BOT was higher under the floating exchange rate regime. Nevertheless, under floating exchange rate regime the average economic growth rate has been increased with an improvement of the overall economic performance of the economy. The overall growth of GDP has followed declining and upward trends under fixed and floating exchange rate regimes respectively. Inflation rate was negatively

related with fixed exchange rate regime while that was higher under floating exchange rate regime. BOT was higher under floating exchange rate regime. So, as a middle income economy, Sri Lanka should maintain a higher economic growth rate.

Key words. Balance of trade, Colombo Consumer Price Index, Fixed exchange rate, Floating exchange rate, Inflation,

Introduction

The number of units of *currency* of one country to be exchanged for a unit of currency of another country is known as the exchange rate and it is important in trading between two countries. Fixed and floating are the major exchange rate regimes adopted by countries. The preference of the exchange rate regime and its impact on the performance of the economy are controversial issues. However, there is evidence to state that the exchange rate regime adopted by a country could influence on the medium term growth of the economy directly and indirectly (Bailliu et. Et.al. 2002). Thus, it is clear that the exchange rate regime is one factor that affects the overall macroeconomic policy of a country. As the availability of empirical evidence on impact of the exchange rate regimes on the performance of the Sri Lankan economy is limited, results of this study will increase the availability of empirical information, which is highly useful in formulating economic policies. The GDP, GDP growth rate, inflation, unemployment, exchange rate, balance of payment etc. are key macroeconomic variables and the performance of an economic system measures in terms of any kind of favorable improvement in the above variables. Though, inequality, living conditions and economic freedom and so on are other criteria used in measuring the performance of an economic system, the scope of this study was confined to study the changes of GDP growth, inflation and balance of trade.

Literature Review

The assessment of cost and benefits of an exchange rate regime is a debatable issue (Levy- Yeyati and Sturzinegger, 2000 and 2001). However, there is a negative correlation between inflation and fixed exchange rate regime and this supports partly the grouping of exchange rate regimes as hard pegs, intermediate regimes and floating regimes (Fisher, 2001). According to Gosh et. al. (1996 and 1997), both the inflation rate and its vulnerability are low while the investment rate is high under pegged regimes. The floating regimes are detrimental to economic growth and the strength of the monetary policy is more important than the exchange rate regime (Bailliu et. al. 2002). However, there is a threshold level of inflation and beyond which the rate of economic growth will be low. Sri Lanka has experienced a higher inflation rate under the flexible exchange rate regime (Harischandra, 2007).

Shocks caused by the terms of trade get multiplied under sticker exchange rate regimes (Edward and Levy- Yeyate, 2004). It is believed that the flexible exchange rates promote economic growth when the other factors are under control. Bleaney and Frnsicisco (2007) explained that the differences in exchange rate regimes are not always important for developing countries. Generally, hard pegs are associated with low inflation and low growth rates while the floating exchange rate regimes are coupled with higher growth rates and also free from robustness (Levy – Yetati and Sturzenegger, 2003). The classification of exchange rate regimes presented by Reinhart and Reggot (2004) produced favorable results under floating regimes. Broda (2002) showed that the real GDP responses smoothly under flexible exchange rate regimes, real exchange rate depreciates under pegged regimes in response to negative shocks and nominal exchange rate depreciates rapidly under floating regimes. Nevertheless, in developing countries, exchange rate influences on economic growth (Levy- Yeyati and Sturzenegger, 2002). The considerations affecting the choice of the exchange rate regime may change over time (Caramazza and Aziz, 1998) and pegged regimes may be a success in the short run in the presence of high

inflation while more flexible regimes are favorable in the long run. Regardless the exchange rate regime, the long term success of an economy depends on the soundness of economic policies and the strength of the banking sector. Therefore the ranking depends on the nature and the structure of the shocks, preference of the policy makers and the structural characteristics of the economy.

De-facto regimes were classified more precisely by Frank et. al. (2001). The choice of exchange rate regime is not a matter for economic growth in developed countries while it is a matter for developing countries (Huang and Maihothtra, 2004).The exchange rate regime does not influence the variability in economic growth in developed and developing countries. Hence the impact of the exchange rate regime depends on the level of development of the country. So, the developing countries in the Asia should pay more attention to their development level, capital market development, capital accounts and other important factors in choosing an exchange rate regime.

