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**RELATIONSHIP BETWEEN INFLATION AND BUDGET
DEFICIT IN MYANMAR (1986 - 2016)**

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RELATIONSHIP BETWEEN INFLATION AND BUDGET DEFICIT
IN MYANMAR (1986 - 2016)

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ABSTRACT

Many scholars believe that budget deficit is the main cause of inflation. This paper attempts to investigate the relationship between inflation and budget deficit in Myanmar from 1986 to 2016. This study applied time series data from CSO and World Bank. In the empirical analysis, *ADF unit root test*, *co-integration test* and *Granger-causality test* are applied. According to the co-integration test, there is indirect long run co-integration between inflation and budget deficit in Myanmar. However, the Granger Causality test's results show that budget deficit causes inflation in Myanmar.

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LIST OF ABBREVIATIONS

ADF	=	Augmented Dickey-Fuller
ASEAN	=	Association of South East Asian Nations
BD	=	Budget Deficit
BOP	=	Balance of Payment
CBM	=	Central Bank of Myanmar
CPI	=	Consumer Price Index
CSO	=	Central Statistical Organization
DCs	=	Development Committees
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
IMF	=	International Monetary Fund
INF	=	Inflation
MOPF	=	Ministry of Finance and Planning
NA	=	Not Available
NLD	=	National League for Democracy
SAOs	=	State Administrative Organizations
SEEs	=	State Economic Enterprises
SLORC	=	State Law and Order Restoration Council
SPDC	=	State Peace and Development Council
T-Bills	=	Treasury Bills
T-Bonds	=	Treasury Bonds
USDP	=	Union Solidarity and Development Party
-	=	Nil or negligible

CHAPTER I

INTRODUCTION

1.1 Rationale of the Study

The relationship between the inflation and budget deficit from 1986 to 2016, is necessary in studying Myanmar's development while the country is facing both budget deficit and inflation problems in long term.

Greenspan (2007) cited Professor Burns that "Excess government spending causes inflation". Inflation is one of the monetary tool and important issue for developing countries. Inflation can impact on the people by the rising of the price of services and products. And the budget deficit is the long term relationship between inflation in Myanmar. Dr. Myat Thein (2009) commented that "In so far as budgetary deficits are the root cause of inflation, an obvious remedy would seem to be to undertake tax reform and expenditure cuts."

Comparing with ASEAN countries, Myanmar has the highest inflation rate and long run budget deficit. According to Olivera-Tanzi Effect, budget deficit can cause inflation and vice versa, inflation can cause budget deficit. This study aims to examine the relationship between inflation and budget deficit.

In Myanmar, inflation can be caused by many factors. Nevertheless, in this study, budget deficit is emphasized and applied under the author's assumption. Budget deficit also happens in other countries, but it has been happening obviously in Myanmar for many years. Moreover, Myanmar is facing with low tax revenue, which also leads to imbalance of government revenue and expenditure. The author's chooses the budget deficit over the exchange rate, broad money and other macroeconomic variables.

Macroeconomic stabilization can support economic development. To control the inflation rate, Central Bank plays as a big role not only for low and steady stage on inflation but also for economic development. Professor Rajan (2018) suggested that as the central bank of a developing country, we have additional tools to generate growth – we can accelerate financial development and inclusion. The best way for the central bank to generate growth in the long run is for it to keep inflation low and steady. The above statement is a concept that attempts to be lower inflation rate encourage directly and indirectly to economic development.

1.2 Objective of the Study

The objective of the study is to investigate the relationship between inflation and budget deficit in Myanmar. To examine the co-integration and causality between inflation and budget deficit in Myanmar.

1.3 Scope and Limitation of the Study

The study period is from 1986 to 2016, which is about 31 years. All necessary data are collected from various issues of statistical yearbooks issued by Central Statistical Organization (CSO) and the World Bank website.

This study has some limitations. Firstly, though there are a number of variables which can cause the inflation such as money supply, interest rate, exchange rate, only budget deficit is considered.

Second limitation is that this study does not include in detail background explanations of political and economic system, policy and structure and also the detail status of budget system, policy and structure.

1.4 Method of Study

Descriptive method and empirical analysis are used in this study. First, graphical explanation is applied to examine long run relationship between inflation and budget deficit. To detect the direction of causality, Granger Causality Test is applied. In doing this, unit root tests, and co-integration test are considered for data stationary and long-run equilibrium respectively.

1.5 Organization of the Study

The organization of this study is as follows;

Chapter one is an introduction which includes rationale of the study, objective of the study, scope and limitation of the study, method of study and organization of the study. Chapter two is literature review. Chapter three discuss an overview of relationship between inflation and budget deficit in Myanmar. Chapter four presents empirical analysis. The last chapter five draws conclusion and policy recommendations based on findings.

CHAPTER II

LITERATURE REVIEW

2.1 Defining Inflation and Budget Deficit

Inflation is defined as a sustained increase in the general level of price of goods and services in a country and it is measured as an annual percentage change of consumer price index (CPI).

A budget deficit occurs when expenses exceed revenue. According to National Planning, Budget means that government has to implement projects; how much revenue will be collected and how to expend (manage) this collected revenue for the upcoming fiscal year through listing the finances.¹

2.2 Theories of Inflation

2.2.1 The Classical Theory of Inflation

The “Classical Theory of Inflation” was formulated by Jean Bodin, Richard Cantillon, John Locke, David Hume, Adam Smith and William Petty. This theory is developed as the classical quantity theory of money. Later on, Irving Fisher stated his first theory of inflation in his publication named “The Purchasing Power of Money” in 1911. According to his theory, inflation and money supply at a given level of output are directly proportionate. The classical theory of inflation is obtained directly from the classical quantity theory of money.

Fisher actually first formulated the equation of exchange in terms of the nominal value of transactions in the economy PT :

$$MV_T = PT$$

Where P = average price per transaction

T = number of transactions conducted in a year

$V_T = PT/M$ = transactions velocity of money

Because the nominal value of transactions T is difficult to measure, the quantity theory has been formulated in terms of aggregate output Y as follows: T is assumed to be proportional to Y so that $T = vY$, where v is a constant of proportionality. Substituting vY for T in Fisher’s equation of exchange yields $MV_T = vPY$, which can be written as Equation 2 in the text, in which $V = V_T/v$.

¹ This is translated from official Burmese version.

This equation can also be written in terms of percentage changes.

$$m + v = p + y$$

$$p = m + v - y$$

Where, p = percent rate of inflation, m = percent rise in money supply, v =percent increase in velocity of money, and y = percent increase in real output.

As the afore-mentioned equation suggests, a change of variable on the one side is directly proportionate to change of variable on the other side, for example, the price will change when the money supply changes even though the velocity of money remains unchanged. The greatest shortcoming of the classical quantity theory of money is that it does not explain the process by which an increase in money supply causes the rise in the price level.

The next formulation of the classical theory of inflation is called the Neo-Classical theory which was formulated by economists from Cambridge. The classical theorists held the opinion that an increase in money supply will trigger inflation. On the contrary, Cambridge economists claimed that a growth in demand for money is the main cause of inflation. The Cambridge version of quantity theory of money is as follows: $M_D = kRP$ (where M_D = amount of money demanded; R = real output; P = general level of prices; and k = a constant proportion of total income people want to hold in the form of money). The Cambridge equation yields the price level equation as $P = M_D / kR$. This equation implies that the general level of price increases in proportion to an increase in demand for money, given k and R .

2.2.2 The Keynesian Theory of Inflation

Keynes's theory of inflation was formulated on the basis of the concepts developed by Wicksell classical economists'. From the standpoint of classical economists, an increase in money supply is the only main cause of inflation. On the other hand, Keynes assumes that aggregate demand can increase when real factors increase.

Keynes stated the concept of inflationary gap in the book titled "*How to Pay for the War*" which he wrote in 1940. He defines inflationary gap as the planned expenditure in excess of output available at full employment. The British Chancellor of Exchequer made a definition of inflationary gap in his budget speech of 1941. According to his statement, inflationary gap is defined as "the amount of the

government's expenditure against which there is no corresponding release of real resources of manpower or material by some other members of the community". The inflationary gap causes only inflation, without increasing the level of output. It is important to note here that Keynes linked inflationary gap and the consequent inflation to full employment output. This theory suggests that the expenditure in excess of output at less-than-full-employment level is not inflationary even if prices rise. This is because such increase in price generates additional employment and output. The additional output absorbs the excess demand ultimately without causing inflation.

2.2.3 The Monetarist View on Inflation

The modern monetarists developed a modified view based on the classical quantity theory of money also known as "Modern Fisherianism". Like the classical theorists, modern monetarists accept the view that an increase in money supply causes the rise of the general level of price. Modern monetarists modify this concept of the classical quantity theory of money.

They argue that there is a proportional relationship between the stock of money and the level of price. Quoting Friedman's argument, "In its most rigid and unqualified form the quantity theory asserts strict proportionality between the quantity of what is regarded as money and the level of prices. Hardly anyone has held the theory in that form".

The modern monetarists do not agree with the classical proposition that the money supply curve is vertical in short-run. Monetarist such as Friedman argues that a reduction in the money stock in practice first reduces the level of output, and only later has an effect on prices.

Difference between modern monetarists and classical economists are based on the short run and long-run effects of change in the stock of money. Classical economists argue that, in the short-run, changes in the stock of money can and do have important effect on real output. But in the long-run, in their opinions, changes in money stock remain neutral to the real output. The modern monetarists hold the view that changes in the money stock have no real effects on the level of price in the long run after they have worked their way through the economy.

2.2.4 Modern Theory of Inflation

Modern theory of inflation is related to theory of price determination. The price of a commodity is determined according to market demand and supply. Price varies depending on both factors. Likewise, the aggregate price level is determined by the aggregate demand and aggregate supply and variation in the aggregate price level is caused by the variations in the aggregate demand and aggregate supply.

Modern theory of inflation is developed by blending the concepts of classical and Keynesian theories of inflation. According to modern analysts, inflation is caused not only by demand-side factors but also by supply-side factors. The demand-side factors are called demand-pull factors, and supply-side factors are called supply-side or cost-push factors. Accordingly, there are two kinds of inflation:

- (i) Demand-pull inflation
- (ii) Cost-push inflation.

(i) Demand-Pull Inflation

The demand-pull inflation occurs when aggregate demand exceeds aggregate supply. Demand-pull inflation can be sub-divided into two types: demand pull inflation caused by monetary factors and the demand pull inflation caused by real factors.

(a) *Demand-Pull Inflation due to Monetary Factors*

The demand pull inflation is caused by excess money supply which increases more dramatically than potential output. For instance, if there is a significant increase in the GDP of a country, there will be a corresponding increase of aggregate demand (AD) thus leading to the cause of inflation. Another example is the strategy of monetary expansion used by the United States Government. They raised government expenditure on a large scale so that the money would flow well to the people during the economic recession to overcome the 2008 Global Financial Crisis. In other words, people got more money from the monetary expansion strategy, and buying more goods and services again, and thereby cause an increase of aggregate demand. In fact, this policy results in inflation. The most important factor causing demand-pull inflation is monetary expansion in excess of increase in real output.

(b) ***Demand-Pull Inflation due to Real Factors.*** The real factors, which cause demand-pull inflation, are those that cause upward shift in the *IS* curve. The factors that cause upward shift in the *IS* curve are;

- (i) Increase in government spending given the tax revenue
- (ii) Cut in tax rates without change in the government expenditure
- (iii) Upward shift in the investment function
- (iv) Downward shift in the saving function
- (v) Upward shift in export function
- (vi) Downward shift in the import function

(ii) Cost-Push Inflation

Inflation is caused not only by demand-side factors but also by the cost-push factors such as an increase of production cost. The 1958-recession in western countries had proved this fact. During this recession, there had been dramatic fall in aggregate demand. Despite that, the general price level did not fall correspondingly. In theory, if there is a decrease or increase in demand, there must be a corresponding decrease or increase in price level. According to this phenomenon, general price level should have fallen. Instead, it remained unchanged, there was a stagnation of economy and there was no inflationary pressure. Likewise, this unusual feature of economy has become a common experience in recent financial issues. The general price level generally continues to increase with a high rate of unemployment. In a quest for the solution to such type of issue, particularly for the Recession of 1958, supply side theories of inflation such as cost-push theory and supply-shock theory of inflation emerged.

The cost-push inflation originates from the monopoly power exercised by some groups in the society such as labor unions and firms in monopolistic and oligopolistic market setting. It is found that powerful labor unions often enforce a rise in wages such as minimum wage. This kind of rise in price level is called wage-push inflation. Not only labor unions, the firms enjoying monopoly power have also been found to cause rise in the general price level. The monopolistic and oligopolistic firms push their profit margin up by causing a rise in the general price level. Moreover, another cause of rise in commodities price is due to the expectation on speculative motive of firms. These kinds of inflation are called profit-push inflation.

Additionally, the supply shock is one of the main causes of cost-push inflation. Thus, the cost-push inflation may be classified on the basis of supply-side factors as follows.

- (i) Wage-push inflation
- (ii) Profit-push inflation
- (iii) Supply-shock inflation

To this may be added some other kinds of supply-side factors, such as minimum-wage legislation and prices administered by government. The minimum-wage legislation is an intervention in the labor market. This prevents the downward adjustment in wages during the period of recession. Administered prices, for instance fixing a minimum price for some sections of producers, prevent downward adjustment in prices and keep the prices indirectly high for socio-political reasons. For example, labor unions in Myanmar have always used the boycott-way to get the higher minimum wage and other agreements with employers and government.

(i) Wage-Push Inflation

Labor unions are responsible for wage-push inflation when they demand for the increase of minimum wage. The logic of wage-push inflation is simple. Minimum wage is generally legislated by the government while the labor unions use political pressures to force employers and the government to increase wages over the actual market price without a matching increase in labor productivity. Naturally, increasing wages leads to higher cost of production. The increase in cost of production also causes the aggregate supply curve to shift backward. A backward shift in the aggregate supply curve causes an upward movement in the price level.

(ii) The Profit-Push Inflation

Another supply-side factor that is said to cause inflation is the use of monopoly power by the monopolistic and oligopolistic firms to enhance their profit margin, which results rise in price and inflation. It is important to note here that the existence of monopolistic and oligopolistic firms and the use of their monopoly power to increase their prices is a necessary condition for profit-push inflation. A realistic market situation all over the world is characterized by imperfect market conditions. It is important to note that the two main causes for profit push inflation are emergence of monopolistic and oligopolistic business firms. Therefore, a profit-push type of inflation has a great theoretical possibility. It is argued that in imperfect markets,

prices are largely administered prices determined by the management rather than market determined. It is also said that after being administered or manipulated by the management, the prices are then to be adjusted and promoted further to a higher level exceeding the extent of the increase in input cost. The administered prices are adjusted upward in a greater proportion than the rate of increase in input prices or even without increase in input prices. When monopolistic and oligopoly firms increase the administered prices with a view to increasing their profit margin, it leads to a rise in prices and takes the form of profit-push inflation.

(iii) Supply-Shock Inflation

Another type of cost-push inflation is the supply-shock inflation. Supply shock is an inflation which happens due to the shortage of a country's main goods. Theoretically, this shortage is caused by a decrease of supply in the market. This causes the increase of demand and finally leads to inflation. For instance, steel, oil, common food, cement and other accessories are necessary for daily lives. The rise in the price may be caused by supply bottlenecks in the domestic economy or international events (generally war) causing bottlenecks in the movement of internationally-traded goods and causing, thereby, shortage of supply and rise in the prices of imported industrial inputs. The sudden rise in the OPEC oil prices during 1970s due to Arab-Israel war is the famous example of the supply shock (Dwivedi, 2004).

2.2.5 New Classical Theory of Inflation

The classical foundations of the Monetarist school provide a first point of departure for the New Classical approach to macroeconomics. In general, the monetarist critique of Keynesian economics arose out of the period of stagflation during the 1970's and 1980's. The Phillips curve, adapted into the Keynesian framework, was unable to explain or account for the co-existence of two seemingly inconsistent phenomena; inflation and unemployment should be trade-off consequences of demand management. In 1968, a few years before stagflation ever became an issue, the monetarist Milton Friedman portended a few serious limitations with the Keynesian framework and specifically the Phillips curve. Rather than showing a simple inverse relationship between inflation and unemployment, the curve should relate unemployment to real wages rather than nominal prices. In showing

changes between the inflation and unemployment rates, the relationship was implicitly oversimplified into a trade-off that appeared static rather than dynamic. Also among his contributions was the natural rate hypothesis, which proposed a stable equilibrium rate of unemployment to which “the stable private economy tends to return once disruptive influences” is removed.

