Proceedings of the 2ndInternational Conference on Management and Economics 2013



CAN HIGH AND VOLATILE INFLATION WIDEN BANK INTEREST SPREADS AND CURTAIL FINANCIAL DEVELOPMENT IN SRI LANKA?

Manjula Kumara Wanniarachchige

Faculty of Management and Finance, University of Ruhuna, Matara, Sri Lanka wmanjulak@gmail.com

Abstract

Despite the notable progress of Sri Lankan economy in recent decades, the diminishing share of banking system assets relative to country's Gross Domestic Product (GDP) is puzzling. Numerous factors can be held responsible for this. However, the effects of inflation on this scenario have not been sufficiently researched. Hence using exploratory data analysis techniques and a quarterly dataset concerning Sri Lanka during 1990-2010, this paper explored the ill-effects associated with high and volatile inflation on the bank interest spreads while shedding a light on the possible adverse effects this can create on the banking system development. Further, the paper argues that the researches aimed at investigating the ill-effects of inflation must take both the magnitude and the volatility of inflation simultaneously in order to arrive at appropriate judgments. Based on the findings, this paper argues that the uncertainty resulted from the turbulent inflation has widened bank interest spreads to enable the banks to cope up with potential pricing errors in the financial intermediation process and thereby has contributed to curtail the banking system development in Sri Lanka. These findings have credible implications on the banking system development in developing countries because most of economies in such countries are characterized with high and volatile inflation. Therefore, taming inflation remains as a vital goal for policy makers in those countries in order to foster a healthy banking system development.

Keywords: Banking System Development; Credit; Financial Intermediation; Inflation, Interest Spread

1. Introduction

Growing body of literature provides evidences to suggest that the level of financial development is a good predictor of future economic growth, capital accumulation and technological change (Botric & Slijepcevic, 2008; King & Levine, 1993; Levine, 1997; Tian & Zhou, 2008; Tuuli, 2002). Moreover, when banks dominate the financial system, the banks have a crucial role to play in fulfilling the financial needs of the corporate sector in that economy.

A country's socio-economic stability is crucial for the development of a banking system (Barro, 1995; Younis, Lin, Sharahili, & Selvarathinam, 2008) because socio-economic instability increases the uncertainty in the society and thereby increases the transaction costs. Increased uncertainty and transaction costs aggravate overall risk perceptions of both domestic and foreign investors leading to a decline in the overall

level of investment. Further, this may result in a wide range of contracting issues particularly in credit markets.

In general, Sri Lanka had a turbulent socio-economic environment since its early history. Further, due mainly to civil war and soaring inflation, the socio-economic climate of Sri Lanka was substantially unstable in recent couple of decades as well. For example, the three-decade long civil war between the Sri Lankan government and Liberation Tigers of Tamil Elam (LTTE)¹ existed since early 1980s until 2009 have caused substantial volatilities in the socio-political environment and have curtailed the financial intermediation process in Sri Lanka (Wanniarachchige, 2011). Apart from the ill-effects associated with the civil war, the inflation can be considered as the most binding constraint on the banking system development as well as the progress of other economic activities in Sri Lanka. Though numerous studies have made attempts to explore the effects of inflation on various sectors in an economy, the effects of inflation on bank interest spreads and financial intermediation have been subjected to fewer research particularly in developing countries. More precisely, the effects of high and volatile inflation on the banking system development have not been rigorously studied in Sri Lanka.

Therefore, the exact effects of inflation on financial intermediation in developing countries like Sri Lanka remain fairly unknown. As a result, even the contemporary models, like the financial restraint model introduced by Hellmann, Murdock, and Stiglitz(1997), aimed at developing financial systems in developing countries have failed to gain satisfactory results. More precisely, high and volatile inflation violates a crucial precondition and hence prevents the implementation of appropriate financial restraints. These factors can be the main reasons behind the financial backwardness of Sri Lanka as further argued in section two. This calls for a separate investigation on the effects of inflation. Hence this paper aims to investigate how the illeffects associated with high and volatile inflation affect bank interest spreads and the efficiency of financial intermediation by drawing upon the experiences in Sri Lanka during 1990-2010.