Fixed regimes in poor- developing countries with little access to international capital, are associated with lower inflation and high durability in exchange rate regimes and prevails no robust relationship between the exchange rate regime and economic performance in countries with emerging markets and advanced economies. However, under pegged regimes, less durability of exchange rate regimes and frequent crises were observed in emerging markets. As a result, the proportion of pegged regimes across the world will reduce in future. At the same time, Rogoff et. al. (2003) explained that the characterization of exchange rate regimes is difficult because a country's unique history of regimes may influence economic outcome rather than on-going regime and thus, flexible regime is more valuable for countries with a matured access to international capital markets. The growth performance is superior in emerging markets under free floats. So, as economies reach maturity, the value of exchange rate flexibility arises. Previous studies have attempted to answer the question of

how fixed and floating exchange rates are related to economic performance of a country and those researches have produced mixed results. They also have suggested that there is a link between exchange rate regime and economic performance especially with economic growth and inflation. Nevertheless, only few attempts have been made to study this in Sri Lankan context. Harischandra (2007) attempted to compare the economic performance analyzing monetary policy and inflation and performance under fixed and floating exchange rate regimes in Sri Lanka and suggested that inflation is more persistent and monetary policy is more accommodative in flexible exchange rate regimes. Therefore, this study attempts to investigate the empirical relationship between the economic growth in Sri Lanka and the exchange rate regimes. The objective of the study are to, identify the impact of fixed and floating exchange rate regimes on gross domestic product, balance of trade, and inflation.

Methodology

To discover the relationship between exchange rate regime and economic performance, this study used data for the periods from 1960 to 1977 (under fixed exchange rate regime) and from 1993 to 2010 (Floating exchange rate regime). Fixed exchange rate regime comprises of pegged exchange rate arrangements and dual exchange rate regimes, while flexible exchange rate regime comprises of managed floating and independent floating. Even though there is an array of variables that could be used to assess the economic performance, this study considered only three variables namely; the Gross Domestic Product (GDP), the Balance of Trade (BOT) and the Inflation rate. In order to incorporate the effect of inflation rate the Colombo Consumer Price Index (CCPI) was used. This study used the Gross Domestic Product at constant prices to avoid the price impact. The growth rate model was used to identify the behavior of the Gross Domestic Product (GDP) and the Balance of Trade. Therefore, it was focused on the annual growth rate of identified variables under the two regimes. In order to identify the annual growth rate of GDP and BOT, the following formula was used.

$$Ggrowth\ in\ GDP = \frac{GDP_t - GDP_{t-1}}{GDP_t} * 100 \quad \ldots\ldots(1)$$

Where, GDP_t is GDP value in year t and GDP_{t-1} is GDP value of the previous year.

$$\mathbf{B}OT\ growth\ rate == \frac{BOT_t - BOT_{t-1}}{BOT_t} * 100 \quad \ldots\ldots(2)$$

Where, BOT_t is BOT value for the year t and BOT_{t-1} is BOT value of the previous year.

Year on year percentage change was used in this to identify the movements of CCPI over the period of fixed exchange rate regime (1960-1977) and floating exchange rate regime (1993-2010).

CCPI % change =

$$\frac{CCPI_t - CCPI_{t-1}}{CCPI_t} * 100 \quad \ldots\ldots(3)$$

Where, $CCPI_t$ is CCPI value in year t and $CCPI_{t-1}$ is CCPI value of the previous year.

Because, the long term trends and oscillations of variables are essential, time trends of the Gross Domestic Product, the BOT and the CCPI were calculated under two exchange rate regimes. To facilitate the comparison of economic performance over fixed and floating rates the average annual growth rate for the GDP and the BOT were calculated using the Compound Average Growth Rate Model (CAGRM). The following equation was used to identify the average growth rate for each identified variables. Growth rates of GDP for two periods were calculated as:

$$GDP\ CAGR_{(t_0,t_n)} = \left(\frac{V_{tn}}{V_{t0}}\right)^{1/(t_n - t_0)} - 1 \quad \ldots\ldots(4)$$

Where, $V(t_0)$ is GDP value in 1960 and 1993, V_{tn} is GDP value in 1977and2010 and t_n-t_o is the number of years.

Growth rate of BOT was calculated in the same manner. There were some limitations regarding the gathering of data especially for the BOT for the period of 1960 to 1977, which is reflecting the fixed exchange rate regime. Data were available only up to 2007 for the Colombo consumer price index (CCPI).