This theory implies that there is no real tradeoff between unemployment and inflation, but rather any short-run tradeoff reflects that economic agents have made a mistake in their expectations of future inflation. In doing so, workers have succumbed to a money illusion “because they have confused absolute and relative price changes. In the short-run the aggregate supply curve is upward sloping because workers have not yet adjusted to real changes in wages. Over time, the incorrect expectations of the workers gradually adapts to coincide with the actual level of prices; the short-run aggregate supply curve shifts upward until the wage increase translates entirely into a proportional increase in the price level. We have again reached the classical formula: every increase in spending or wages will translate into an equivalent change in the price level. Even amongst the monetarists there is no clear consensus about how long this corrective period lasts. For monetarists in general, however, we can see that the problem of “money illusion” arises from limited information about relative wages, and expectations that are always retrospective, or adaptive.

Although involuntary unemployment is something that comes about in disequilibrium, Friedman’s theory of unemployment was an equilibrium approach. The money illusion can only have an impact on unemployment, insofar as workers have been mistaken in their expectations about the future rate of inflation. When there is an unexpected fall in aggregated demand, the price level and price of output will also fall. Employers will hire more workers as the marginal cost per worker increases, and as the real wage are perceived to decrease, so will the aggregate supply of labor. At the end, unemployment falls. Desperate unemployment comes about as workers move between jobs and adjust to nominal price changes. Therefore, unemployment happens in the economy when workers have mistaken expectations even while they are struggling to maximize their utility. This is not an ideal situation because under different circumstances the aggregate income could be high, but it is the best situation given the set of constraints.

2.3 Theoretical Relation between Inflation and Budget Deficit

2.3.1 Olivera-Tanzi Effect

It appears that the “budget deficit-inflation” link in fact exhibits a two-way interaction, i.e., not only budget deficit through its impact on money and expectations produces inflationary pressure, but also high inflation that has a feedback effect pushing up budget deficit (Helmy, 2008)

Olivera-Tanzi effect is the case when the price increase exceeds the optimal rate of inflation and when the erosion of real collection of tax revenues surmounts the gains from any further money creation. The former analysis of the revenues from the inflation tax is based on the following assumptions:

- 1) the only cause of inflation is the inflationary finance of the fiscal deficit,
- 2) the money supply changes only as a consequence of the deficit financing,
- 3) that inflationary expectations equal the actual price changes,
- 4) that the monetary multiplier equals 1, that is, private banks do not evolve in money creation.

On the other hand, whether the Oliver-Tanzi effect would operate and whether it will operate strongly or not, will depend on the features of the tax system. In other words, Oliver-Tanzi will be the stronger,

- a) the lower the progressivity of all forms of taxes, or the lower the elasticities of “normal” tax revenues with respect to the price increase,
- b) the higher the share of indirect sales taxes and excises with specific tax rates in total tax revenues,
- c) the more difficult the tax system accommodates to the price increases by introduction discretionary measure.

Some analyses show that the Olivera-Tanzi effect causes the increase in fiscal deficit. This follows from the fact that the nominal government expenditures increase almost instantaneously and in the same proportion as prices, that is, they do not change in real terms. Along with the decline of the real government revenues, this causes the steady rise of the fiscal deficit. Therefore, having no possibility for revenues to keep the pace with the price increase and with rise of nominal expenditure other than the initial deficit, the government faces certain amount of unintended deficit, which depends on the rate of inflation.

The inflation itself, however, is a consequence of unsustainable fiscal deficit. In other words, when there are limited possibilities for broadening the tax base, when

the domestic capital market is insufficiently developed, and the level of external reserve is low, money creation is the only possible way to finance the surplus of government expenditures over the government revenues. The mutual relationship between the fiscal deficit and inflation is almost perfect under such circumstances. It is then obvious that the simultaneous link between the inflation and fiscal deficit causes a self-perpetuating interference of those two phenomena, whereby every further step of this interference means a higher rate of inflation and deficit. It seems logical to raise the question whether there is some rate of inflation at which those tendencies stop, that means some rate of inflation that would provide for the government some inflation tax revenue that would be sufficient to cover the initial deficit as well as the deficit provoked by inflation, or does that process necessarily lead to an explosion of the deficit and inflation (Kiguel, 1989; Choudhry, 1990; Canavese, Heymann, 1992).

If the initial amount of fiscal deficit is

$$D_0 = G_0 - T_0,$$

in times of inflation, owing to the collection lag it becomes

$$D_\pi = D_0 + d(\pi),$$

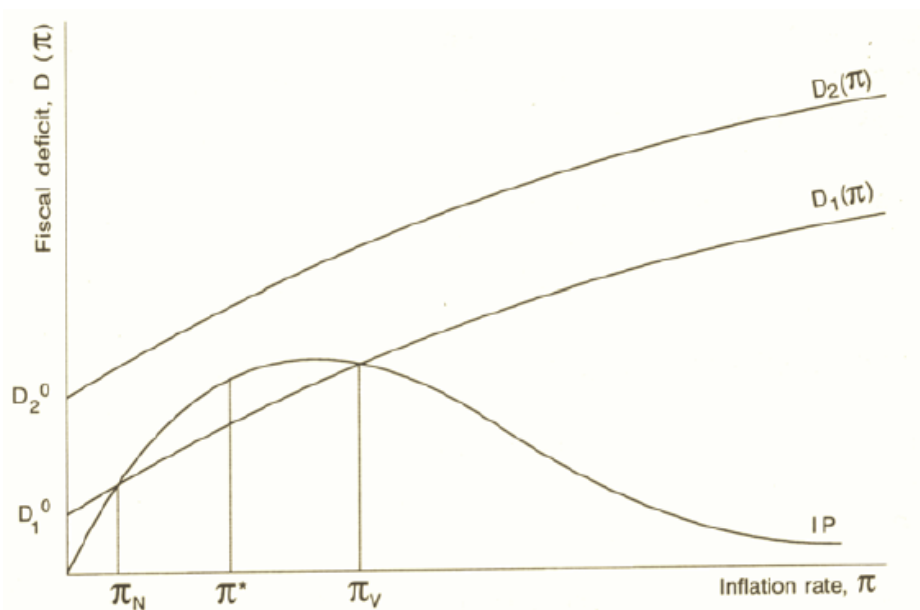
In the above expressions D = fiscal deficit, T = tax revenues, G = government expenditures, d = a part of the actual deficit, which depends on the rate of inflation.

Equilibrium is reached when the real inflation revenues match the total deficit, that is when $D_\pi = IR$ (Choudhry, 1990).

The fiscal deficit function is the increasing one since its first order derivative is positive. That means that the real fiscal deficit increases together with the rate of inflation, and that it reaches its maximum since its second order derivative is negatives.

If one assumes the function of the demand for real money balances of the Cagan type, and the shape of the fiscal function mentioned above, the equilibrium inflation can be determined graphically (Figure 2.1).

Figure 2.1 Fiscal Deficit and Inflation



Source: Anušić, Z., & Švaljek, S. (1996).

The equilibrium is reached where the two schedules intersect. There are two such points – one at the low inflation rate, π_L , and one at high rate of inflation, π_H . Since the second order derivatives of both schedules are negative in the neighborhood of low equilibrium inflation rate, stable equilibrium is reached at that inflation rate. Namely, at that level of inflation any further monetary expansion leads to the increase in real revenues from the inflation tax and diminishes the deficit, thereby reducing the need for further inflationary finance and leading the system to the equilibrium. If the initial fiscal deficit is so high that there is no monetary expansion that could cover it, there is no equilibrium rate of inflation. Such unsustainable level of fiscal deficit could be even the one that is lower than maximum revenue from inflation, since there is the part of unintended fiscal deficit caused by the rate of inflation maximizing the inflation tax. When there is no stable equilibrium of that dynamic process, any further attempt to increase inflation revenue through money creation deepens the gap between the real government revenues and the real government expenditures (Choudhry, 1990).

From the above analysis one can conclude that if there is a possibility for Olivera-Tanzi effect to occur, there are at least two arguments in favor of low, rather than high inflation. High inflation can, on one hand, lead to great loss in real tax

revenues. On the other hand, high inflation causes the increase in the difference between the real government revenues and real government expenditures and can provoke the self-generating and interrelation of fiscal deficit and inflation, thus destabilizing monetary and fiscal sphere of macroeconomics. (Anušić, Z and Švaljek, S. 1996).

2.3.2 Deferred Inflation Effect

Some researchers also argue that budget deficit financing by means of accumulating domestic debt seems to postpone the inflation tax. If government finances its deficit by printing money now, then in the future the burden of existing servicing stock of government debt will be easier. Interest payments that otherwise add to the next periods' government expenditures will not exert additional pressure on fiscal authority and the deficit will not increase over time. As Sachs and Larrian (1993) put it; "borrowing today might postpone inflation, but at the risk of even higher inflation in the future". Meanwhile, Sargent and Wallace (1981) observed that when fiscal authority sets the budget independently, the monetary authority could only control the timing of inflation.

Let us assume that initially there is no public debt and government budget is balanced. Then, however, for some reasons the government starts running a deficit. If it is financed by selling domestic debt to the public, then, provided that primary deficit remain unchanged, the overall deficit will grow because of the mounting interest burden on the debt.

Later, as Sargent and Wallace (1981) stress, it may be well in the case in which public will be reluctant to obtain more government debt because they will doubt the government's ability to service it. They refer to this phenomenon as an assumption of an upper limit on the real stock of debt relative to the size of economy. Then the only option is to use money printing and to collect seignior age. As provided, that fiscal policy determines constraints for monetary policy. The monetary authority will be unable to control money supply and therefore, inflation forever. Meanwhile, taking account in the extensive bond financing of the deficit that proceeded the critical moment, "sooner or later, in a monetarist economy, the result is additional inflation". It occurs because the principal and interest on the debt accumulated up to now and issued to fight inflation must be financed, at least partially, by seignior age.

However, it seems noteworthy that public-debt-financed deficits do not need a future increase in inflation. The reason is that the government may temporarily defer inflationary pressure so as to implement some sort of restructuring before the economy closely approaches the upper limit on public debt.

2.4 Calculation of Consumer Price Index (CPI)

A consumer price index (CPI) measures the average change in the retail prices of goods and services purchased and consumed by the households. Such changes affect the real purchasing power of consumers' incomes and their welfare. As all the prices of different goods and services do not change at the same rate, a price index can only reflect their average movement. A price index is typically assigned a value of unity or 100. The percentage change in the CPI is used to estimate the rate of inflation.

In order to calculate the nationwide CPI in Myanmar, many groups of consumer goods and services purchased and consumed by the households are divided into various sub-groups in various sectors. In the category of consumer goods, they are divided into respective subgroups such as those of food and beverage of non-food commodities (cigarette, betel etc.), extra food commodities, fuel and light, and clothing etc. Likewise in the service sector, they are divided into various subgroups in terms of house rental and repair fee, house accessories and reservation fee, health care service and education service etc.

Data collection was made by two types, type one is that data are collected from 80 townships for 2006 base year and 82 townships for 2012 base year. Retail prices of 158 commodities are collected once a week for 2006 base and 274 commodities are collected once a month for 2012 base. Wholesale price data were collected from Yangon Township only by monthly.

To calculate the nationwide CPI and inflation rate, the Central Statistical Organization (CSO) conducted a survey in which the household income and expenditure of 32669 sample households in 82 townships were assessed. While conducting this survey in 2012, there were basically 438 types of groups which are in groups of product and service. The CPI is computed according to Laspeyres' formula.

Of the Consumer Price Indexes (CPI), which originated around 18th century, Laspeyres and Paasche indexes were the most common ones used nowadays. The method to calculate the CPI in Myanmar is the Laspeyres Index which is as follows;

$$CPI_L = \sum_i \frac{P_{it} Q_{i0}}{P_{i0} Q_{i0}}$$

Where P_{i0} is the price of item i at time 0 (the base period)

P_{it} is the price of item i at time t

Q_{i0} is the quantity consumed of item i at time 0

Laspeyres formula assumed that consumers purchase the same number of commodities both during the base period and during the observation period.

2.5 Sources of financing to budget

According to Ouanes and Thakur (1997), there exist five different ways of financing budget deficit.

- (a) Borrowing from the Central Bank (or “monetization” of the deficit so called “printing” money);
- (b) Borrowing from the rest of the banking system;
- (c) Borrowing from the public
- (d) Borrowing from abroad, or running down foreign exchange reserves;
- (e) Accumulation of arrears.

(a) Borrowing from the Central Bank

This is the easiest way to fill the budget deficit problem for government. This method always leads to the growth of monetary base and of money supply such it is referred to as just “printing money”.

Monetization occurs (i) when the Central Bank directly finances budget deficit by lending funds needed to pay government bills; or (ii) when the Central Bank purchases government debt at the time of issuance or later in the course of open market operations.

In the words of Dornbusch and Fisher (1998), “inflation acts just like a tax because people are forced to spend less than their income and pay the difference to the government in exchange for extra money. The government thus can spend more resources and public less, just as if the government had raised taxes to finance extra spending”.

We should note the implication that macroeconomic theory derives from financing a budget deficit through inflation tax: a sustained increase in money growth

and in inflation ultimately leads to a reduction in the real money stock (Dornbusch and Fisher 1998). Thus, we can conclude that higher deficits need higher inflation rates (Sachs and Larrain, 1993).

The important note here is the Central Bank should timely support the banks, when they need money. If not, not only for banks but also for public will suffer.

(b) Borrowing from the Rest of Banking System

The Central Bank sells the Treasury Bonds and Treasury to either the interbank market or to people in order to furnish its needs in money supply. Private Banks can also get debts (loans) from each other in case of the need of money supply due to various circumstances, whereas the Central Bank bills the interest rate.

(c) Borrowing from Public

Borrowing from the public may be an alternative way to finance budget deficit. If the government debt is obtained by non-bank but domestic public, the government immediately will spend the proceeds by paying its bills. Then monetary base remains unchanged as there is no influence on money supply and therefore, no room for inflation. Still, borrowing from public by issuing debt might cause certain inconveniences for policymakers. For example, bond finance of budget deficit may push up the interest rates thereby putting pressure on private sector finance and on economic growth. Additionally, the cost of borrowing at such high rates surely increases debt service payments thus adding to future budget expenditures (Piontkivsky *et al.*, 2001).

If banks acquire the government debt, the consequences with regards to monetary base and money supply may differ. Government borrowing puts additional pressure on banks' reserves and banks demand more liquidity from the Central Bank. If such an extra demand for credit from banks is asked, the Central Bank supplies banks with additional reserves. In fact, the monetary base increases thereby causing a rise in money supply through deposit multiplication and thus fueling inflation. However, banks will be forced to reduce credit to the private sector in order to meet the higher demand for government credit by purchasing debt (Ouanes and Thakur, 1997) as if the Central Bank does not adjust the extra demand. This reduction is often referred to as crowding-out of private spending. When government borrows from

foreign public, the impact of budget deficit on money supply crucially depends on the exchange rate regime.

If the Central Bank adheres to a fixed exchange regime, then any foreign borrowing must be sterilized in foreign exchange market so as to maintain the exchange rate at the ground level. But this means that the Central Bank has to increase the monetary base by buying up the excess supply of foreign exchange in return for additional reserves that are injected into the system.

Yet, when floating exchange rate regime dominates in the economy, external borrowing to finance budget deficit allows the government to avoid the increase in monetary base and money supply and thus prevent inflationary developments. Among these consequences of such policy are the appreciations of exchange rate and negative pressures on tradable goods sector due to deterioration of its competitiveness in international markets.

(d) Running down Foreign Exchange Reserves

Financing of budget deficit by running down foreign exchange occurs by the time the Central Bank first purchases government debt on primary or secondary market (or simply grants a loan to the government) thereby injecting additional reserves to the economy and then trades foreign exchange reserve for domestic currency in order to offset the increase of monetary base and money supply.

As long as the foreign exchange reserves are available, government can confidently finance the deficit. However, when foreign exchange reserves dry up and reach the extent where the private sector believes to be critical, the result can be capital flight and the exchange rate depreciation that adds to inflationary pressures (Ouanes and Thakur, 1997). On the other hand, foreign exchange reserve depends on the amount of export value of the country. If the government does not have strong export sector, they should not use this way. That leads to rising of exchange rate (\$) in the market.

(e) Accumulation of Arrears

Many contemporary researchers argue that there exists a special form of dealing with budget deficit that in essence aims to hide it. In practice, the part of government spending gets deferred through the accumulation of arrears and is supposed to be disbursed later in coming fiscal years.

Government expenditure arrears, which cause delays in government payments to suppliers or creditors, have become an important fiscal issue in many transition economies. Arrears can lead to underestimates of spending and of the size of the fiscal problem facing. Since arrears are a form of forced deficit financing, the government's borrowing requirement is also understated, which leads to a distorted picture of the sources of credit expansion in the economy. While deficit financing can allow the government to absorb more of the economy's resources than would otherwise be possible, this initial effect is to offset as the rest of the economy responds by raising supplier's prices or holding back payments for taxes and fees. Unfortunately, expenditure arrears raise the cost of providing government services.