This paper is organized into six sections including this introduction. Section two discusses the background of the research. Section three reviews related literature. Section four discusses the methodology used in the study while section five discusses the results and findings. Finally section six concludes the paper with a brief account on the implications of the findings.

2. Research Background

Contemporary approaches, emerged under the New Institutional Economics paradigm, like Credit Rationing Model introduced by Stiglitz and Weiss (1981) and the Financial Restraint Model introduced by Hellmann, et al.(1997) emphasize the necessity of creating incentives for banks to facilitate banking system development and efficient financial intermediation. These approaches further emphasize the merits of government involvement in financial markets given the possibility of failures in the laissez-faire market mechanism under the unique conditions prevailing in credit markets. The government involvement in terms of financial restraints as suggested in such models aims mainly to curtail excessive competition in credit markets and thereby creates sufficient rent opportunities for banks. According to the financial restraint model, the rent opportunities are created in terms of interest spreads. The banks by pursuing prudent strategies can capture these rent opportunities and invest them for the betterment of the banking system by, for example, actively involving in monitoring and screening of the borrowers and expanding their branch networks.

As shown in table 1, Sri Lankan banks have continually maintained an interest spread of around 5.6 percent on average during 2000-2010. Such a spread is substantially higher than most of the other countries with fast growing financial systems. According to the arguments in the financial restraint model, this may be an indication of the availability of healthy rent opportunities for the Sri Lankan banks. However, Sri Lankan banking system still remains relatively underdeveloped and its financial depth remains shallow. Besides the banking system, the other components of the financial system like stock market and corporate bond market remain totally thin and are still in their infant stages.² For example, total assets of the banking system relative to GDP is around 69 percent during 2000-2010 on average whereas the market capitalization in the equity market remains as low as 18.8 percent of GDP on average during the same time period (see table 1). Importantly, the relative significance of Sri Lankan banking system relative to GDP is decreasing substantially. For example, the banking system which accounted for nearly 75 percent of the GDP has declined to 63.2 percent in 2010. This is quite contrasting to the situation in India where the importance of the banking system relative to GDP has increased from 61.6 percent in 2001 to 102.9 percent in 2010 under similar levels of interest spreads.

Table 1: Interest Spread and Banking System Development in Sri Lanka and India

Year	Sri Lanka			India	
	Interest Spread (%)	Market Capitalization as % of GDP	Banking system assets as % of GDP	Interest Spread (%)	Banking system assets as % of GDP
2000	11.6	7.1	75.1	-	-
2001	3.5	8.8	72.4	4.2	61.6
2002	4.7	10.3	69.5	4.1	67.4
2003	3.7	14.4	69.4	4.6	71.5
2004	4.9	18.3	70.0	6.5	71.7
2005	5.9	23.8	72.6	6.4	74.8
2006	7.1	28.4	72.9	7-7	77.7
2007	6.7	22.9	70.0	3.7	83.8
2008	7.5	11.1	61.2	3.6	91.6
2009	3.1	22.6	62.4	2.6	98.4
2010	3.3	39.5	63.2	-	102.9
Average	5.6	18.8	69.0	4.8	80.1

Source: Author based on the statistics published by Colombo Stock Exchange, Central Bank of Sri Lanka, and Statistical returns of Reserve Bank of India

These facts raise concerns about how two countries with similar levels of interest spreads, socio-economic backgrounds and financial system structures have experienced substantially different levels of banking system development. Though the financial restraint model has emerged as an attractive model for fostering banking system development in developing countries, the model cannot address the above issue due to lack of preconditions necessary for implementing financial restraints in Sri Lanka. More precisely, Sri Lankan economy has experienced substantially turbulent and high inflation rates which violate the preconditions of the financial restraint model. This provides an important rationale for separately investigating the ill-effects associated with inflation on the banking system development in Sri Lanka while shedding a light on the concepts of financial restraint model. This helps to see whether the interest spreads prevailing in Sri Lanka have truly created rent opportunities for its banks.