Result and Discussion

Annual GDP growth under fixed exchange rate regime

The annual GDP growth rate was 0. 17 % in 1971 and 8.26 % in 1968 the growth rate was higher than 5 % only in four years. The annual GDP growth rates under the fixed exchange rate regime was (Table 1) due to different shocks faced by the country. The low annual growth rate observed in GDP during 1970s could be due to economic policies employed during that period and the damage caused by the riot of the Sinhalese revolutionists in 1971 as well as the prolonged drought. In response to those shocks, government controlled imports, restricted food consumption and promoted the domestic production of essential food items as well as a certain number of industrial goods.

Table .1: Annual GDP growth rates under fixed exchange rate regime

Year	Annual GDP growth (%)	Year	Annual GDP growth (%)	Year	Annual GDP growth (%)
1960	6.82	1966	3.82	1972	3.19
1961	2.10	1967	5.11	1973	3.72
1962	4.56	1968	8.26	1974	3.16
1963	2.83	1969	4.83	1975	2.76
1964	6.42	1970	4.90	1976	2.96
1965	2.27	1971	0.17	1977	4.19

Source: Central Bank of Sri Lanka (1960 – 1977)

Though the annual GDP growth rate during this period, especially from 1960 to 1969, was highly volatile, it was relatively high from 1960 to 1968. A continuous increase was reported from 1965 to 1968 and the highest growth rate was reported in 1968. During the period from 1968 to 1971 a continuous decline in the performance of the economy was observed and the economy has regained gradually and slowly after 1971 (Figure 1).

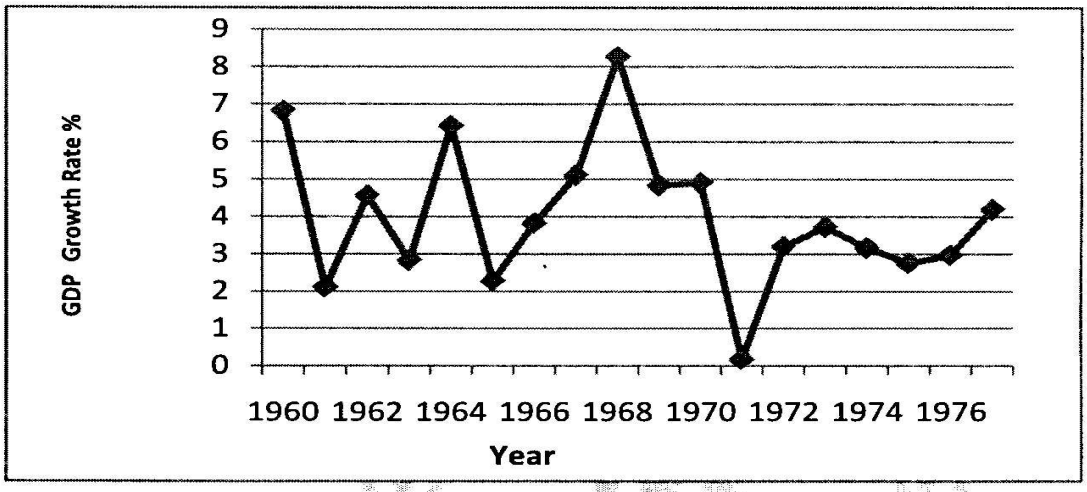


Figure 1: Movement of GDP growth rate under fixed exchange rate regime
Source: Central Bank of Sri Lanka (1960 -1977)

The slope coefficient of the trend line estimated for the annual GDP growth for the period from 1960 to1977 was – 0.05 and that is not healthy. So, it is possible to conclude that the annual growth rate in GDP has declined under the fixed exchange rate regime.