Arrears may also adversely affect the private sector's expectations about the future development of the economy. Economic agents may thus anticipate an increase in tax pressure, higher inflation, as well as overall deterioration of financial conditions. These negative expectations are likely to amplify the conventional "deficit-money-inflation" effects that we have already reviewed. Furthermore, the arrears accumulated in previous periods may pose a threat to be carried over to the future periods thus only postponing inflationary pressure.

2.5.1 Budget Deficit

The term "budget deficit or budget balance" appears regularly in news articles, in government policy documents –usually with the warning that it is very undesirable.

The measurement of budget balances also raises a host of conceptual and practical issues, which are compounded by the lack of uniformity in usage countries. For instance, the conventional budget deficit can be measured on cash basis or an accrual basis. In the first case, the deficit equalizes the difference between total cash flow expenditure and fiscal revenue. In the second case, the deficit reflects accrued income and spending flows regardless of whether they involve cash payment or not. Accumulation of arrears on payments or revenue is reflected by higher deficit when measured on an accrual basis compared with a cash-based measure (Agenor and Montiel, 1999).

According to economic literature and practices by institutions such as the World Bank and IMF, a couple of different ways to measure the conventional budget deficit exists. The most commonly accepted measure used by government world-wide to define the budget deficit is the resources utilized by the government in a fiscal year

that need to be financed after revenues were deducted from the expenditure. According to Tanzi in Blejer and Cheasty (1993), the conventional deficit can therefore, usually be defined as the difference between current revenues and current expenditures of government. It thus reflects the financing gap that needs to be closed by way of net lending, including lending from the Central Bank.

The World Bank defined the conventional budget deficit as the difference between expenditure items such as salaries and wages, expenditure on goods and services including capital expenditure, interest on public debt, transfers and subsidies, and revenue items including taxes, user charges, grants received, and profits of non-financial public enterprises and sale of assets.

The IMF stated in its 1980 Manual on Government Finance Statistics that the budget deficit equals the following fiscal deficit:

$$\text{Fiscal deficit} = \{(\text{revenue} + \text{grants}) - (\text{expenditure on goods and services} + \text{transfer}) - (\text{lending} - \text{repayments})\}.$$

The conventional budget deficit on each basis is defined as the difference between total government expenditure and revenue. It does not, however, provide a direct measure of monetary expansion nor the pressure as a result of increase of demand for financial instruments in the short-term markets. This definition of a conventional budget deficit is therefore, independent from the maturity schedules of outstanding domestic public debt and the reasons related to monetary policy. But it also poses a problem: public debt management and open market transactions can, in the end, greatly influence the size of the budget deficit.

The conventional budget deficit was originally developed in an effort to provide a measure of the government's contribution to aggregate demand in the economy and the lack of equilibrium on the current account of the deficit of payments, or to measure the crowding-out of the private sector in the financial markets. Another definition of the conventional budget deficit could be measurement of the extent to which government expenditures exceed government revenues without incurring new liabilities', as proposed by Leviathan in Blejer and Cheasty (1993).

Heller *et al.* (1986) described the conventional measurement of the deficit as a reflection of the current cash flow position of government-calculated by only using the cash receipts and cash expenditure in a given time period. Expenditure includes interest payments but exclude repayments of public debt.

Alternative indicators to measure the different interpretations of fiscal policy have increasingly been used by a large group of countries and international organizations such as the IMF, the World Bank, the OECD and the European Union (EU). Countries use different definitions of the budget deficit mainly because of convention, relationships with other levels of government and the structure of their budgets.

In summary, the conventional budget deficit can be regarded as the resources needed during a fiscal year after government income has been deducted from total expenditure. The latter expenditure total includes interest payments but not any amortization of public debt.

2.5.2 Relationship between Budget Deficit and Inflation

The government budget deficits impact the inflation because government gets debts from the central bank to lessen the problems. It implies that the central bank prints money for the government, that it is one of the main reasons which leads to inflation.

Higher government-budget deficits increase the higher-interest rate which then leads to lower domestic investment. Crowding-out effect of deficits will be eventually translated into a lower formation of capital which leads into a lower aggregate supply and a higher price. However, the impact of deficit on interest rates is still debatable.

The effect of wealth on deficits/debt financing. When deficits are financed by issuing treasury bonds, treasury bills and if these bondholders do not consider bonds and bills as future taxes, the wealth of nation is perceived to have gone up. A higher wealth effect increases the demand for goods and services and drives prices up. Tekin-Koru and Ozmen (2003) found that deficit financing leads to a higher growth of interest-bearing broad money, but not currency seignior age.

If the government deficit is financed by an increase in bond holdings by the public, there is no effect on the monetary base and hence on the money supply. But if the deficit is not financed by increased bond holdings by the public, the monetary base and money supply increase.

2.6 Review on Previous Evidences

Hondroyannis and Papapetrou (1994) used bivariate cointegrated systems to test the relationship between the government budget deficit and inflation by using annual data for Greece for the period 1960-2002. The Error Correction Model (ECM) points out that an increase of budget deficit results in an increase of the inflation rate.

Metin (1998) analysed the inflationary process in Turkey covering the period from 1950 -1988, using a general framework of sectoral relationships. He examined the relationship between the public sector deficit and inflation using single-equation model for inflation. He found that budget deficits significantly affect inflation in Turkey.

Darrat (2000) used an ECM to investigate that high budget deficits and inflationary consequences in Greece over the period 1957 – 1993. Empirical results found that deficit variable cause positive and statistically significant impact upon inflation in Greece.

S. O. Oladipo and T. O. Akinbobola (2011) investigated on Budget Deficit and Inflation in Nigeria: A Causal Relationship. This study provided empirical evidence on budget deficit operation in stimulating economic growth through inflation in Nigeria. Secondary data were used in this study. Granger Causality pair wise test was conducted in determining the causal relationship among the variables. The result showed those budget deficits have effects on inflation directly and indirectly through fluctuations in exchange rate in the Nigerian economy.

Erkam and Cetinkaya (2014) investigated the causality between budget deficits and inflation rate. Granger-causality tests are employed on monthly budget deficit and inflation data of Turkey which covers two sub-periods namely, 1987 – 2003 and 2005 – 2013. The results showed that positive significant causality running from budget deficits to inflation rate during the high inflation period (1987- 2003). But this causal link disappears during the low inflation period (2005-2013).

Oseni I. O and Ohunmuyiwa, M.S (2016) examined the direction of causality between fiscal policy and inflation volatility in Nigeria for the periods 1981 to 2014. This study used secondary quarterly time series data on fiscal deficit and consumer price index (measure of inflation rate). The data collected was analyzed using the Pairwise Granger Causality Test. This study showed that there is bi-directional causality between fiscal deficit and inflation volatility.

Table (2.1) Summary of Literature Reviews

Author	Country	Methods	Major Finding
Hondroyiannis and Papapetrou (1994)	Greece	Error Correction Model(ECM)	An increase of budget deficit results an increase of the inflation rate.
Metin (1998)	Turkey	Single-equation model	Budget deficit significantly effects on inflation.
Darrat (2000)	Greece	Error Correction Model (ECM)	Deficit variable cause positive and statistically significant impact upon inflation.
S. O. Oladipo and T. O. Akinbobola (2011)	Nigeria	Granger Causality	Budget deficits have effects on inflation directly and indirectly.
Erkam and Cetinkaya	Turkey	Granger Causality	Positive significant causality running from budget deficits to inflation rate during the high inflation period
Oseni I. O and Ogunmuyiwa, M. S (2016)	Nigeria	Granger Causality	There is bi-directional causality between fiscal deficit and inflation volatility.

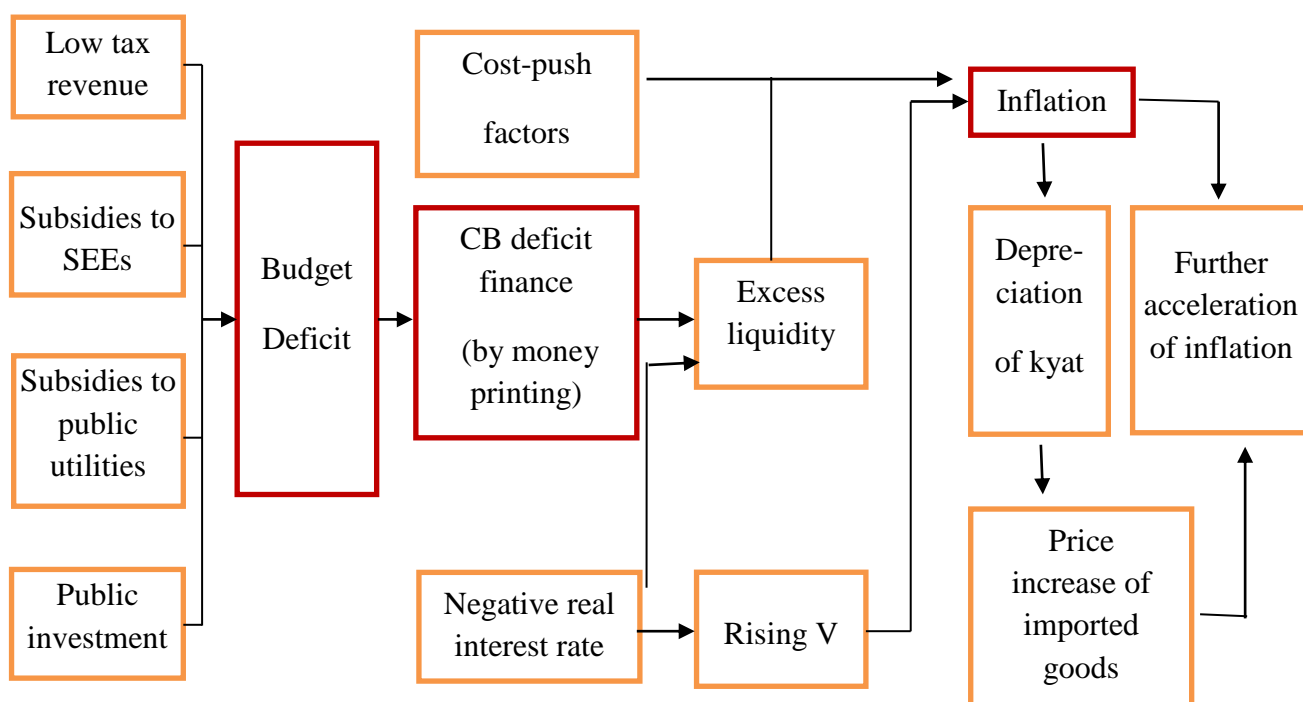
CHAPTER III

AN OVERVIEW OF RELATIONSHIP BETWEEN INFLATION AND BUDGET DEFICIT IN MYANMAR

3.1 The Inflationary Mechanism in Myanmar

According to the Figure 3.1, budget deficit is mainly caused by four kinds of factors in Myanmar, (i) Low tax revenue, (ii) Subsidies to State-owned Economic Enterprises (SEEs), (iii) Subsidies to public utilities and (iv) Public investment.

Figure (3.1) The Inflationary Mechanism in Myanmar



Source: Myat Thein (2009), Money Matters Essays on Money and Banking

Note: CB = Central Bank, V = Velocity

(i) Low tax revenues

Myanmar has the lowest tax revenues in ASEAN countries. Low tax revenues can be the cause increased budget deficit that leads to increase in inflation rate because government has to borrow money from Central Bank of Myanmar to expend. The Budget department in Myanmar has the policy of maximizing the tax rate in order

to minimize inflation if the budget deficit occurs. On the other hand, that policy directly increases the commodities prices in the market.

(ii) Subsidies to State Economic Enterprises (SEEs)

State Economic Enterprises (SEEs) is an additional cost in government expenditure. There is no need to transfer all SEEs to the private sector. Some SEEs are profitable and some are not. The government has to implement the maximizing of economics of scale for the state's vital manufacturing products.

(iii) Subsidies to Public Utilities

Public utilities are services provided by the government, such as supply of electricity, and road. These costs in government expenditure are a kind of burden, for budget deficit. On the other hand, the government has responsibility to provide vital public services.

(iv) Public Investment

Public Investment is the money that government spends on public services and goods such as education and health for the long run. As Myanmar is a developing country, it must invest in such services as education and health for the long run. On the other hand, it may not have direct impacts in the short run. Thus this depends on the government policy.

3.1.1 Periods of Political System and Economic System (1986 to 2016)

The political system in Myanmar during the period of 1974 – 1988 was depicted as the Burmese Way to Socialism under military rule with one party system (Burma Socialist Programme Party) and the economic system of Command Economy, Self-reliance and isolation. (Myat Thein, 2001). After taking power in September 1988, the State Law and Order Restoration Council (SLORC) adopted new economic policies that moved Myanmar away from its traditional closed economy. Following the years 1974 to 1988, the political system of Myanmar in the period of 1988-2010 was driven by the military regime called the State Law and Order Restoration Council (State Peace and Development Council) and its economic system was based on transition market – oriented economy. During the military regime, the Constitution of the Republic of the Union of Myanmar was formulated on 3rd September, 2007 and

this came into force on 29th May, 2008. Under the 2008 constitution the political system of the state is based on multi-party democracy and its economic system is based on market economy. As the Union Solidarity and Development Party(USDP) won the general election held in 2010, a former top-general U Thein Sein became the president of the state until 2015. After his presidency, U Htin Kyaw from the National League for Democracy (NLD) took the office with a landslide victory in the 2015 multi-party general election.

3.1.2 Political Pressure on Inflation in Myanmar (1986 – 2016)

Myanmar adopted the “Burmese Way to Socialism” from 1960 to 1988. In the 1989-90, the rice price had raised because of the liberalization of domestic rice market and these result lead to dynamic inflation (Fujita and Okamoto 2006).

The 1987 demonetization was indeed the catalyst for the political upheaval of 1988. In 1988, the uprisings and strikes took place because of the stagnation of the economy during Burma Socialist Programme Party era and the absence of significant economic development in Myanmar (Myat Thein, 2001, p.121). Some scholars see “a clear correlation between economic growth, money and political unrest” (Collignon 2001, p.88). After the demonstrations, the military took power and the situation of economy became slow down. At that time, the amount of budget deficit increased because of the mostly long-term borrowing money from other countries. Therefore, the military government controlled to become economic stability with printing money process.

When the State Law and Order Restoration Council (SLORC) took over the reins of government, the country was for all practical purposes almost bankrupt. U Myat Thein (2001) pointed out that they did a great job in that endeavor although some of the measures might have done irreparable damage such as the institution authorized to issue notes and currency was put under the control of the army may be regarded as an ill-advised decision that perhaps has done irreparable damage to Myanmar. Those effects caused decreasing amount of GDP growth and the government faced with the budget deficit. The long term high inflation and fiscal deficit because of monetization of fiscal deficit had been root problem in Myanmar.

On the political front, transparency is an indispensable attribute of central banks accountability (Ortiz, 2009), especially where central banks are independent and monetary policy implementation is not subject to democratic scrutiny by the

legislature. Correcting this “democratic deficit” is important for securing public support for policy actions which may entail short-run costs for longer-run gain (Minegishi & Cournède, 2009).

The Deputy Governor of the CBM presented that the Central Bank’s independence is the degree of freedom given to the Central Bank on the monetary policy without political interference. Independence from the fiscal authority is particularly important as a protection against monetization of debt. Political control can lead to higher inflation. Politicians often have a short-term perspective driven by the need to impress voters before the next election. This may mean sacrificing a stable price level to achieve immediate improvements in unemployment, growth or house mortgage rates. The populace, also often short-sighted, see the immediate improvement, not knowing the long terms impacts. It is only a year or so later that people suffer the effects of economic stability. Politically insulated Central Bank is more likely to take decisions which are beneficial over the long term even if they cause a little pain now. (Soe Thein, 2018)

Actually, under the Central Bank of Myanmar Law (2013)², CBM can provide loans by following objectives:

The Central Bank may provide loans and advances to the Union Government with the approval of Pyidaungsu Hluttaw. Such provision of loans and advances shall be in accordance with the following conditions:

- (a) The terms and conditions for loan and advance shall be prescribed from time to time by consultation between the Ministry and Central Bank;
- (b) Such loans and advances shall be guaranteed by interest-bearing negotiable instruments of government securities with a maximum term of 92 days delivered by the Ministry to the Central Bank (section 91)

According to the CBM law (2013), the Union Government needs Union Budget Bill proposal approval by the Union Parliament (Pyidaungsu Hluttaw). On the other hand, the determinations of submission process of the Union Budget Bill by the Constitution of the Republic of the Union of Myanmar (2008) following objectives:-

- (a) The President or the person assigned by him, on behalf of the Union Government, shall submit the Union Budget Bill to the Pyidaungsu Hluttaw.