3. Literature Review

A growing body of empirical studies has documented the advantages of having low and stable levels of inflation as well as the costs associated with higher levels of inflation (Azariadis & Smith, 1996; Boyd,

Levine, & Smith, 2001; Choi, 1996; Khan & Senhadji, 2001). Inflation has two dimensions, namely, the magnitude and the volatility. Both of these dimensions can exert an influence on the interest rates and credit markets in numerous ways. But, the majority of studies concerning inflation have focused on the magnitude of inflation whereas the volatility of inflation has not been emphasized sufficiently. Importantly a measure that accounts for both the magnitude and the volatility of inflation simultaneously has not been used to investigate the effect of inflation on financial markets. This section reviews some of the literature concerning the effects of inflation on bank lending and banking system development.

Inflation aggravates contracting issues through making it difficult to arrive at appropriate predictions on the future contingencies. In other words, inflation intensifies the level of uncertainty (Landskroner & Ruthenberg, 1985). Thereby, the lenders tend to increase their risk premiums and thus lending interest rates to face unforeseen contingencies. Therefore, inflation has a wealth redistribution effect between lenders and borrowers. However, the extent of such redistribution as well as the direction of redistribution primarily depends on the ability of each party to predict the level of future inflation (Balbach, 1977) and the bargaining power concerning the terms of the credit contract. More precisely, it is future anticipated inflation rate that changes the nominal as well as real interest rates on monetary assets together with the rates of return on real assets (Balbach, 1977; Fama, 1977). If individuals are able to accurately forecast the future levels of inflation, they will make rapid adjustments in the nominal interest rates so that the real rates remain constant. Under such setting, a redistribution of wealth would not take place between the lenders and the borrowers.

The accuracy of the anticipated inflation rate depends on many factors. For example, the trend of past inflation and expected changes in the economy including that of monetary policy can influence the anticipated future inflation. However, individual's tendency to predict inflation merely based on past rates of inflation is relatively higher due mainly to cost of obtaining and processing information about the future. As a consequence, in general, the expectations about future inflation rates are largely a function of past experiences rather than that of expected future events. For example, when the past inflation rates are high and volatile, the individuals tend to expect similar inflation in the near future as well. Hence low and stable inflation which can be forecasted with little or no error must be distinguished from volatile inflation which is unable to be forecasted with a reasonable degree of accuracy (Klinefelter, Penson, & Fraser, 1980).

The ill-effects of high and volatile inflation on credit markets mainly result from the unpredictability of the inflation over the life time of a credit contract (Klinefelter, et al., 1980). Low and stable inflation does not distort the allocation of resources as it is more or less accurately predictable. Therefore, the friction created by such inflation in the economic system is non-binding. As a result, the individuals do not make substantial alterations in their decisions. But, higher levels of inflation (particularly when it is highly volatile) hinder economic efficiency and impose negative externalities on the economy because it increases the friction in economic systems to binding levels (Azariadis & Smith, 1996).

Owing to increased uncertainty, the risk perceptions concerning long-term investment projects tend to increase at a faster rate compared to the risk perceptions concerning short-term investment projects. Consequently, the investors become more conservative and focus on short-term investments projects with front-loaded returns. Similarly, the lenders tend to channel their funds to borrowers with short-term investment projects rather than to those with long-term investment projects. This not only results in a

decrease in the overall investment level, but also prevents the economy from exploiting long-term investment projects with larger learning effects leading to productivity growth.

Concurrently, increased inflation reduces real rates of return and hence the incentives for individuals to lend diminish while incentives to borrow increase (Boyd, et al., 2001). Moreover, the banks tend to maintain higher interest spreads to compensate for higher uncertainty (Brock & Rojas-Suarez, 2000). Bose (2002) argued that inflation, when increases above a particular threshold, can create a downward pressure on output levels through affecting the lending regime of banks (i.e. the lending regime of banks tends to shift from screening to rationing). Therefore, the level of credit rationing tends to increase when the rate of inflation and its volatility increase(Azariadis & Smith, 1996; Boyd, et al., 2001; Landskroner & Ruthenberg, 1985). As a consequence, corporate sectors as well as consumers face more financial constraints.

Moreover, the predictability of future inflation affects investment decisions as well. Under stable levels of inflation, the investors are better able to evaluate the profitability of their investment projects and hencethey are more likely to undertake investment projects. In contrast, if the inflation is highly volatile, higher levels of forecasting errors are inevitable. Therefore, when the risks associated with investment increase, the required rates of return on investment tend to increase. As a consequence many profitable investment opportunities will be forgone.