Table 2: Annual GDP growth rate under floating exchange rate regime

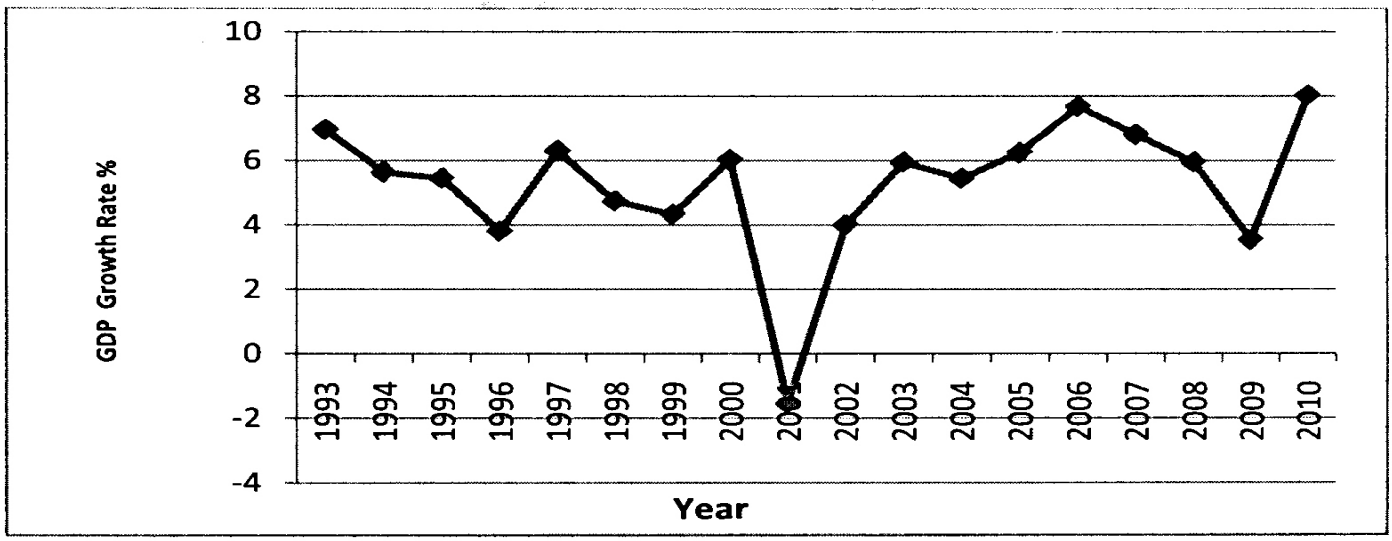
Year	Annual GDP growth rate (%)	Year	Annual GDP Growth rate (%)	Year	Annual GDP growth rate (%)
1993	6.95	1999	4.33	2005	6.24
1994	5.63	2000	6.02	2006	7.67
1995	5.45	2001	-1.54	2007	6.80

1996	3.80	2002	4.00	2008	5.95
1997	6.30	2003	5.94	2009	3.54
1998	4.74	2004	5.45	2010	8.01

Source: Central Bank of Sri Lanka (1993 – 2010)

Annual growth rate in GDP under floating exchange rate regime (1993 – 2010) also exhibited a quite irregular pattern. It showed that the economy had performed well during this period, except in 2001, when the GDP growth rate was negative (Table 2). With the introduction of the liberalized economic policy in 1978, the government investment in providing subsidies was slashed down gradually while promoting private sector investments and inviting foreign direct investments. The government introduced deregulations, privatization and opened up the economy to international competition. More emphasis was made on export oriented growth and it improved economic performance by improving the annual growth rate in GDP from 6.95% in 1993 to 8.01 % in 2010. Data presented in Table 2 and Figure 2 show that though the economy has been moving forward while facing some turbulent. In general, it has performed well.

Figure 2: Movement of GDP growth rate under floating rate regime



Source: Central Bank of Sri Lanka (1993 -2010).

While the economy was incurring huge war expenditure it was hit by a series of global and political challenges in 2001. At the same time, both crop and fish production was dropped as a result of the restrictions imposed by the government on fishing in the Indian Ocean as well as due to the risk in visiting farm lands. Nevertheless, economic growth rate was relatively steady under the floating exchange rate regime. In 2002, the economy gained a gradual recovery as a result of early signs of peace and due to the growth in the service sector. The economy commenced to grow at a high rate of 8% in the year with the ending of civil war in the year 2009. The annual GDP growth rate from 1993 to 2010 showed an increasing trend after adopting the floating exchange rate regime. The average growth rare for the period from 1960 to 1977, under fixed exchange rate regime, was 4.5% per annum and that under the floating exchange rate regime was 5.62% per annum. Based on the above facts, it is possible to conclude that the performance of the GDP was high under the floating exchange rate regime.