² The English language of the Central Bank of Myanmar Law (2013) uploaded at CBM website and this is translated from official Burmese version.

(b) The following matters included in the Union Budget Bill shall be discussed at the Pyidaungsu Hluttaw but not refused or curtailed:

- (i) Salary and allowance of heads and Members of the Union level organizations formed under the Constitution and expenditures of those organizations;
- (ii) Debts for which the Union is liable and expenses relating to the debts, and other expenses relating to the loans taken out by the Union;
- (iii) Expenditures required to satisfy judgment, order, decree of any Court or Tribunal;
- (iv) Other expenditures which are to be charged by any existing law or any international treaty (section 103)³.

According to the law (section 103), union government can pass the submitting process of the Union Budget Bill without Pyidaungsu Hluttaw approval. Thus, even the Central Bank of Myanmar Law (2013) giving more power to Central Bank of Myanmar than 1990 CBM Law, but union government still has power to get loans from CBM through Union Parliament because of the 2008 Constitution.

3.1.3 Role of Treasury Bill, Treasury Bonds and these relations to Inflation in Myanmar

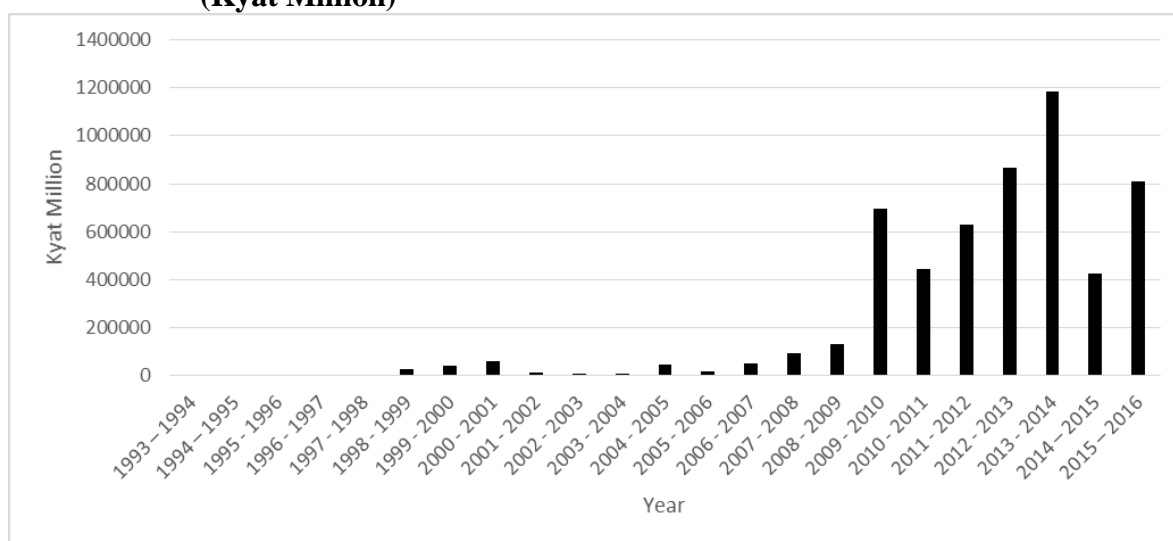
In order to do invest for the public, Myanmar started selling Treasury Bonds since 1993. In 2012, it has also started selling the two-year treasury bonds. The role of treasury bonds is to solve the government's deficit by utilizing public's money through the method of selling the bonds. According to the following Figures (3.2 & 3.3), there has increased in selling and buying bonds since 2009.

To stabilize the inflation rate, CBM tries to put the total reserve money and the separate reserve money into their targets amount framework. The inflation rate in Myanmar averaged 9.99 percent in 2015-2016 financial year, 6.81 percent in 2016-2017 financial year, and dropped to 4.61 percent on December 2017. The Governor of the CBM stated that one of the main reason for inflation is that CBM has to print more money to fill in the government spending. To reduce that, CBM and the Ministry of Planning and Finance have cooperated to hold monthly auctions for

³ Constitution of the Republic of the Union of Myanmar (2008), Chapter IV, Legislature, The Pyidaungsu Hluttaw, Submission of the Union Budget Bill, section 103.

treasury bills and treasury bonds to private and state-owned banks (Kyaw Kyaw Maung, 2018).

Figure (3.2) Government Treasury Bonds 1993 – 1994 to 2015 – 2016 (Kyat Million)



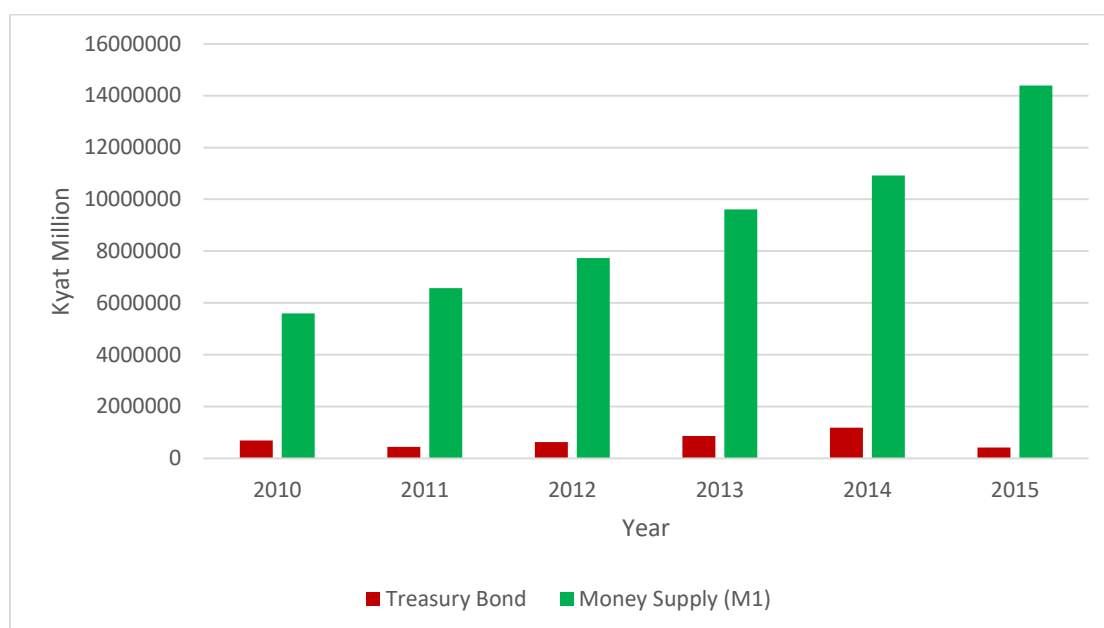
Note: Treasury Bonds include two-year, three-year and five year bonds.

Source: Statistical Yearbook (Various Issues)

Treasury bills and bonds therefore play a big role in controlling the inflation rate. According to Figures (3.2 & 3.3), the Treasury Bills and Treasury Bonds released by the Central Bank are not significantly strong enough to be used as monetary tool. This occurs because their defined interest rate is lower than the average deposit interest rate in private banks. Private domestic banks mainly buy the treasury bonds and treasury bills more than public because of the interest rate. Treasury bills and bonds are one of the effective monetary tools but the difference of interest rate is the key problem.

Central Bank of Myanmar published three types of Treasury bonds and one type of Treasury bill. There are three months Treasury bill with interest rate 4 percent, two year Treasury bond with interest rate 8.75 percent, Three Year Treasury bond with interest rate 9 percent and five year Treasury bond with interest rate 9.5 percent in 2017. The lending interest rate is 13 percent and saving account interest rate is 10 percent. In addition, people do not purchase Treasury bill and bonds from Central Bank, because the interest rate and liquidity of private banks are more than the Central Bank. IMF (2015) also advised Myanmar to allow the interest rate at Treasury bill auction to rise.

Figure (3.3) Comparison of Treasury Bonds and Money Supply (M1) (2010 to 2015)



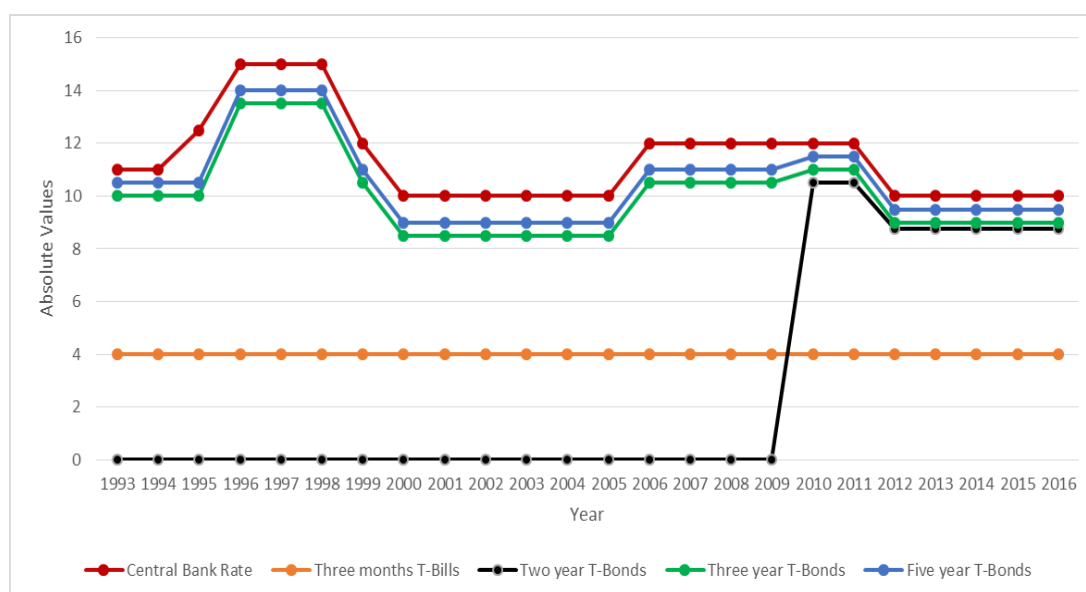
Source: Statistical Yearbook (Various Issues)

Note: Money Supply and Treasury bonds are not available for time series data.

Another possibility is that the public have no enough awareness to buy these treasury bills and treasury bonds. And there may be many difficulties in purchase and sale for the public because these activities can only be done in Myanmar Economic Bank (MEB).⁴ Thus there are limitations in selling and purchasing treasury bonds and bills that are distributed by auction method in Inter-Bank market and public. Then the fact that this tool does not work well means lack of a weapon to fight the inflation. The Governor of the CBM stated that the Central Bank will review its interest rate policy based on inflation and the fiscal deficit (Kyaw Kyaw Maung, 2018).

⁴ Myanmar Economic Bank (MEB), which was established on 2 April 1976. MEB opened 307 bank branches, 14 State and Divisional Banking Offices and 6 Head office Departments across the country.

**Figure (3.4) Interest Rates of Treasury Bill and Treasury Bonds 1986 to 2016
(Percent per annum)**



Note: The Central Bank of Myanmar has issued two-years treasury bonds since 1st January 2010.

Source: Statistical Yearbook (Various Issues)

CBM stated that Government Treasury Bill Auction has been conducted since January 2015 to lessen the inflationary pressure due to the direct financing of budget deficit by Central Bank of Myanmar as well as to facilitate effective public debt management and market determined interest rate on government securities.

According to the Figure (3.4), the interest rate for three months treasury bills didn't change since the 1993 with 4 percent. But the average interest rate of treasury bonds increased 4 percent in 1996, decreased 4 percent in 1999 after the period of Asian Financial Crisis. And it continued to decrease average 2 percent in 2000. At the period of recovery stage of bank crisis in Myanmar, CBM raised average 4 percent of treasury bonds' interest rate and reduced average 2 percent again in 2012 till 2016.

3.1.4 Effect of Hidden Factors on Inflation

Besides the fact that increase in budget deficit and money supply causes inflation, the expansions in the import cost and currency exchange rate are additional factors that lead to inflation for a country in which economy mainly depends on imports. Furthermore, the issues on inflation may be very complex and it is difficult to give 100 percent reliable answer of which factors are the root causes of inflation. At the same time, printing money to solve the problems in huge budget deficit causes the

informal inflation which also causes the Demand Pull Inflation. This means that buying goods and services by using big amount of money. Apart from that, the Cost Push Inflation can occur due to the unnecessary costs called indirect costs in Myanmar.

On the other hand, in legislating minimum wage in Myanmar, the government passes the legislation only for private sector but not for government sector because enterprises in Myanmar control of speculative motive while increasing wage for government (public) servants.

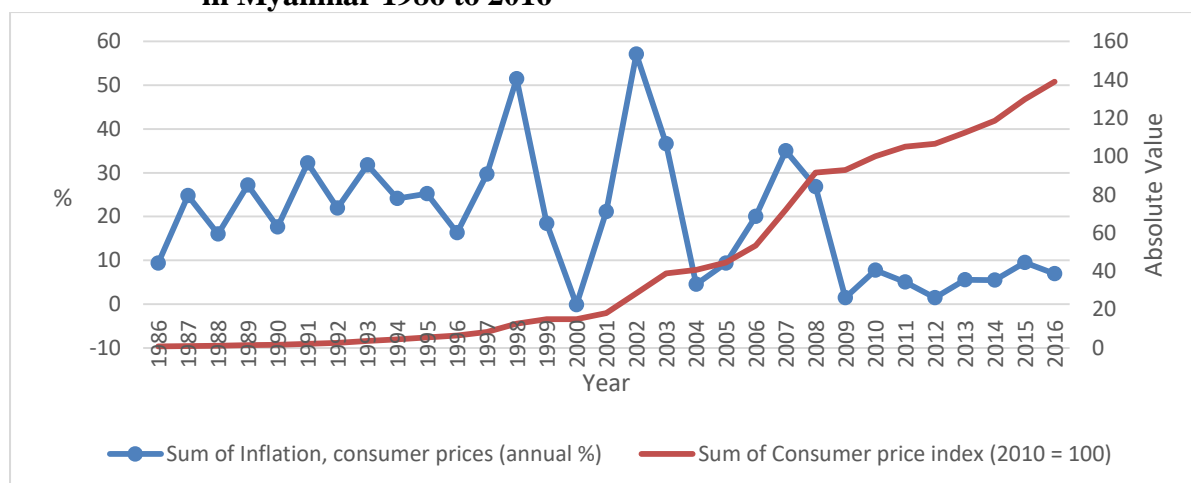
The impact of nature disasters such as Cyclone Nargis in 2008 and Komen 2015 are significantly increasing the inflationary pressure.

3.2 An Overview on Inflation Rate in Myanmar 1986 to 2016

Burma Socialist Programme Party government announced the demonetization of K45 and K90 in 1987⁵ to cut inflation and black money in the market. According to the Figure 3.5, the inflation rate from 1987 to 1995 averaged around 25 percent per year. The average inflation rate from 1994 to 2002 was 30.5 percent, mainly due to the monetization of the fiscal deficit. (Fumiharumieno, 2009). Between the period of 1996 to 1998, inflation rate increased 25 percent because of Asian Financial Crisis and dropped off nearly 50 percent from 1998 to 2000. While the worsening fiscal conditions included chronic inflation through the monetization of the fiscal deficit, the mechanism was temporarily in the late 1990s, when the emerging private banking sector started to absorb the treasury bonds in 1993. After 2001, inflation surged the real exchange depreciated. The local asset markets appeared prosperous until 2002, but fell subject to panic during the banking crisis of February 2003; the pausing of multiplier effect of banks and informal financial enterprises caused rapidly falling inflation in 2003 bank crisis. The period of 2004 to 2007 is recovery stage of the Myanmar economy but during 2008 the Global Financial Crisis, inflation decreased dramatically, by an average 30percent. Therefore, in the last part of 2009, inflation rate became both stable and low. The period of 2010s is the most stable and low inflation rate period in Myanmar. The inflation rate in Myanmar, during the period of 2010s, is also both stable and low.

⁵ Many regarded the demonetization of 1964, 1985, and 1987 as having destroyed the “banking habits” of Myanmar households and arrested the development of banking in Myanmar (Myat Thein, 2001).