Moreover, as argued by Stiglitz and Weiss (1981), when the investment projects become riskier and the lending interest rates increase, in general, it is likely that the good borrowers with relatively safer investment projects leave the credit market. This is because the returns on their investments are not sufficient to cover the increased cost of lending. Simultaneously, the composition of bad borrowers with riskier investment projects tends to increase because the bad borrowers do not have a strong intention to repay the loans or because their investments yield a higher return (if their projects are successful) so that they can cope up with higher cost of borrowing.

In summary then, high and volatile inflation can negatively affect on credit markets and banking systems directly through constraining the supply of financial services and indirectly through hindering the overall level of economy's investment (i.e. constraining the demand for financial services).

4. Methodology

The study employed exploratory data analysis techniques to explore the possible ill-effects associated with high and volatile inflation on the bank interest spreads and financial intermediation. The inflation is measured using the Wholesale Price Index (WPI) based on the arguments in the McKinnon-Shaw School which postulate a positive relationship between real return on holding money and the level of financial development (McKinnon, 1973; Shaw, 1973). Inflation rates were calculated based on the quarterly changes in WPI and thereafter annualized to be comparable with annual interest rates.

Unlike the magnitude, there is no straightforwardmeasure for the volatility of inflation. Moreover, a measure of the variability in inflation rate is not commonly reported among other macroeconomic indicators. But the volatility of inflation (in addition to the magnitude of inflation) can have a tremendous impact on the economic activities. Generally, the standard deviation of inflation rates over a particular period is used as an indicator of the volatility of inflation (Barro, 1995; Landskroner & Ruthenberg, 1985). Moreover, various researchers have investigated the effects of the magnitude and the volatility of inflation

separately. But, this paper argues that the true impact of inflation is reflected in a measure that accounts for both the magnitude and the volatility simultaneously. Therefore, to investigate the impact of inflation on the interest rates, the volatility index of inflation is estimated so that it accounts for both the magnitude and the degree of volatility of inflation. To this end, first, one year moving average of the quarterly inflation rates was used as an indicator of the magnitude of inflation while five year moving window standard deviation of quarterly inflation rates was taken as an indicator of the volatility. Finally, the volatility indicator was multiplied by the indicator of magnitude to arrive at the Inflation Volatility Index (IVI). Therefore, IVI takes higher values when either the magnitude or the volatility of inflation is higher.

5. Results and Findings

Like some other developing countries, Sri Lanka has recorded substantially higher levels of inflation throughout its history since the initiation of open economic policies in 1977. For example, according to World Development Indicators (2011), the average annual inflation in Sri Lanka during 1970-79 was 6.9 percent when the average annual inflation for India and Thailand were 7.5 and 8.0 percent respectively. Importantly, Sri Lankan inflation rate during this period has remained below the average inflation for the South Asian region which was 8.2 percent. However, after that period, Sri Lankan inflation rates have increased rapidly. For example, the average annual inflation in Sri Lanka during 1980-89 was 12.8 percent whereas the inflation in India and Thailand was 8.8 and 5.8 percent while the average inflation rate for South Asian region was 9.5 percent. Moreover, the inflation in Sri Lanka during 1990-99 was 11.3 percent when the average inflation rates during the same period in India, Bangladesh and Thailand were 9.5, 5.7 and 5.0 percent respectively (South Asian regional average was been 9.1 percent). Again annual inflation in Sri Lanka during 2000-09 was 10.7 when India, Bangladesh and Thailand experienced 5.5, 6.0 and 2.5 percent of inflation respectively. During this period too, Sri Lankan inflation rate has surpassed the South Asian regional average of 6.1 percent.

Figure 2 further illustrates the inflation trend in Sri Lanka since 1965 using Colombo Consumers Price Index (CCPI). According to that the inflation rate has remained below 10 percent on average before the initiation of open economic policies. For example, the average inflation during 1955-77 was as low as 3.1 percent. But soon after the initiation of open economic policies this has been doubled. For example, the average annual inflation during 1978-93 has been 13.0. Also India initiated open economic policies during the 1970s. Nevertheless, India has not experienced a rapid and long-lasting increase in the general price level. Therefore, it is evident that the inflation in Sri Lanka has gone out of control of the policy makers since the initiation of open economic policies.