Colombo Consumer Price Index

The CCPI data were available only up to the year 2007 and this study also used 1952 as the base year as that was the base year used by the developers of the CCPI. This study analyzed the year on year (annual growth) percentage changes in Colombo Consumer Price Index under fixed and floating exchange rate regimes to assess the economic performance under two exchange rate regimes. According to Table 3 and Figure 3, there was a low volatility in year on year percentage changes in CCPI during this period.

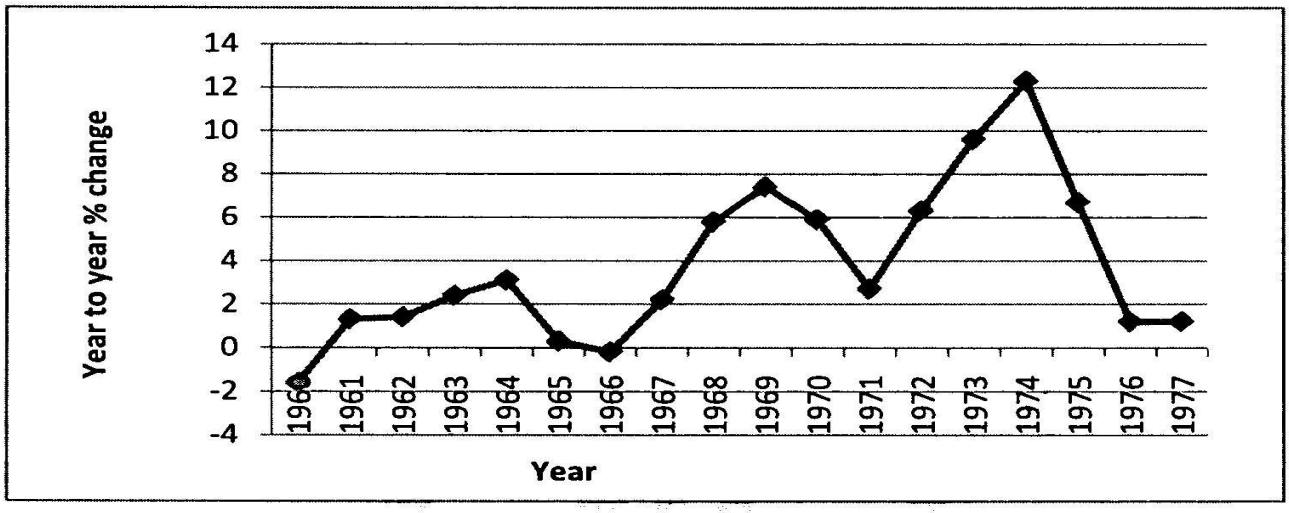
Table 3: Annual growth in CCPI under fixed exchange rate regime

Year	Annual growth in CCPI (%)	Year	Annual growth in CCPI (%)	Year	Annual growth in CCPI (%)
1960	-1.6	1966	-0.2	1972	6.3
1961	1.3	1967	2.2	1973	9.6
1962	1.4	1968	5.8	1974	12.3

1963	2.4	1969	7.4	1975	6.7
1964	3.1	1970	5.9	1976	1.2
1965	0.3	1971	2.7	1977	1.2

Source: Central Bank of Sri Lanka (1960- 1977)

Figure 3: Movement in CCPI under fixed exchange rate regime



Source: Annual Reports of Central Bank of Sri Lanka

The annual (year on year) percentage change in CCPI was -1.6 % in 1960 and that was the lowest value reported during the period considered and that has become negative again in 1966. The largest value was reported in1974. However, the annual growth in CCPI was highly volatile during the period considered. The CCPI has increased slowly until 1968 and it has increased gradually thereafter recording a drop between 1975 and 1977. According to Figure 3, CCPI growth rate was lower than 6% during the period considered except in five years.

Table 4: Year on year percentage change in CCPI under floating exchange rate regime

Year	Annual growth rate in CCPI(%)	Year	Annual growth rate in CCPI(%)	Year	Annual growth rate in CCPI(%)
1993	11.74	1998	9.37	2003	6.32
1994	8.45	1999	4.69	2004	7.57
1995	7.67	2000	6.17	2005	11.64
1996	15.9	2001	14.16	2006	13.69
1997	9.57	2002	9.6	2007	17.47

Source: Central Bank of Sri Lanka (1993 – 2007)

CCPI has decreased gradually from year 1993 to 2000 except in 1996 (Table 4) while achieving a remarkable increase in 2001(from 6.17% to 14.16%). But, the period from 2002 to 2003 was marked with a rapid decline. In response to that the government cut down expenditures.