Figure (3.5) Inflation (consumer price, annual %) and Consumer Prices Index in Myanmar 1986 to 2016



Source: World Bank Dataset (2017)

According to Figure (3.5), Consumer Price Index (CPI) was stable in Myanmar from 1986 to 1990s. But after the Asian Financial Crisis (1997) CPI started tremendously to increase till 1998 and significantly fell again till 2000. The period around 2000s was instable because of bank crisis faced in Myanmar in 2003. The period of 2008 Global Financial Crisis, CPI rate was stage of slumpflation. During the Fiscal Year (FY) 2012-2013, CBM explained that the inflation rate had gradually climbed up, because of the price rise for imported items such as fuel, medicine etc. And during the FY 2013-2014, CBM summarized the average annual rate of inflation as increasing 5.72 percent due to exchange rate of depreciation pressure increase in electricity tariff and real estate price together with global oil price increase. CBM analyzed that the increasing 0.18 percent of annual rate of inflation during FY 2014-2015 that moderate due to the exchange rate depreciation, property price increased and increased in electricity charges.⁶

The Governor of the CBM statement that after the slowdown of economic growth in the first half of 2016 mainly caused by the heavy flood in Mid-2015 which deteriorated agricultural output and declined investment in oil and gas sector. Inflation had reached at double digit in November 2015 caused by money supply growth

⁶ According to the Central Bank of Myanmar Law -2013, section 36 (d), After submitting the annual report sub-section (c), the Central Bank shall publish it for public information. According to this law CBM need to publish annual report annually by law but CBM's annual report (2014-2015) is the last issue at April 2018.

resulting from Central Bank of Myanmar's purchase of government securities and the increase in food and rental prices (Kyaw Kyaw Maung, 2017).

Another problem is that CPI has been increasing tremendously year by year; the question is why the inflation rate is moving down. The possible answer is that price of food items, which account for 59 percent of the new CPI basket but non-food component of CPI items price and service prices are averagely stable. IMF (2016) also explained that the higher inflation rates appear to have mainly resulted from rising food prices, which represented more than two-thirds of the CPI basket. That is one of the reasons why prices of foods in the market are high, but low rated in the data. Therefore, there are existing problems in CPI calculation method and assumption of basket items.

In fact, Myanmar may be facing both the Demand Pull Inflation and Cost Push Inflation, occurring at the same time besides other factors.

3.3 Comparison of Inflation Rates between ASEAN Countries within 1986 to 2016

The Asian Financial Crisis on 2 July 1997 when the Thailand government burdened with a huge foreign debt decided to float its baht after currency speculators had been attacking the country's foreign exchange reserves. This monetary shift was aimed at stimulating export revenues but proved to be in vain. It soon led to a contagion effect in other Asian countries as foreign investors who had been pouring money into the "Asian Economic Miracle countries" since a decade prior to 1997 – lost confidence in Asian markets and dumped Asian currencies and assets as quickly as possible.

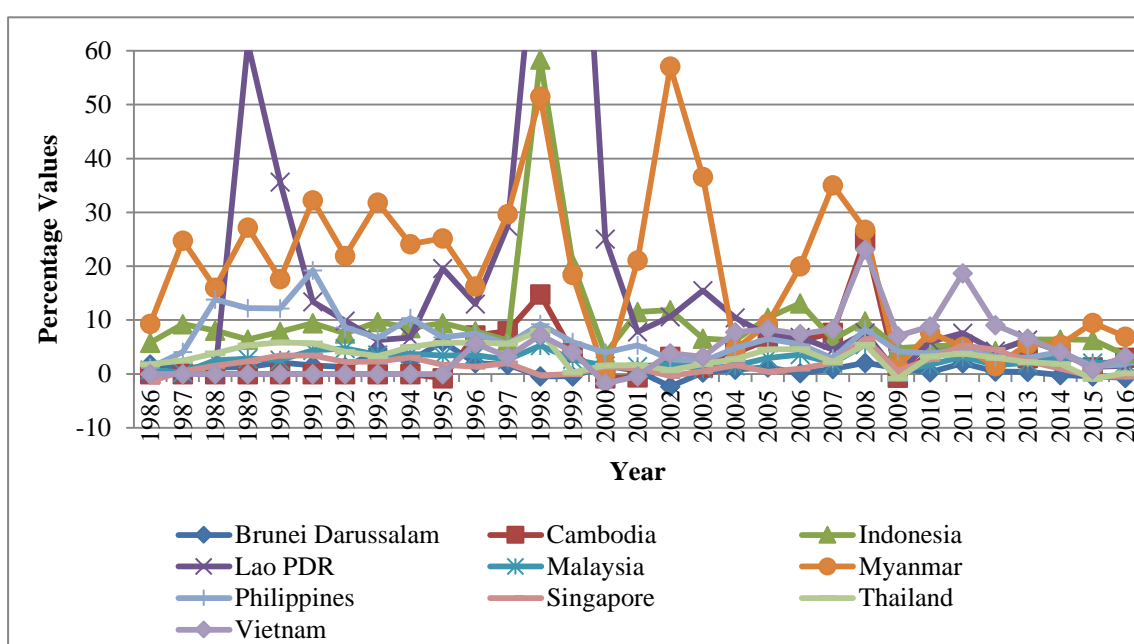
As in Figure (3.6), the period of 1997s, most of the ASEAN countries had high inflation for their countries because of the Asian Financial Crisis. Among them, Lao PDR had the highest inflation rate with 125% in 1999, Indonesia had 98% in 1998 and Myanmar had 51% in 1998. Other ASEAN countries each also faced their countries' highest rate in this period.

Zamorski, M. J., & Lee, M. (2015) suggested that one of the triggers for the Global Financial Crisis was the sudden cessation of interbank lending among large global banks. The requirements are that central banks, regulators and governmental officials need to act very quickly even if the situation is short of complete

information. Some interventions proved to be quite controversial due to the moral hazard they posed and, in some cases, taxpayers' funds were put at substantial risk.

After that, the global financial crisis began in 2007 with a crisis in the subprime mortgage market in the United States. In the period of 2007 global financial crisis, Myanmar, Cambodia and Lao PDR got highest inflation rate in ASEAN countries.

Figure (3.6) Comparison of Inflation (Consumer Prices) within ASEAN Countries, from 1986 to 2016(Annual %)



Noted: *Cambodia inflation data is not available from 1985 to 1994.

**Lao PDR inflation data is not available from 1985 to 1988.

***Vietnam inflation data is not available from 1985 to 1995.

Source: World Bank Dataset (Various Issues)

According to the table (3.1), Myanmar still has highest inflation rate of 9.5percent among ASEAN countries and Indonesia has the second highest inflation rate of 6.4percent in 2015. Cambodia, Lao, Malaysia and Philippines in the second lowest group of inflation rates with an average 1.5 percent in 2015. Brunei Darussalam, Singapore, Thailand and Vietnam countries had the lowest inflation rates among ASEAN countries in 2015.

Table (3.1) Inflation, Consumer Prices (Annual %) in ASEAN Countries 2015 and 2016

Year	Brunei Darussalam	Cam- bodia	Indo- nesia	Lao PDR	Malaysia	Myanmar	Philip- pines	Singa- pore	Thai- land	Vietnam
2015	-0.4	1.2	6.4	1.3	2.1	9.5	1.4	-0.5	-0.9	0.9
2016	-0.7	3.0	3.5	1.5	2.1	7.0	1.8	-0.5	0.2	3.2

Source: World Bank Dataset 2017 (Various Issues)

Again, Myanmar experienced the highest inflation rate (7 percent) in ASEAN in 2016. Cambodia, Indonesia and Vietnam followed with the second highest inflation rate with an average of 3.2 percent. At the time Lao, Malaysia and Philippines faced the second lowest inflation rate in ASEAN averaging 1.8 percent at 2016. And Brunei Darussalam, Singapore and Thailand were the lowest inflation rate group in ASEAN in 2016.

3.4 Summary of State Budget in Myanmar

In Myanmar, the fiscal year includes twelve months starting from April 1st to March 31st. But NLD government changed the period budget year (April 1st to March 31st) to start October 1 and end September 30 because of that construction of key infrastructure projects will not be hampered by the onset of the rainy season. The proposal to change the budget year was approved during a cabinet meeting on September 7, 2017.

In Myanmar, the State Budget is divided into six parts with four main segments of Current Account, Capital Account, Financial Account and Receipts. All of these segments are divided into receipts and expenditures. The six main parts are as follows;

- (i) State Administrative Organizations (SAOs)
- (ii) State Economic Enterprises (SEEs)
- (iii) Development Committees (DCs)
- (iv) Nay Pyi Taw Council
- (v) Nay Pyi Taw Development Committee and
- (vi) Social Security of Union Ministry and Department (Undertaken Outside the Union Fund).

Central Statistical Organization added new accounts of Nay Pyi Taw Council, Nay Pyi Taw Development Committee and Social Security of Union Ministry and Department (Undertaken Outside the Union Fund) in the State Budget in 2013 – 2014.

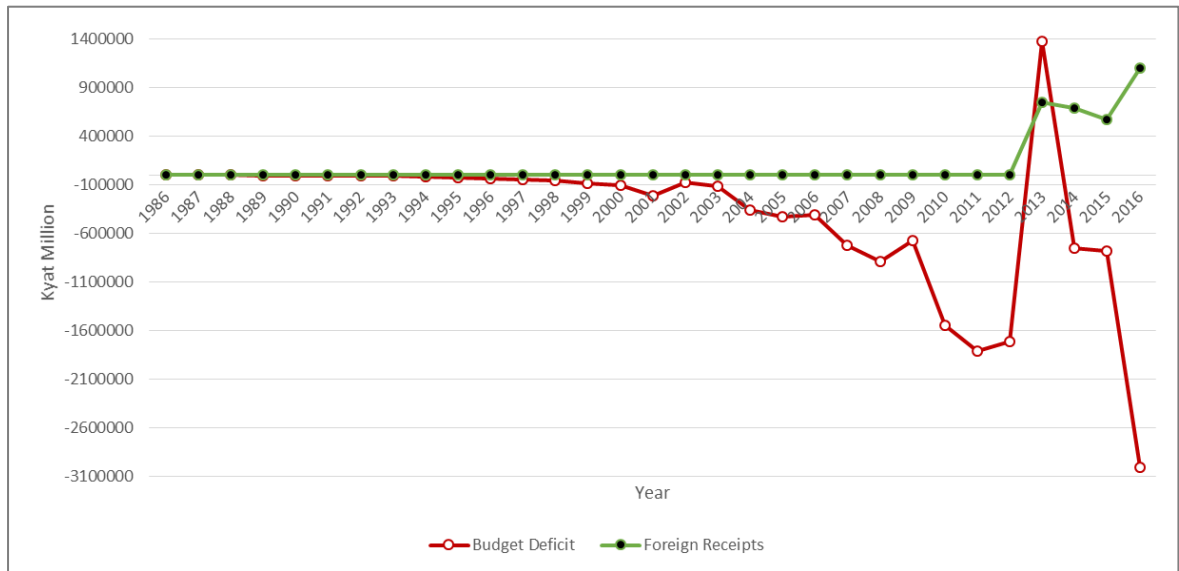
U Myat Thein (2009) pointed out that many scholars believe budget deficits to be the root cause of inflation in developing countries. Myanmar faced long term budget deficit problem for many years. Fischer and Easterly (1990) has this to say. Milton Friedman's famous statement that inflation is always and everywhere a monetary phenomenon is correct. However, governments do not print money at a rapid rate out of a clear blue sky. They generally print money to cover their budget deficit. Rapid money growth is conceivable without an underlying fiscal imbalance, but is unlikely. Thus rapid inflation is almost always a fiscal phenomenon.

The World Bank (1988) explained that "Excessive reliance on money creation is particularly risky if inflation worsens the deficits because expenditures keep pace with rising prices while revenues do not". This means that more money creation still becomes necessary – further worsening the inflationary spiral.

Professor Jeffrey Sachs (1997) pointed out with two examples on this issue, quasi-fiscal deficits are (1) extra-budgetary funds for social and regional spending, and (2) loans by the central bank and other state banks to state owned enterprises. Thus, the money supply may grow excessively as a result of three main factors: budget deficits, extra-budgetary expenditures and loans from the state banking system.

In Myanmar, there are three kinds of factor effect growth of money supply. Between the years 1986 to 2016, most of the years experienced budget deficit. Government had to expend according to the country's situation with borrowing from the Central Bank which then had to print money. By looking at the following Figure 3.7, it can be seen that Myanmar had budget deficit during the years 1986 to 2016, except the year of 2012-2013 which had budget surpluses due to the high degree of international interests in democratic transition period. At that period of 2012-2013, Myanmar received a lot of foreign receipts as shown in Figure (3.7).

Figure (3.7) Budget Deficit and Foreign Receipts in Myanmar 1986 to 2016 (Kyat Million)



Note: Foreign receipts includes foreign loans, foreign grants and foreign aids

Source: Statistical Yearbook (Various Issues)

Comparing to USDP government, the NLD government received foreign receipts more than USDP government did after it has taken the office officially on March, 2016. But budget deficit of the year 2015 is (-782129.4) Kyat Million and increase one digit number (284% Change) in 2016 with (-3005043) Kyat Million. The main point is that NLD government faced high budget deficit in 2016. That is marked as the highest budget deficit point in Myanmar during the years of 1986 to 2016.

3.5 Comparison of Budget Deficit and Money Supply

Budget deficit can be caused by increasing money supply. Money Supply is determined not only by the Central Bank but also by the behavior of households and banks. Money supply includes both currency in the hands of the public and deposits at banks that households can use on demand for transactions, such as checking account deposits. That is, letting M denote the money supply, currency (C), and demand deposits (D), we can write

$$\text{Money Supply} = \text{Currency} + \text{Demand Deposits}$$

$$M = C + D$$

In developed countries, people effectively understand about money market but reversely, people from developing countries cannot use banking system effectively. Money supply may change depending on the economic situation. On the other hand, economic situation may change the money supply. If money supply and production

increasing together can achieve economic growth. If production does not increase money supply with increase in there will be just inflation in the country.

According to table (3.2), money supply (M1) increased year by year. One digit of money supply increase, 98323 kyat million to 131800 kyat million was from 1994 to 1995. In periods of the 1990s, increase money supply slightly, but dramatically increased from 176865 kyat million to 223730 kyat million during 1996 to 1997, because of the Asian Financial Crisis (1997). Money supply significantly increased one digit from 2013(9610044 Kyat Million) to 2014 (10918078 kyat million), the possible reason is Myanmar received tremendous amount of foreign receipts at 2012-2013. The money supply in 2015 is 14395987 kyat million and 14496433 kyat million in 2016.

Table (3.2) Money Supply (M1) 1986 – 2016
{Kyat Million}

Year	Money Supply (M1) *
1986	16404
1987	9713
1988	15937
1989	21536
1990	32333
1991	43737
1992	60182
1993	74982
1994	98323
1995	131800
1996	176865
1997	223730
1998	275247
1999	373999
2000	NA
2001	NA
2002	NA
2003	NA
2004	NA
2005	NA
2006	NA
2007	NA
2008	NA
2009	NA
2010	5591878
2011	6572219
2012	7735345
2013	9610044
2014	10918078
2015	14395987
2016	14496433

Note: *Money supply data are not available (NA) from 2000 to 2009.

1. Money Supply consists of currency in circulation and demand deposits.
2. Demand deposits exclude government deposits.

Source: Statistical Yearbook (Various Issues)

Another reason is that high money supply (M2)⁷ growth to finance budget deficits is believed to be the main cause of inflationary pressures in Myanmar (U Myint, 2010). U Myint (2010) identified four kinds of other inflationary pressure in Myanmar since 2004, (i) rising of official gasoline prices by 700% in October 2005, (ii) shift of capital city to Nay Pyi Taw in November 2005, (iii) upward adjustment of salaries of public employees by 500% for low level employees and over 1200% for top officials beginning in April 2006 and (iv) Cyclone Nargis in May 2008, which caused severe loss of life, livelihoods and property. Nargis not only affected production but increased government expenditures to meet relief and rehabilitation costs.

After 2009, money supply increased tremendously till 2015. There is much evidence that the inflation is consecutively increasing from 2009 on even though there is no data for the years of 2000-2009.

3.6 Deficit Accounts of State Budget in Myanmar

Generally, state budget includes three accounts which are (a) Current Account, (b) Capital Account and (c) Financial Account.

(a) The Current Account⁸ can be categorized into two types such as the Current Revenue and Current Expenditure. The Current Revenue is as following;

1. Revenues gained from sales and services, fines and other current revenue,
2. Revenues collected by certain governmental departments and organizations in accordance with existing laws,
3. Interests gained from whether domestic or international firms and
4. International Assistance Fund for the Current Expenditure.

Whereas the Current Expenditure is as following;

1. Costs of annual payments, transportation costs, costs of maintenance and services, transfers of expenditure, and hosting costs and other expenditures,
2. Costs for pensions and bonus
3. Costs of buying raw materials for State Owned Enterprises, Costs of production, costs of administration and research, costs of distribution, costs of commercial tax and income tax or fund transferred to State's Budget,

⁷ M1: cash in circulation plus demand deposits (money held in checking accounts), plus travelers checks, plus "other" checkable deposits (interest – bearing checking accounts), M2: M1 + savings deposits and money market deposit accounts, small time deposits, and money market funds.