During 1970-77, Sri Lanka was characterized with severe government interventions and price controls. This has been the main reason for substantially lower rates of inflation during pre-deregulation period. However, with the economic deregulation occurred in 1977 most of such government interventions and price controls were abolished. As a result, the prices started to rise rapidly given the substantial supply shortage prevailed during 1970-77 period. Hence the period between 1978 and 1993 can be recognized as a period of high inflation during which almost all years have recorded double digit inflation rates (except for 1985, 1986 and 1987).

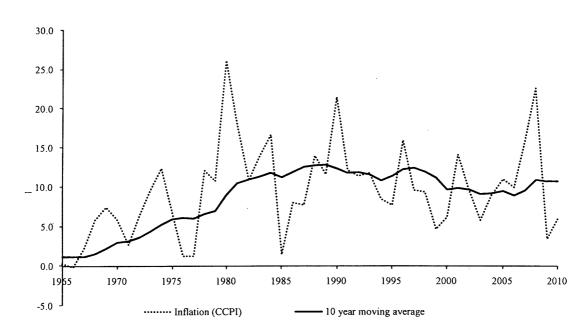


Figure 2: Inflation in Sri Lanka (1965-2010)

Since 1987 until around 1991 Sri Lankan political climate was substantially unstable due mainly to issues arose between 'JanathaVimuktiPeramuna' (a political party with Marxist viewpoints) rebellions and the government during 1987-89. This had possibly created an upward pressure on inflation mainly by curtailing the aggregate supply. The political climate started to recover since around 1991; and Sri Lanka entered into a relatively stable political regime particularly since 1994 under the newly elected government. As a consequence, the inflation started to decline gradually. For example, the inflation remained below 10 percent on average during 1994-2004 (except for 15.9 percent in 1996 and 14.2 percent in 2001).

Inflation skyrocketed again during 2005-08 and reached 22.6 percent by the end of 2008. Rapidly increased government expenditure and substantial decline in unemployment can be held accountable for this increase. For example, the government expenditure increased by around 20 percent annually on average during 2004-09. Increased defense expenditure, and wages and salaries are the main reasons behind the rapid increase in government expenditure during this period. Further, unemployment fell to an average of 6 percent during 2005-10 from an average of 8.2 percent during 2000-04 due mainly to a rapid increase in the public sector employment. This on the one hand caused an increase in the government expenditure while, on the other hand, caused an increase in the aggregate demand. However, inflation sharply decreased to 3.4 percent in 2009 from 22.6 in 2008. Declined prices of imports due to global financial crisis might have contributed to lower the inflation in domestic markets particularly in 2009 and 2010. Further, ending of the three-decade long civil conflict in the northern and eastern provinces in the first half of 2009 contributed to expand aggregate supply particularly due to increased economic activity in previously wartorn areas. This can be considered as another reason for the sudden decline in inflation.

Regardless of the causes and the magnitude of inflation, as illustrated in Figure 2 and Table 2, the inflation rates in Sri Lanka have been frequently changed in the opposite direction or at rapid rates unexpectedly. This volatility might have caused substantial pricing errors in the banking sector with regard to lending. In other words, unpredictable movements in the general price level might have caused forecasting errors concerning the profitability of a project and therefore the determination of appropriate lending rates might

have become a cumbersome task for banks. For example, it is evident that the banks have experienced negative real lending rates in 1990 and 2008 while very low rates in 1988, 2001, 2004, 2005 and 2007 as far as the period during 1988-2010 is concerned. In each of these occasions, it can be observed that either the inflation rate has suddenly changed in the opposite direction or has changed at an unusually higher rate. Therefore, the banks have failed to make appropriate adjustments in their loan prices. This would have caused substantial effects on their profitability during those and subsequent years. Given this potential loss, the banks, in general, seek to keep extra margins on interest rates (i.e. a higher risk premium). This results in higher interest spreads than those could have prevailed under stable and low levels of inflation.