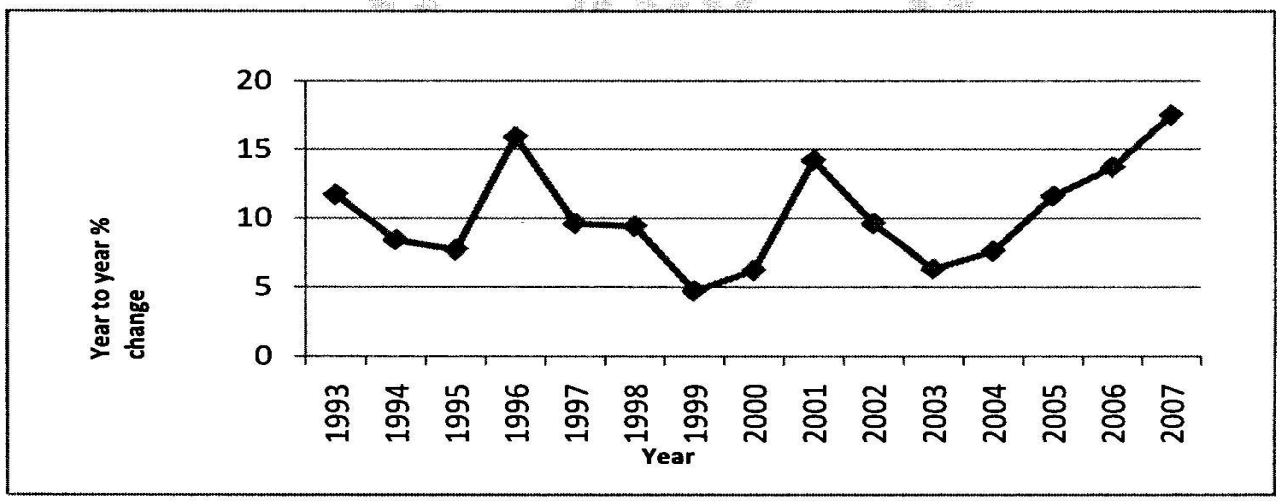


Figure 4: Movement of year on year percentage change in CCPI under floating exchange rate regime

Source: Central Bank of Sri Lanka (1993 – 2007).

From 2004 onwards there was an upward trend in CCPI and key reasons were the granting of new government jobs, a reversal to the subsidy slashing

policy, freeze on petroleum prices and in general, greater state participation in the market took place (Central Bank of Sri Lanka, 2005).

CCPI has increased up to 13.69% in 2006 (Figure 4). The highest contribution was from domestically produced agricultural food commodities. In addition, price of major imported goods also led for this rise up. A similar situation was continued in 2007 due to increased import prices, higher transportation and input cost in response to the upward revision of fuel prices (Central Bank of Sri Lanka 2006 and 2007).

CCPI during the fixed regime was below thousand while it was above thousand under floating exchange rate regime. There was a high volatility and increasing trend in annual growth in CCPI under fixed regime, because, CCPI has increased slowly until 1968 and thereafter it has increased gradually and it has decreased again from 1975 to 1977. So, the volatility of the annual growth in CCPI was quite high during the latter part of this period. According to the above analysis it indicates that, under the floating regime there was high volatility and the annual growth in CCPI was above 6% while it was below the 6% under the fixed regime. Thus this it is possible to conclude that inflation was high under the floating exchange rate regime.

Balance of Trade

Due to paucity of Balance of Trade data for the period from 1960 to 1977, this analysis was confined to the period from 1993 to 2010. During this period a trade deficit was experienced (Figure 5). This deficit was mainly due to high oil prices and the increased demand for imports.