⁸ This is translated from official Burmese version.

4. Costs subscribed annually to international associations and organizations and general grants to domestic or inter-governmental organizations such as to states and regions and municipalities and
5. Interests for Treasury Bills and Treasury Bonds and interests for external debt.

(b) Capital Account can be divided into Capital Revenue and Capital Expenditure.

The Capital Revenue is as following;

1. Revenue gained by selling capital goods, other fund received from the dissolved departments and revenue rewarded from capital expenditure.

Whereas the Capital Expenditure is as following;

1. Expenditures for planning projects (e.g. factory, school, hospital, building infrastructure, roads and dams)
2. Maintenance costs for existing roads, buildings and dams
3. Costs for buying machinery materials such as cars, airplanes, ships, trains
4. Costs of office materials, furniture, cars and other office expenses and
5. Costs of service charge, compensation costs for land and other expense.

(c) The Financial Account includes the Financial Revenue and Financial Expenditure.

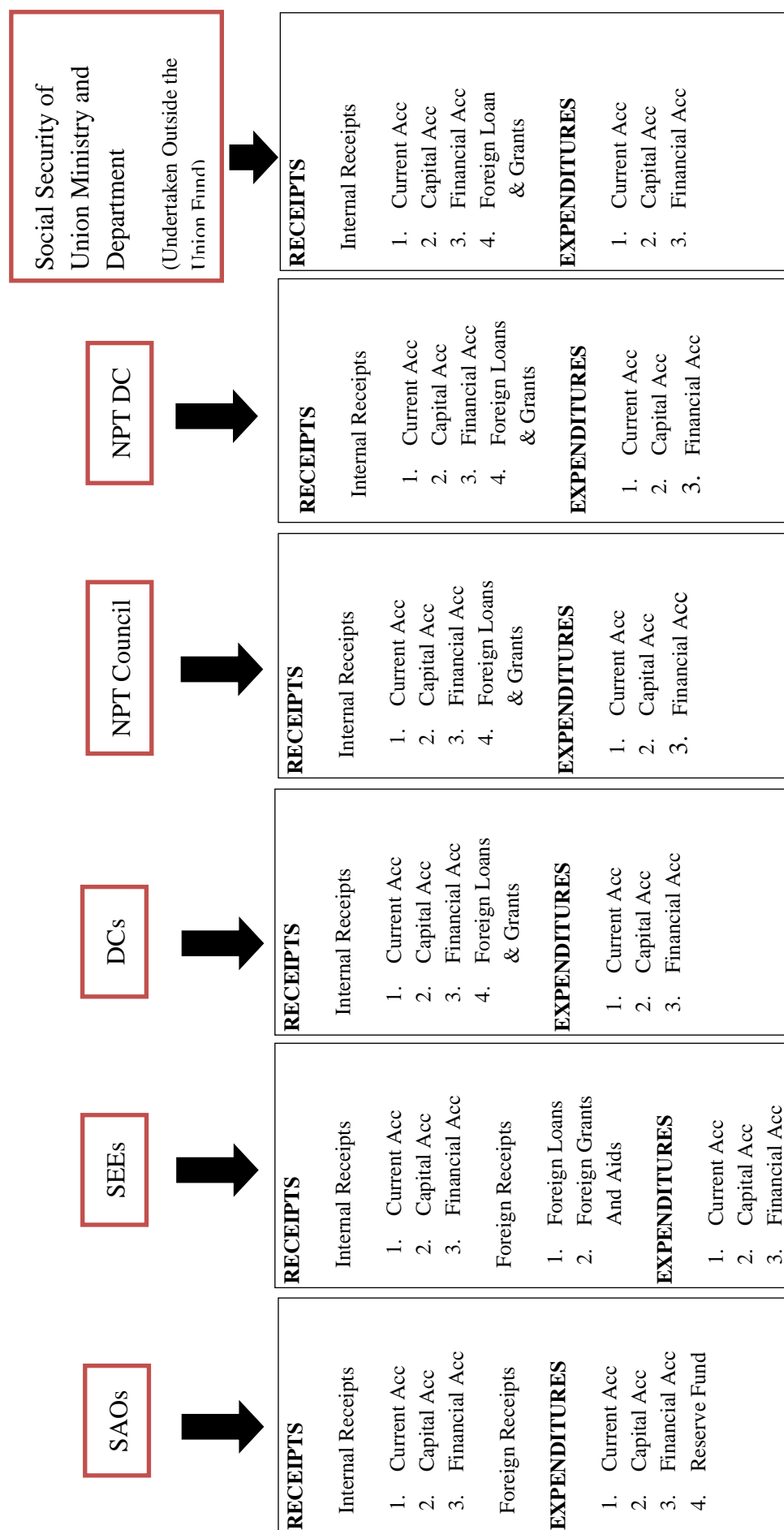
The Financial Revenue is as following;

1. Revenue gained from Interest and investment of domestic firms
2. Revenue gained from Interest and investment of international firms
3. Revenue gained from capital investment in organizations and
4. Savings.

The Financial Expenditure is as following;

1. Expenditure for redeeming domestic debts,
2. Expenditure for redeeming international debts,
3. Expenditure for Capital Investment in Financial Organizations and
4. Expenditure for payment on savings through saving note.

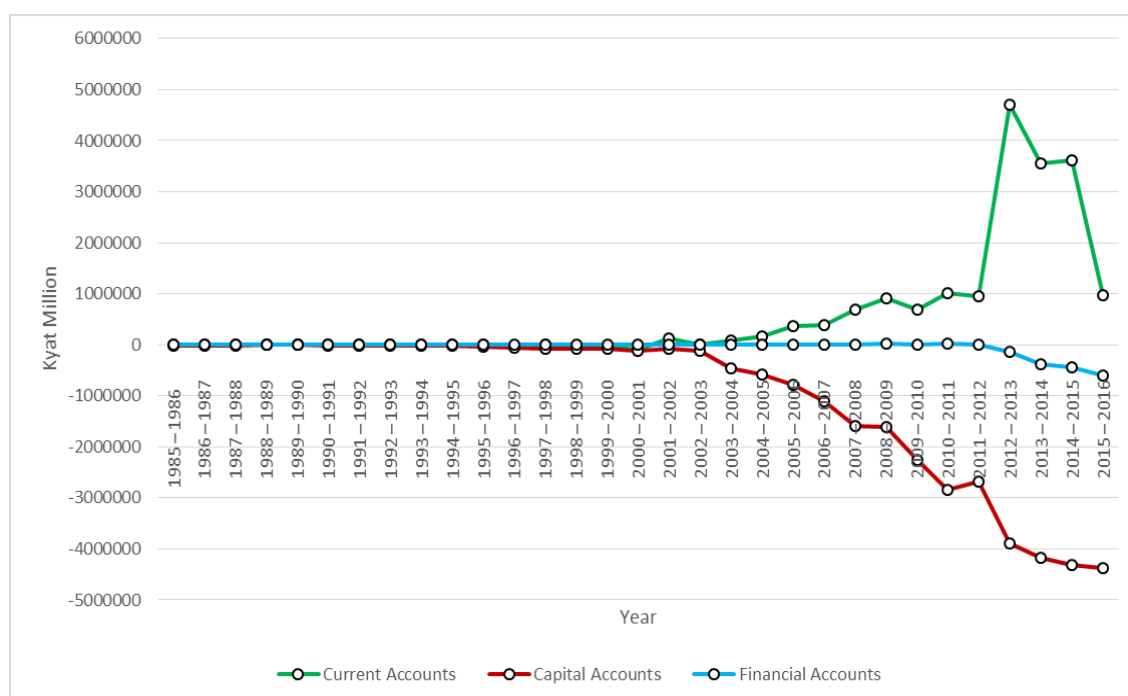
Figure (3.8) Organization structure of summary of the State Budget



Note: SEEs include under taken outside the union fund, NPT = Nay Pyi Taw, DC = Development Committee, Acc = Account

Source: Statistical Yearbook (Various Issues)

Figure (3.9) Balance of SAOs, SEEs and DCs (Current Account, Capital Account and Financial Account)

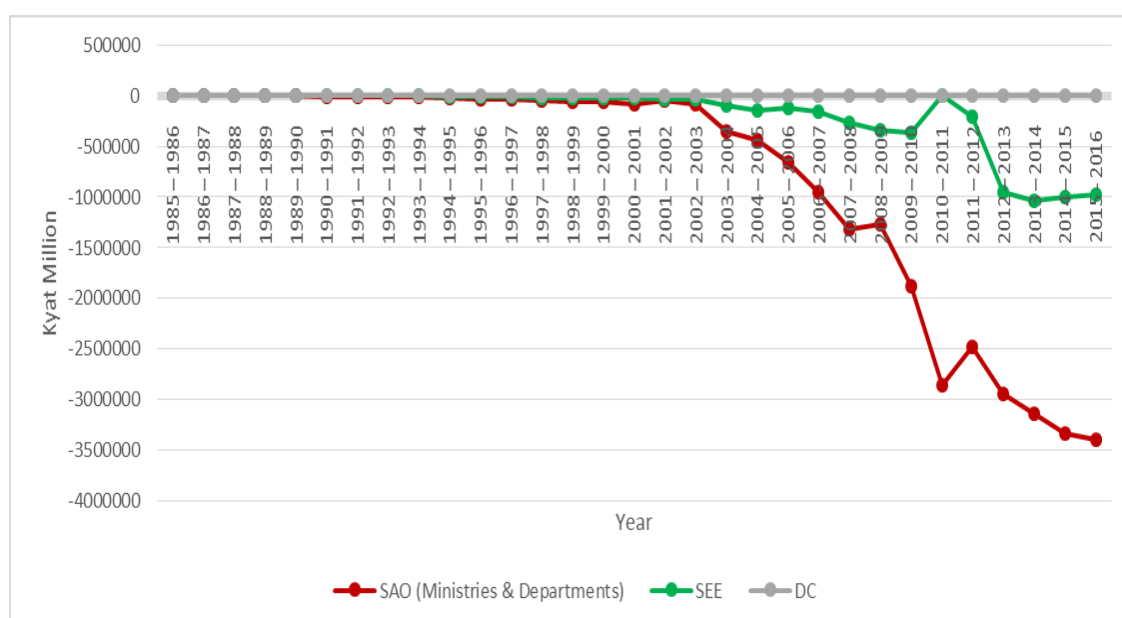


Source: Statistical Yearbook (Various Issues)

According to Figure (3.9), there are six particular accounts in Summary of State Budget issued by the Central Statistical Organization, mainly the Current Account, Capital Account and Financial Account. The nature and definition of these accounts are different. The Capital Account, one of the main accounts, in Myanmar faces Deficit. In the Account, budget deficits increased from the years of 2003-2004 to 2008-2009. Further increasing tremendously from the years of 2012-2013 to 2015-2016.

During the fiscal year of 2012-2013, the budget surpluses occurred in the Current Account because Myanmar received international assistance as a reward for having successfully held the Multi-party Democratic General Election in 2010. However, in Current Account, Budget Surpluses significantly decreased in the year 2015-2016; meanwhile, Budget Deficit dramatically increased in the Capital Account.

Figure (3.10) Capital Accounts Balance of SAOs, SEEs and DCs



Source: Statistical Yearbook (Various Issues)

As shown in the above Figure (3.9 & 3.10), Budget deficit mainly occurs in Capital Account according to CSO statistics. To study the three main particular accounts namely State Administrative Organizations (SAOs), State Economic Enterprises (SEEs) and Development Committees (DCs), is crucial. According to this study, budget deficits mainly occur in the Capital Account in SAOs particular among others, meaning the government expends too much in building infrastructure, maintenance in existing infrastructures and office costs that lead to budget deficit in Myanmar from 1986 to 2016. In conclusion, Budget Deficit occurs in Capital account of SAOs in Myanmar.

3.7 A Comparison on Inflation and Budget Deficit from 1986 to 2016

Myanmar has a different political and economic backgrounds that is reason to study with different era. The periods of 1986 to 1988 are Socialist regime, 1988 to 2000 is Military rule regime (SLORC/SPDC), 2001 to 2010 is Military rule regime (SPDC) and from 2010 to 2015 is multi-party democratic regime. This study classified three groups which are as follows;

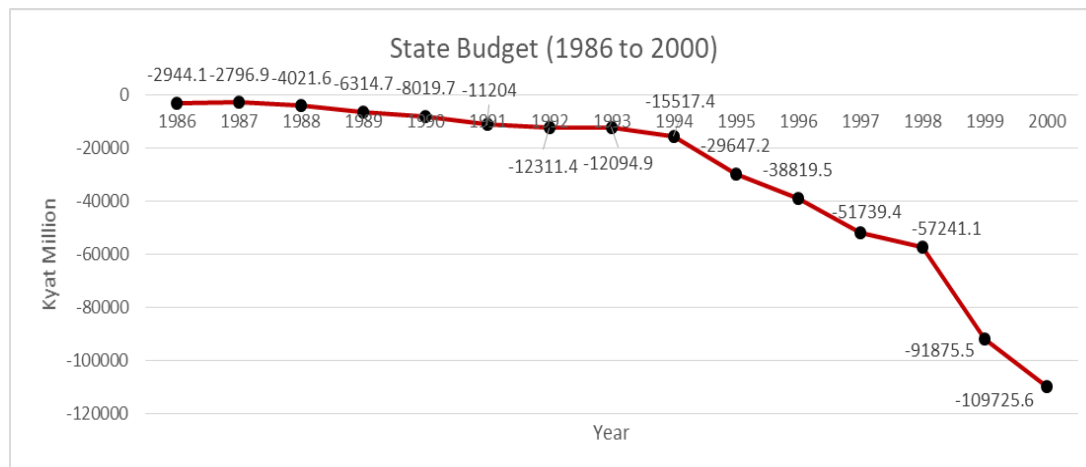
- Inflation and budget deficit from 1986 to 2000
- Inflation and budget deficit from 2001 to 2010
- Inflation and budget deficit from 2011 to 2016

(a) Inflation and Budget Deficit from 1986 to 2000

The Political system of the 1986 to 1988 is socialist and the 1988 to 2000 is military rule (SLORC/SPDC). The Economic system of 1986 to 1988 is Nationalization and Burmanization and 1988 to 2000 is transition period of market-oriented economy. (Myat Thein, 2001). Myanmar entered Least Developed Country (LDC) status in 1987.

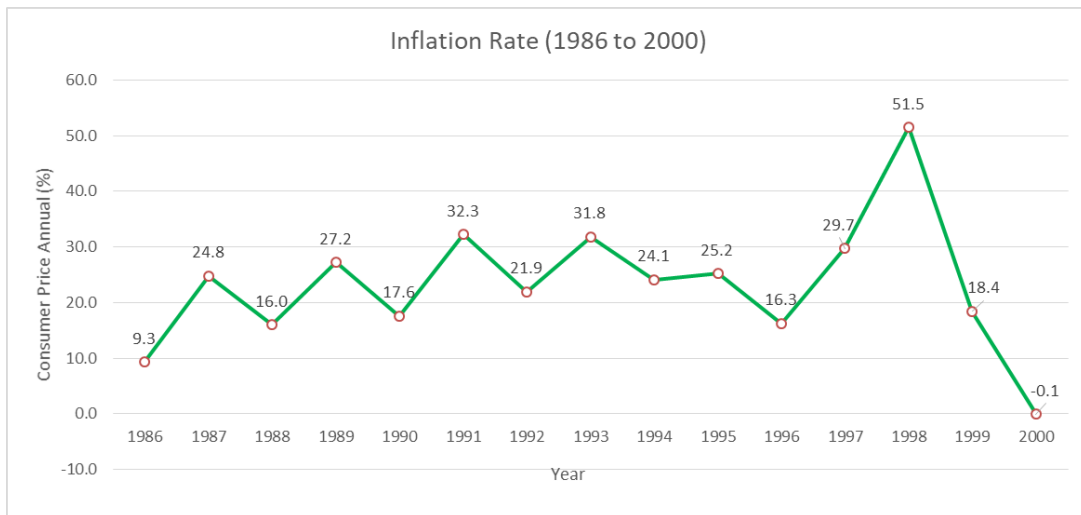
According to the Figure (3.11) state budget deficit became strong after 1994. The amount of budget deficits were (-15517.4) Kyat Million in 1994 and (-29647.2) Kyat Million in 1995. The tremendous amount of budget deficit is rapidly increased between the two years. And then, budget deficit occurred till 1998. At 1999, the tremendous amount of budget deficit increased again till 2000. Comparing the quantity of Treasury Bonds on issue with the balance sheets of the banks, the absorption increased annually and, by 2000, around 30 percent of the total deficit had been absorbed by the market through bank deposits (F. Mieno, 2009).