Table 2: Inflation and Bank Interest Rates in Sri Lanka during 1988-2010

Year	Inflation (1)	Average Weighted Deposit Rate (2)	Average Weighted Prime Rate (3)	Real Deposit Rate (4) = (2)-(1)	Real Lending Ratε (= (3)-(1)
1988	14.0	12.0	15.0	-2.0	1.0
1989	11.6	13.0	17.4	1.4	5.8
1990	21.5	12.9	18.6	-8.6	-2.9
1991	12.2	14.1	19.6	1.9	7.4
1992	11.4	13.8	20.2	2.4	8.8
1993	11.7	13.6	20.4	1.9	8.7
1994	8.4	12.6	17.8	4.2	9.4
1995	7.7	12.4	19.9	4.7	12.2
1996	15.9	12.3	18.4	-3.6	2.5
1997	9.6	10.0	14.2	0.4	4.6
1998	9.4	9.2	15.1	-0.2	5.7
1999	4.7	9.1	15.2	4.4	10.5
2000	6.2	9.9	21.5	3.7	15.3
2001	14.2	10.8	14.3	-3.4	0.1
2002	9.6	7.5	12,2	-2.1	2.6
2003	6.3	5.3	9.0	-1.O	2.7
2004	9.0	5.3	10.2	-3.7	1.2
2005	11.0	6.2	12.1	-4.8	1.1
2006	10.0	7.6	14.7	-2.4	4.7
2007	15.8	10.3	17.0	-5.5	1.2
2008	22.6	11.6	19.2	-11.0	-3.4
2009	3.4	8.0	11.1	4.6	7.7
2010	5.9	6.2	9.3	0.3	3.4
Average	10.8	9.9	15.7	-0.8	4.9

Note: Inflation is measured using Colombo Consumers Price Index (CCPI)

Source: Author based on the statistics of CBSL (2010)

Importantly, in an uncertain environment characterized with high and volatile inflation, the banks may increase the lending rate instead of lowering deposit rates in an attempt to widen their interest spread. This is because lowering already marginal deposit rates often result in negative real deposit rates and thereby further discourage the deposit mobilization. In line with this argument, evidently Sri Lankan banks have been able to set their lending rates well above the inflation rates (except for year 1990 and 2008). For example, the average prime lending rate during 1990-99 was 17.5 percent compared to the inflation rate of 11.2 percent. Similarly the average prime lending rate during 2000-09 was 14.1 percent compared to an inflation rate of 10.8 percent prevailed during the period. As this paper argues, this is mainly due to the unpredictable volatility associated with the inflation which forces the banks to keep a higher risk premium (But the prevailing less competitive market structure of the banking system as well might have allowed the banks to set uncompetitive prices). Such high lending rates inevitably drive the good borrowers away from the banking system while making most of the investment opportunities in the economy less attractive for the investors owing to the high cost of borrowing. This on the one hand deteriorates the pool of borrowers while on the other hand reduces the demand for bank loans. Both of these cases are detrimental to the development of the banking system.

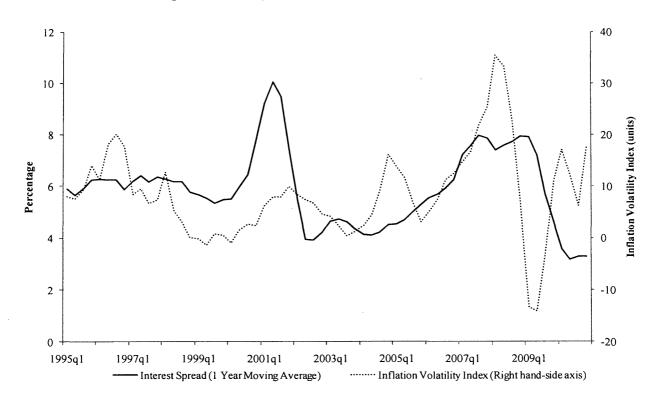


Figure 3: Volatility of Inflation and Bank Interest Spreads

Notes: Inflation Volatility Index is calculated by multiplying the five year moving window standard deviation of the quarterly inflation rates by the one year moving average of the the quarterly inflation rates.