Table 5: Growth rate of BOT under floating exchange rate regime

Year	Annual growth rate of BOT %	Year	Annual growth rate of BOT %	Year	Annual growth rate of BOT %
1993	0.21	1999	0.38	2005	0.11
1994	0.39	2000	0.39	2006	0.38

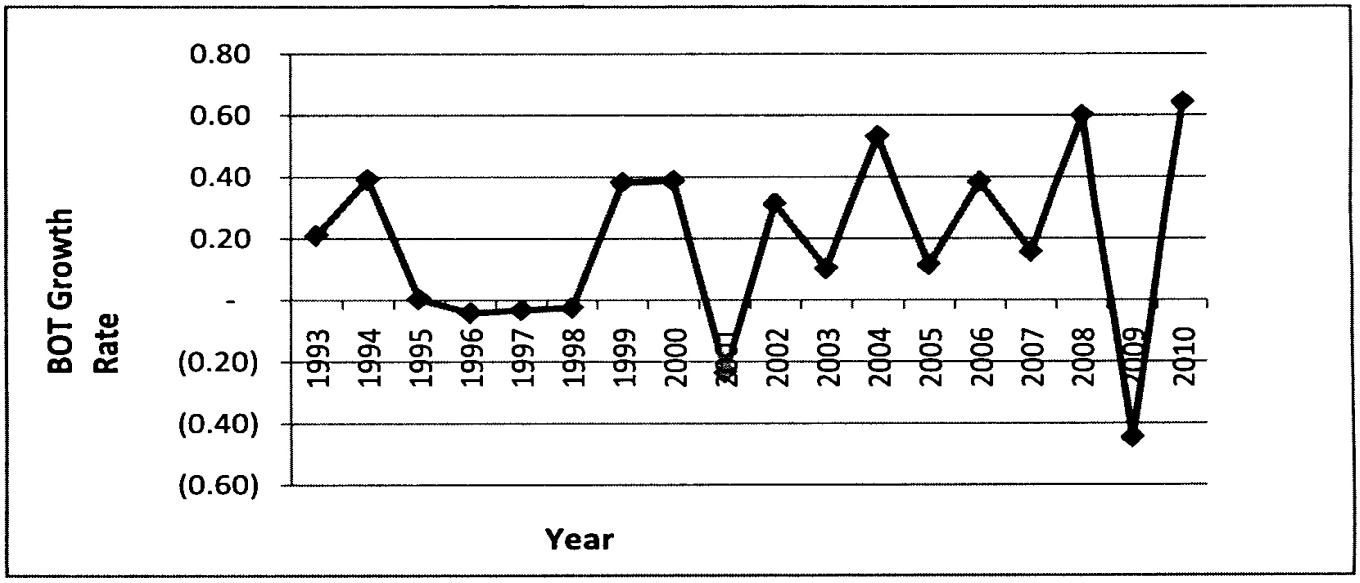
1995	0.00	2001	-0.24	2007	0.16
1996	-0.04	2002	0.31	2008	0.60
1997	-0.03	2003	0.10	2009	-0.45
1998	-0.03	2004	0.53	2010	0.64

Source : Central Bank of Sri Lanka (1994-2011)

Note: BOT data for the period under fixed exchange rate were not available

Textiles and garments, and primary goods including tea were the main exports and import cost of items such as crude oil and defense items were high. A high volatility in growth rate of trade balance was experienced since 2002 recording the highest negative value was recorded in 2009 (Central Bank of Sri Lanka, 2009). Nevertheless, in 2010 trade deficit increased again since annual growth in imports increased at a higher rate than the exports. Thus, this reveals that deficit of trade balance has increased during the floating exchange rate regime. When whole period was considered, the growth rate of BOT was 0.01 per annum and it indicates that the deficit of balance in trade has increased under floating exchange rate regime. It is impossible to compare the growth rate of BOT due to the paucity of data for the period under fixed exchange rate regime.

Figure 5. Annual growth rate in BOT under floating exchange rate regime



Source: Central Bank of Sri Lanka (1993-2010)

Note: BOT data for the period under fixed exchange rate were not available

Conclusion

The average economic growth rate of Sri Lanka was poor under the fixed exchange rate regime and it has increased under the floating exchange rate regime and an overall improvement in economic performance was observed under the floating exchange rate regime. The overall growth of GDP has followed a declining trend under the fixed exchange rate regime and that demonstrated an upward trend under the floating regime.

Inflation rate of the economy was low under the fixed exchange rate regime and that was negatively related with the fixed exchange rate regime while inflation was high under the floating exchange rate regime and these findings are in par with the findings of Levy-Yeyati and Sturzenegger (2001), Gosh et.al (1997).

Due to the paucity of data for the period from 1960 to 1977 it was unable to compare the behavior of BOT under the two exchange rate regimes. Nevertheless, it revealed that the deficit in BOT was high under the floating regime. As a middle income earning country, it is important for Sri Lanka to have a higher economic growth rate supported by sound economic policies.

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