Figure (3.11) Budget Deficit from 1986 to 2000



Source: Statistical Yearbook (Various Issues)

Figure (3.12) Inflation Rate from 1986 to 2000



Source: World Bank Dataset (Various Issues)

According to Figure (3.12), the period of the 1980s and 1990s showed the unstable situation of inflation rate in Myanmar. The Figure 3.12 showed that alternation of increase and decrease in inflation between 1986 to 1996. CBM start issued treasury bonds to absorb money from the market at 1993 but according to the data, the budget deficit is still increase to 2000. It is believed that the market absorption through the private banks helped to moderate inflation (F. Mieno, 2009). At the period of Asian Financial Crisis (1997), Myanmar also faced the dramatically rise of inflation rate till 1998 and dramatically fall back again till 2000.

(b) Inflation and budget deficit from 2001 to 2010

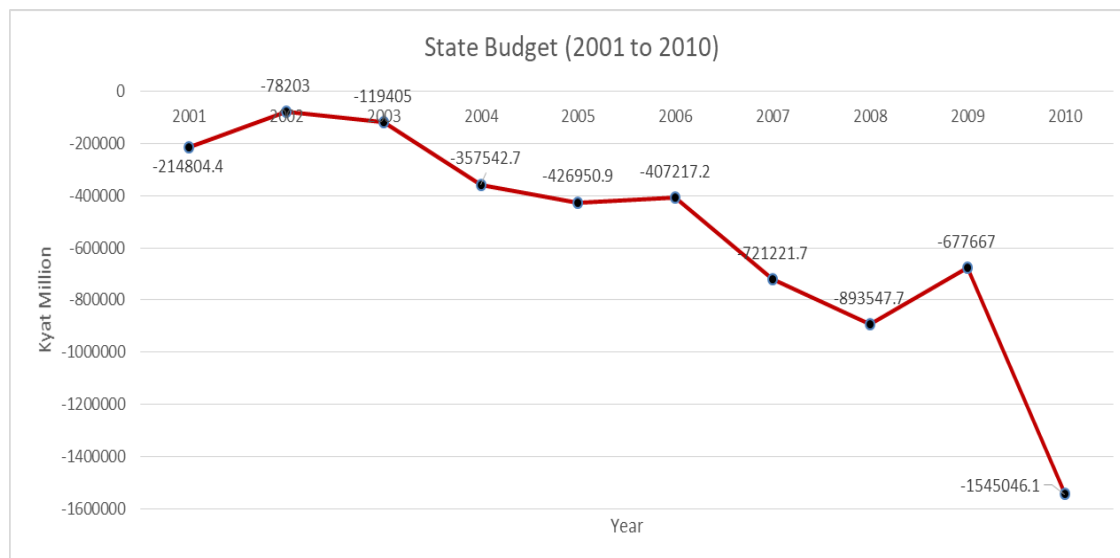
The political system of the 2001 to 2010 is Military rule (SPDC) and economic system is transition to adopt market economy system.

Until 2002, the Myanmar economy was in an unusual macroeconomic situation. Myanmar faced hyperinflation and worsening fiscal deficit (F. Mieno, 2009). The period of 2000s is the historical moment of financial crisis in Myanmar. In 2003, with the start of the banking crisis⁹, the asset values fell sharply and the

⁹ The bank run was started by a rumour about a scandal in the largest private commercial bank the Asia Wealth Bank (*Asia Dana*), at the beginning of February 2003, and as early as 6 February, long queues for the withdrawal of deposits at AWB branches were reported. The rumour was preceded by the bankruptcy of several informal financial so-called “general service companies (GSCs)”. The banks requested liquidity support from the Central Bank at the outset of the bank run. It was not until 21 February that the Central Bank announced private commercial banks, including AWB. However, this liquidity assistance amounted to less than 10 percent of the deposits of the AWB alone (250 billion kyats as the end of 2002). (*Koji Kubo, Ryu Fukui and Fumiharumieno, 2009*)

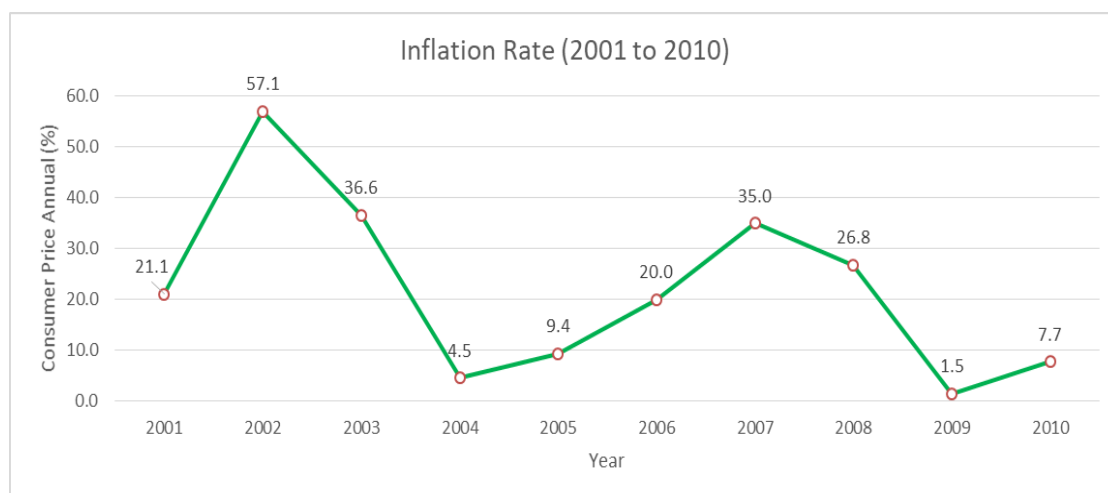
economy went into recession¹⁰. That led to increase in budget deficit and decrease in inflation rate at 2003.

Figure (3.13) Budget Deficit from 2001 to 2010



Source: Statistical Yearbook (Various Issues)

Figure (3.14) Inflation Rate from 2001 to 2010



Source: World Bank Dataset (Various Issues)

In the panic a flight to cash led to a rapidly and appropriately supplied by the Central Bank of Myanmar could have limited the contagion. Such liquidity support from the CBM, however, was too little and too late. Worse, the CBM's orders endorsing restrictions on withdrawals and the recalling of loans from borrowers greatly impaired trust – the indispensable ingredient of financial stability. (Sean Turnell, 2009).

¹⁰ The contraction of the economy continued in 2004, but entered a recovery phase in 2005 (F. Mieno, 2009).

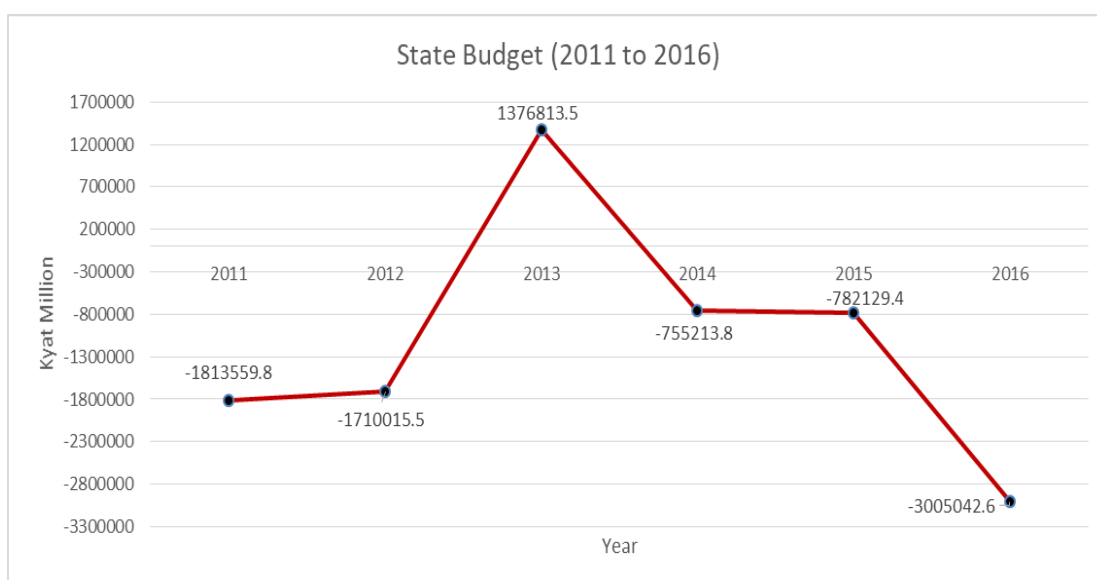
After the 2003 crisis, Myanmar faced Global Financial Crisis (2008), Myanmar got the highest inflation rate in ASEAN at 2008. The amount of budget deficit (-721221.7) Kyat Million increased to (-893547.7) Kyat Million from 2007 to 2008. The tremendous amount of budget deficit increased because SPDC government used huge amounts of money for the multi-party general election at 2010, and the inflation rate also increased at the same time.

(c) Inflation and budget deficit from 2011 to 2016

According to the Constitution of the Republic of the Union of Myanmar (2008), the political system is that genuine, disciplined multi-party democratic system. The economic system of the Union is market economy system.

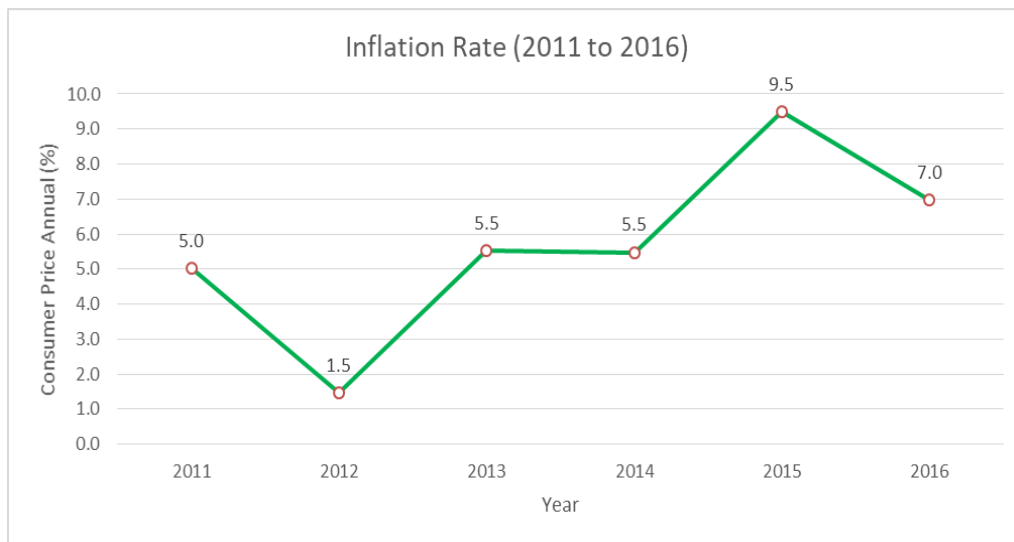
After the success of multi-party general election (2010), U Thein Sein from USDP Party took office as the President of the Republic of the Union of Myanmar. At that time, Myanmar got so much attention from international countries and organizations because of successful democratic transition. At 2012, Myanmar received tremendous amount of foreign receipt from across the World.

Figure (3.15) Budget Deficit from 2011 to 2016



Source: Statistical Yearbook (Various Issues)

Figure (3.16) Inflation Rate from 2011 to 2016



Source: World Bank Dataset (Various Issues)

According to the Figure (3.15), foreign receipt made the budget surplus in 2013 that is the first budget surplus in over 30years records. But the inflation rate is also increased even the budget surplus situation was occurred at 2013. And budget deficit is still high again and inflation is not change so much at 2014. According to the Figures (3.15) and Figure (3.16), budget deficit still occurred and inflation increase tremendously from one digit to two digit because of general election at 2015.

After the NLD government officially took office in March 2016, NLD government faced high budget deficit and low inflation rate compare with previous year at 2015. According to the Figure (3.15), Myanmar got new record of hyper budget deficit point over 30years. Union Minister U Kyaw Win (2018) for Planning and Finance explained that both the budget and trade was running at a deficit. Foreign exchange rates were unstable and the reason for the budget deficit rising is that important state-owned enterprises were operating at a loss for four-five years.

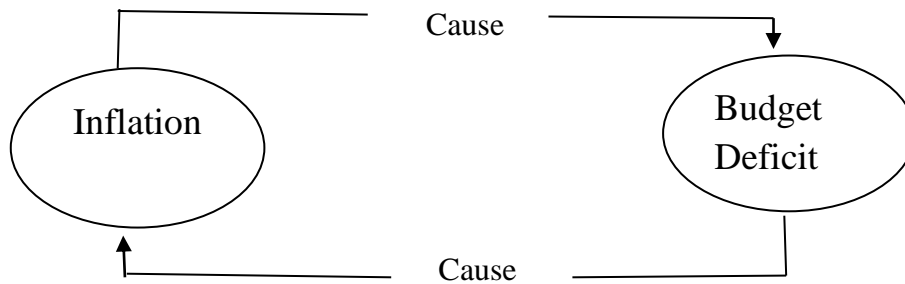
CHAPTER IV

EMPIRICAL ANALYSIS

4.1 Conceptual framework

In studying the relationship between inflation and budget deficit, a bidirectional causality is tested as shown in Figure 4.1.

Figure 4.1 Conceptual framework



To test the proposed hypothesis, some empirical analysis approaches are employed. Moreover, Granger causality test is applied for this step. The purpose of the test, to investigate the causality between two variables whether unidirectional or bidirectional association exists or not.

4.2 Data Selection

Budget deficit data is numerical data (absolute value) in kyat million and inflation rate in percentage. The study period is from 1986 to 2016. The data are as follows;

4.3 Methodology

This study investigates the relationship between inflation and budget deficit from 1986 to 2016 in Myanmar. The following time series econometric techniques are applied: Augmented Dickey-Fuller (ADF) unit root test, Co-integration test and Granger Causality test.

4.4 Summary of Empirical Analysis

Summary of Empirical Analysis are as follows;

- 1- Unit Root Test
- 2- Co-integration test (OLS Estimation)
- 3- Granger Causality Test

The assumption of the model is that variables are stationary at first difference. Inflation (INF) and Budget Deficit (BD) are tested whether stationary or not. The result is not stationary and then the residual should be tested that stationary or not. If the residual ADF test is greater than critical value, residual is stationary. So we can use this model. Regression of a non-stationary time series on another non-stationary time series may cause a spurious regression or non-sense regression. A spurious model is not desirable.

The ADF test is conducted first to know the data stationary property. After testing for the stationary of each variable, the author used the Ordinary Least Square estimation and residual test is investigated based co-integration test. We need to use here Engle-Granger critical values for unit root testing. Engle-Granger 5 percent and 10 percent critical values are -3.34 and -3.04 respectively. The co-integration equation can be described as following;

$$\text{INF} = \beta_0 + \beta_1 \text{BD} + \mu \text{ (eq.1)}$$

(BD) refers to budget deficit, (INF) refers to inflation, β_0 is constant, β_1 is coefficient of BD and μ is error term. If the residual of the equation1 is found to be stationary, we can accept the model. It also means that variables in the equation 1 such as (BD) and (INF) are co-integrated or they have long run relationship between them. In other words, equation1 is a long run model. The symptom of a spurious regression is R-square value would be greater than Durbin Watson statistics. A finding of the co-integration means that even though the variables are non-stationary, they have a long-run equilibrium, or in other words, the set of variables never drift apart in the long term.

The last test is Granger causality and the purpose is to examine the causality between inflation and budget deficit using time series data. In this test, optimal lags are determined; the objective of lags selection being to trace the relationship between the present year and previous years.

4.4.1 Unit Root Tests

The empirical studies using time series data cause non-stationary problems, its mean that variance are not stationary when the times change. The first step of the unit root is tested to know the data is stationary or not. There have three kinds of test which are level I(0), 1st difference I(1) and 2nd difference I(2). And there have three kinds of model (i) individual intercept (Model 1), (ii) individual intercept and trend (Model 2) and none (Model 3). There are many unit roots test but Augmented Dickey-Fuller (ADF) is employed in this study.

4.4.2 Augmented Dickey-Fuller (ADF) Unit Root Test

The early and pioneering work for detecting the presence of a unit root in a time series data was developed by Dickey and Fuller (1976, 1979). There are mainly three versions of ADF test.

- (1) Intercept and Trend: $\Delta Y_t = \beta_0 + \delta_0 t + \rho Y_{t-1} + \beta_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t$
- (2) Intercept: $\Delta Y_t = \beta_0 + \rho Y_{t-1} + \beta_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t$
- (3) No Intercept and No Trend: $\Delta Y_t = \rho Y_{t-1} + \beta_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t$

β_0 = the constant term

δ_0 = the coefficient of time trend

ρ = the coefficient of Y_{t-1}

ΔY_{t-i} = changes the values of the lag

ε_t = error term

m = the lags order of the autoregressive process.