Concurrently, as shown in Table 2, real deposit rate has been negative during many of the years between 1990 and 2010 while other years have recorded positive but very low real deposit rates (therefore, the banks have not had further opportunities to adjust the deposit rates, but the lending rates, to face volatile movements in inflation). Under very low or negative real deposit rates, the public tends to accumulate nonfinancial assets (e.g. autarkic assets) which are considered to be unproductive(Azariadis & Smith, 1996)or tends to divert their savings towards non-banking sector (particularly towards the informal sector)in order to avoid inflationary losses. However, the savings accumulated in terms of non-financial assets as well as the savings accumulated in the informal sector make lesser contribution to the economic activity of the country. Concurrently, the depositors are exposed to higher levels of risks when accessing non-banking savings institutions because those institutions are relatively less regulated compared to the formal banking system. To supplement the above discussionwhich was mainly based on the magnitude of inflation, the Inflation Volatility Index (IVI) was calculated as illustrated in section four to measure inflation by simultaneously accounting for variability and magnitude of inflation. Interestingly, as illustrated in Figure 3, a notable relationship between IVI and the interest spread could be observed in Sri Lanka between the year 1995 and 2010.3Therefore it is further evident that the banks tend to widen their interest spreads when the uncertainty is increased owing to sudden and unpredictable movements in the general price levels as indicated by IVI.

6. Conclusions and Implications

Sri Lankan economy is characterized with substantially high and volatile inflation during recent decades. Evidently, this has increased the overall uncertainty while exacerbating the friction in the financial market as suggested by Azariadis and Smith (1996) as well. Consequently, the banks have widened their interest rate spreads by lowering deposit rates and increasing lending rates in order to face the risks associated with

increased uncertainty. This is quite consistent with the arguments of Brock and Rojas-Suarez (2000) as well. Resulting lower or negative deposit rates might have discouraged the savings and diverted funds towards informal sectors and other unproductive means of non-financial savings. Simultaneously, the higher lending rates might have driventhe good borrowers away from the banking system while incentivizing the bad borrowers to misrepresent their type (Azariadis & Smith, 1996). The resultsare deteriorated pool of borrowers and increased credit rationing. Therefore, as suggested, for example, by Barro(1995) and Bose (2002), high and volatile inflation has affected negatively on both the demand for and supply of financial resources and hence on the financial intermediation process in Sri Lanka.

Findings of this study have an important implication on the suggestions made in the financial restraint model introduced by Hellmann, et al. (1997). For example, as their model suggests, a wider interest spread may be an indication of the availability of rent opportunities for the banks. But according to the findings of this study it can be argued that higher interest spreads prevailing in a context characterized with high and volatile inflation does not necessarily guarantee rent opportunities for the banks. This is because such interest spreads have been merely emerged to set off the losses attributable to inflation. The financial restraint model does emphasize the necessity of having a low and stable level of inflation as one of its preconditions. But most of the countries with a shallow financial depth experience high and volatile inflation as well. Therefore, financial restraint model remainsfairly inapplicable in most of the countries which requires a credible strategy for developing the financial systems. A model with a broader scope is necessary to address the issues prevailing in such countries.

This paper makes three main contributions to the theory and practice. First, the paper introduces a new measure of inflation that simultaneously accounts for both the magnitude and the volatility of inflation. This type of indicator facilitates the assessment of inflation and its ill-effectsmore accurately. Second, the paper highlights the incapability of contemporary models like the financial restraints model to foster a healthy financial development in most of the developing countries that are characterized with high and volatile inflation. This emphasizes the necessity of a new model for fostering financial development in such countries. Finally, the paper suggests that at the policy level, stabilization of the general price level, particularly through avoiding sudden price fluctuations, remains as one of the key objective which requires the greatest attention of the policy makers in fostering banking system development and efficient financial intermediation. Consistent and dynamic policy measures aligned with the domestic socio-economic background would be crucial in attaining such targets. These recommendations contribute to improve the credibility of the actions to be taken by the practitioners and policy makers.

Notes

- 1. The LTTE was recognized as a terrorist organization by numerous countries in the world. They were fighting with the Sri Lankan government forces claiming control over north and eastern provinces in Sri Lanka. The war finally ended in 2009 with the defeat of LTTE forces.
- 2. It should be noted that the equity market gained significantly since 2009 with the end of three-decade long civil conflict whereas the pre-civil war figures have been below 25 percent.
- 3. Interest spread has been abruptly increased during the fourth quarter of 2000 and third quarter of 2001 due mainly to upward adjustments of the policy interest rates by the CBSL. According to CBSL (2001), these policy interest rates have been increased as a response to curb the inflationary pressures created by increased food and fuel prices in the international market and shortage of food supply in the domestic market due to prolonged drought.

References

- Azariadis, C., & Smith, B. D. (1996). Private information, money, and growth: Indeterminacy, fluctuations, and the Mundell-Tobin effect. *Journal of Economic Growth*, 1(3), 309–332.
- Balbach, R. (1977). The Effects of Changes in Inflationary Expectations. Federal Reserve Bank of St. Louis Review(April), 10-14.
- Barro, R. J. (1995). Inflation and Economic Growth. *NBER Working paper 5326*. Retrieved from http://www.nber.org/papers/w5326.pdf
- Bose, N. (2002). Inflation, the credit market, and economic growth. Oxford Economic Papers, 54(3), 412-434.
- Botric, V., & Slijepcevic, S. (2008). Economic Growth in South-Eastern Europe: The Role of the Banking Sector. *Post-Communist Economies*, 20(2), 253–262.
- Boyd, J. H., Levine, R., & Smith, B. D. (2001). The impact of inflation on financial sector performance. Journal of Monetary Economics, 47(2), 221–248.
- Brock, P. L., & Rojas-Suarez, L. (2000). Understanding the behavior of bank spreads in Latin America. Journal of Development Economics, 63(1), 113-134.
- CBSL. (2001). Central Bank of Sri Lanka Annual Report: Central Bank of Sri Lanka.
- CBSL. (2010). Central Bank of Sri Lanka Annual Report: Central Bank of Sri Lanka.
- Choi, S., Smith, B., Boyd, J., . (1996). Inflation, Financial Markets, and Capital Formation. *Federal Reserve Bank of St. Louis Review 78*, 9–35.
- Fama, E. F. (1977). Interest Rates and Inflation: The Message in the Entrails. *The American Economic Review*, 67(3), 487-496.
- Hellmann, T., Murdock, K., & Stiglitz, J. (1997). Financial Restraint: Toward a New Paradigm. In M. Aoki, H.-K. Kim & M. Okuno-Fujiwara (Eds.), *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis* (pp. 163–207). Oxford: Clarendon Press.
- Khan, M. S., & Senhadji, A. S. (2001). Threshold Effects in the Relationship Between Inflation and Growth. *IMF Staff Papers*, 48(1).
- King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might be Right. *The Quarterly Journal of Economics*, 108(3), 717–737.
- Klinefelter, D. A., Penson, J. B., Jr., & Fraser, D. R. (1980). Effects of Inflation on Financial Markets and Agricultural Lending Institutions. *American Journal of Agricultural Economics*, 62(5), 1054-1059.
- Landskroner, Y., & Ruthenberg, D. (1985). Optimal Bank Behavior under Uncertain Inflation. *The Journal of Finance*, 40(4), 1159-1171.
- Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35(2), 688–726.
- McKinnon, R. I. (1973). Money and capital in economic development. Washington: Brookings Institution.
- Shaw, E. S. (1973). Financial deepening in economic development. New York: Oxford University Press.
- Stiglitz, J., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71(3), 393-410.

- Tian, X., & Zhou, M. (2008). Banking System Efficiency and Chinese Regional Economic Growth: An Empirical Analysis Based on Banks' Micro-efficiency. *The International Journal of Business and Finance Research*, 2(1), 41–51.
- Tuuli, K. (2002). Do Efficient Banking Sectors Accelerate Economic Growth in Transition Countries.

 Paper presented at the BOFIT Discussion Papers 14/2002.
- Wanniarachchige, M. K. (2011). Effects of Civil War on the Financial Intermediation in Sri Lanka: Possible ill-effects on interest spreads, credit and bank branch network. Paper presented at the 2nd Annual Conference of the International Association for Asia Pacific Studies, Beppu, Japan.
- World Development Indicators. (2011). Inflation, consumer prices (annual %). Retrieved 08/06/2011, from The World Bank: http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG
- Younis, M., Lin, X. X., Sharahili, Y., & Selvarathinam, S. (2008). Political stability and economic growth in Asia. *American Journal of Applied Sciences*, 5(3), 203–208.