From above equation, the hypothesis of Augmented Dickey-Fuller Test equation is as following (Enders, 1995)

$H_0: \rho = 0$ (Indicating a non-stationary)

$H_1: \rho < 0$ (Indicating a stationary)

In terms of selecting the optima lag length of the dependent variable, one approach is based on the lowest value of information criteria, such as Akaike Information Criterion (AIC).

4.4.3 Co-integration Test

The purpose of co-integration is to trace the relationship between the two series in long run. Common equation for co-integration can be described as following;

$$Y_t = \alpha + \beta X_t + U_t,$$

Above equation states the long run Equilibrium between two variables and obtain the residuals for this equation (Binh, 2013) . Studied variables are substituted into above equation;

$$INF = \beta_1 + \beta_2(BD) + \beta_3 T,$$

Where **INF** is inflation and **BD** is budget deficit. It is known as a co-integrating regression and the slope parameters β_2 and β_3 are known as cointegrating parameters (Binh, 2013). For this test, an estimation which is ordinary least square is applied. In the simplest case, the two-step methodology entails using ordinary least square (OLS) to estimate the long-run equilibrium relationship (Walter Enders and Pierre L. Siklos, 2001). A Dickey-Fuller test of the null hypothesis that the series y_t has a unit root may be based on OLS estimates of any of the following regression:

$$\Delta y_t = (a - 1)y_{t-1} + u_t$$

$$\Delta y_t = \beta_0 + (a - 1)y_{t-1} + u_t$$

$$\Delta y_t = \beta_0 + \beta_1 t + (a - 1)y_{t-1} + u_t$$

$$\Delta y_t = \beta_0 + \beta_1 t + \beta_2 t^2 + (a - 1)y_{t-1} + u_t$$

Where $\Delta y_t = y_t - y_{t-1}$, t is a linear time trend, u_t is an error term, and a is a parameter that equals unity under the null hypothesis. The u_t 's must be independent, but for asymptotic results neither normality nor homoscedasticity needs to be assumed (MacKinnon, 1996). According to Engle and Granger (1987), the test of the null hypothesis that two or more integrated time series are not co-integrated. Then, the series can be estimated by OLS whether if all the variables are co-integrated, and the error should be stationary. If there is nonstationary, the error must have a unit root. Therefore. The null hypothesis of non-cointegration may be tested by using a DF or ADF test on the residuals from OLS estimation results (MacKinnon, 1996).

4.4.4 Granger Causality Test

Granger defined the causality relationship based on two principles:

- (i) The cause happens prior to its effect.
- (ii) The cause has unique information about the future values of its effect.

Granger (1988) showed, that in the case of a bivariate system, with the time series x_t and y_t which are integrated at the same order, when the past and present value of y_t provides some useful information to forecast x_{t+1} at time t , it is said that y_t Granger causes x_t .

The normal testing procedure for Granger causality is testing for the significance of the coefficients of lagged y_t , which are used as the explanatory variables for x_t in the regression context. If one looks at the second part of the Error-Correction Model, the test for Granger causality from y to x is an F-test for the joint significance of $\hat{c}_{21,i}$ ($i = 1, \dots, t-1$). Similarly, strength of the test for Granger causality can change over time, the direction of causality can change depending on time is measured, or there can be bidirectional causality. Granger causality means that a lead-lag relationship between variables in a multivariate time series is evident. However, this does not mean that if we make a structural change in one series the other will change as well, but the turning point in one series precede the turning points of the other.

4.5 Summary of Empirical Results

Summary of empirical results are as follows;

- 1- Unit Root Testing all variables and they are stationary at 1st difference
- 2- Ordinary Least Square Estimation (OLS) showed long run negative co-integration between two variables.
- 3- Granger Causality Test showed that budget deficit cause inflation. In contrast, inflation does not cause budget deficit.

4.5.1 Unit Root Test

Table 4.1 Unit Root Test (Augmented Dickey-Fuller)

Variables	Level	Model	Critical values (CV)	ADF			Results
			5 %	T-Statistic	P value	DR	
BD	I(0)	Model (1)	-2.998064	-1.140953	0.6812	T<CV	Not Stationary
		Model (2)	-3.622033	-1.431521	0.8233	T<CV	Not Stationary
		Model (3)	-1.956406	-1.153535	0.2191	T<CV	Not Stationary
	I (1)	Model (1)	-2.991878	-0.802304	0.8004	T<CV	Not Stationary
		Model (2)	-3.603202*	-6.583043*	0.0001*	T>CV	Stationary
		Model (3)	-1.955681	-0.380381	0.5365	T<CV	Not Stationary
INF	I(0)	Model (1)	-2.976263	-0.705597	0.8289	T<CV	Not Stationary
		Model (2)	-3.574244	-5.185272	0.0012	T>CV	Stationary
		Model (3)	-1.953858	-0.847551	0.3395	T<CV	Not Stationary
	I (1)	Model (1)	-2.976263	-8.006794	0.0000	T>CV	Stationary
		Model (2)	-3.587527*	-8.062618*	0.0000*	T>CV	Stationary
		Model (3)	-1.953858	-8.088477	0.0000	T>CV	Stationary

Note: Model (1) = Intercept, Model (2) = Trend and Intercept and Model (3) = None of trend and intercept. I (0) = level and I(1) = first difference. BD = budget deficit and INF = inflation, DR = Decision Rule *All variables are selected under 5 percent critical value. Neither positive nor negative sign include in decision process.

According to the results (table 4.1) of Augmented Dickey-Fuller unit root test (ADF test) for budget deficit variable, Trace-statistics (T-statistics) value is greater than critical value, therefore, the variable is stationary at first difference [I(1)] in model 2, meaning budget deficit data has trend and intercept.

For inflation variable, all the T-statistics values are greater than all the critical values and the variable is stationary at first difference [I(1)] in all model, it is expressed that variable has trend and intercept.

The meaning of stationary variable is that there is trend and intercept in data. Stationary means there is no unit root (or) unit root means non stationary. Nonstationary refers to data is no long-run association among time period. The decision rule for the unit root test is that when the T-statistics value is greater than critical value, the variables are stationary. Therefore, both variables are integrated at first difference.

4.5.2 Ordinary Least Squares Regression (NLS and ARMA)

Table 4.2 Result of Least Squares (NLS and ARMA)

Dependent Variable: INF

Method: Least Squares

Date: 04/29/18 Time: 13:15

Sample: 1986 2016

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.03327	2.787015	8.623300	0.0000
BD	-9.46E-06	3.23E-06	-2.928936	0.0066
R-squared	0.228286	Mean dependent var		19.35007
Adjusted R-squared	0.201675	S.D. dependent var		14.22475
S.E. of regression	12.70968	Akaike info criterion		7.984945
Sum squared resid	4684.539	Schwarz criterion		8.077460
Log likelihood	-121.7666	Hannan-Quinn criter.		8.015103
F-statistic	8.578664	Durbin-Watson stat		1.710418
Prob(F-statistic)	0.006561			

According to the Ordinary Least Squares OLS regression results (table 4.2), the independent variable which is budget deficit (BD) is less than 5 percent, meaning that the variable is significant in explaining the dependent variable of inflation (INF). Moreover, according to the decision rule, the value of R- squared should be less than in Durbin-Watson statistics. In addition, if probability value (p-value) is less than 5 percent, the variable will be significant to explain the dependent variable. It indicates that the model is nonspurious or nonsense model. Therefore, the conclusion is that the variables which are budget deficit (BD) and inflation (INF) are co-integrated in the long run. But as the coefficient of the budget deficit showed negative sign, it means that there is negative relationship between the two variables.

4.5.3 Augmented Dickey-Fuller Unit Root Test

Table 4.3 Result of Augmented Dickey-Fuller Unit Root Test on Residuals

Null Hypothesis: U has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.578351	0.0000
Test critical values: 1% level	-3.679322	
5% level	-2.967767	
10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

The study defined null hypothesis is residuals has unit root; the contrary alternative hypothesis is residuals does not has unit root.

According to the ADF unit root test for residuals (table 4.3), probability value (P-value = 0.0000) is less than 5% and critical value of Engle and Granger 10% is (-3.04) and it is less than the critical value of t-statistics (-6.578351). Therefore, the model can be concluded as a nonspurious or nonsense model, according to the decision rule which is p-value is less than 5% and t-statistics value is greater than Engle and Granger critical value. Therefore, both variables are co-integrated in long run.

4.5.4 Granger Causality Test

The study-defined null hypothesis is budget deficit does not cause inflation and inflation does not cause budget deficit. Vice versa, alternative hypothesis is budget deficit does cause inflation and inflation does cause budget deficit. According to table (4.4), the probability value (p-value) is less than 5%. So the deciding rule is that if the probability value is less than 5%, we can reject null hypothesis and accept the alternative hypothesis. The results showed that variables have unidirectional relation, meaning that budget deficit does cause inflation but inflation does not cause budget deficit.

Table 4.4 Granger Causality Tests

Pairwise Granger Causality Tests

Date: 04/29/18 Time: 13:36

Sample: 1986 2016

Null Hypothesis	Observation	F-Statistic	Probability	Lag
BD does not Granger Cause INF	29	9.17035	0.0011	2
INF does not Granger Cause BD		0.30928	0.7369	
BD does not Granger Cause INF	28	10.3692	0.0002	3
INF does not Granger Cause BD		0.28602	0.8349	
BD does not Granger Cause INF	27	5.02425	0.0257	4
INF does not Granger Cause BD		0.26929	0.8939	
BD does not Granger Cause INF	26	5.52897	0.0044	5
INF does not Granger Cause BD		0.25001	0.9333	

In the Granger Causality, the optimal lags are tested to find the robust causality among the variables. The author attempts to select various optimal lags, those two to five years. The results of the probability are same when the lags are two to five maximum. Moreover, P value is still less than 5 percent during two to five years. It means that optimal lags can be selected from two to five lags for with significant causality. In economic explanation, budget deficit does cause inflation within five years.

CHAPTER VI

CONCLUSION

6.1 Findings

As mentioned above, inflation can be caused by variables other than budget deficits such as exchange rate and broad money. It is not sure inflation will decrease even if the budget deficit is low because of other variables.

In this study, there is seen to be long run co-integration between inflation and budget deficit and according to the Granger Causality Test, budget deficits cause inflation in Myanmar. In the real economy, budget deficit can affect inflation in the long run.

Inflation is not always caused by budget deficit; it can be caused by other factors. According to the Olivera-Tanzi effect, not only budget deficit through its impact on money and expectations produces inflationary pressure, but also high inflation itself has a feedback effect pushing up budget deficit.

Also expectations play big role in controlling inflation rate with different age groups having different expectations on change in inflation rate according to their lifelong experiences (U.Malmendier & S.Nagel, 2016). Therefore, the policy makers should manage the budget deficit and inflation not only to come under the control, but also to create appropriate policy environment.

When inflation rates of the states and regions are compared, the highest inflation rate is seen occurring in Chin and Rakhine states. Therefore, the government should take into account this issue in making appropriate inflation-combatting policy and implementation.

6.2 Policy Recommendations

CBM is trying to reduce inflation rate through absorption of money, using treasury bills and bonds in the market to reach its target. But it has not been enough to control the inflation rate. CBM thus needs to reform role of treasury bills and bonds to control inflation as monetary tool.

CBM should change monetary rules and system to collect diverse information for making right decisions, such as inflation-targeting.

CBM should change the period year of board of directors to make it different from the government period year to prevent political intervention and become more independent.

Another requirement is an announcement by the Minister of Planning and Finance and the Governor of CBM to negotiate and make public a Policy Targets Agreement (PTA), to reduce the inflation expectations of the public.

National League for Democracy (NLD) government started to change the centralized budget allocation system to a system of decentralization, with head to states and regions. That might reduce budget expenditures, reducing the budget deficit and improving effectiveness of the expenditure of budget. It is important to build good budget allocation system because of facing complexity of statistic data between union government, states and regional governments.

Deficit occurs in capital account of SAOs in Myanmar. On the other hand, the government should expend the revenue appropriately, effectively and correctly and plan to increase the income of as well.

Final point is that to adopt the inflation-targeting policy, there is need to reconcile the real economy¹¹ and statistical economy.

¹¹ Real economy includes formal and informal sectors.

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Appendix

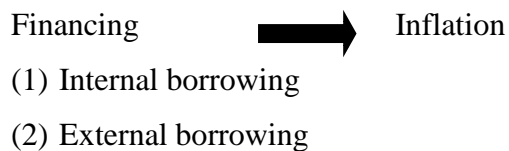
Appendix A. Budget and Impact

Budget

Receipt	XXXX
Payment	XXXX
<hr/>	
Deficit	XXXX
(Or)	
Surplus	XXXX
(Or)	
Balanced	0000

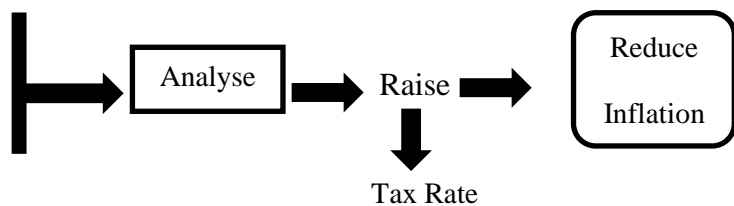
Impact

1. DEFICIT

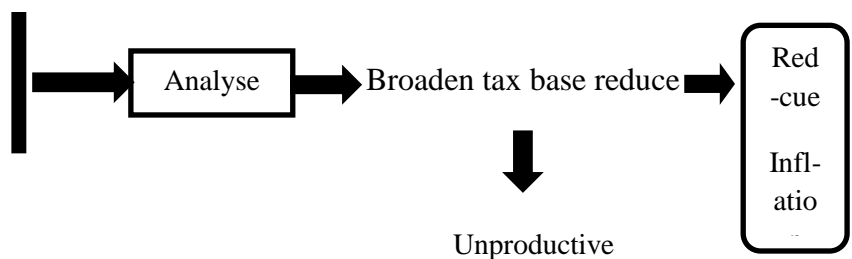


Remedy

- (a) Receipt
- (1) Tax Revenue
- (2) Non Tax Revenue

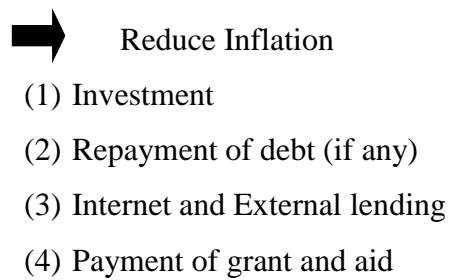


- (b) Payment
- (1) Current
- (2) Capital
- (3) Financial

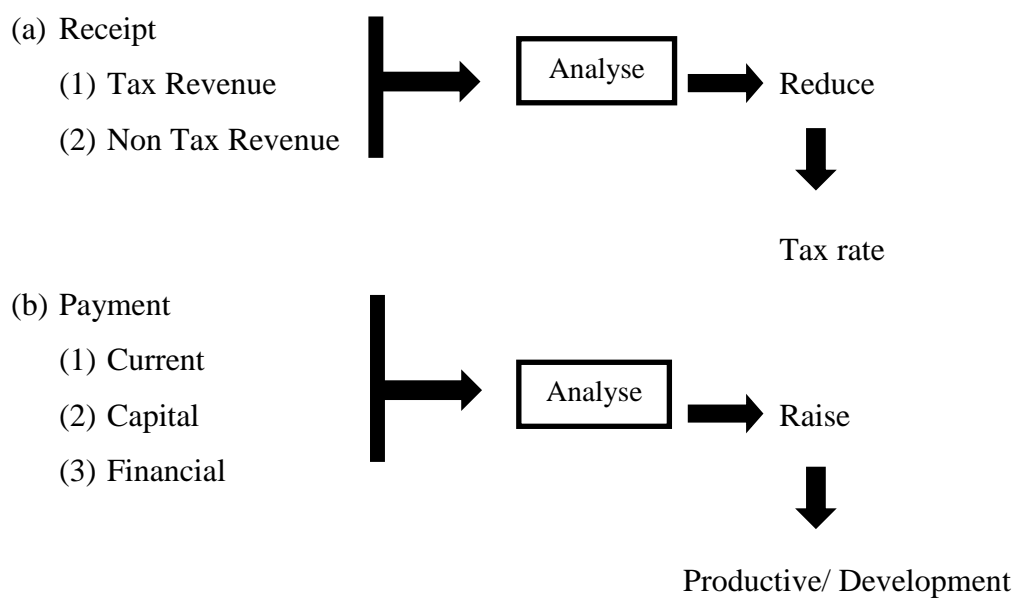


Impact

2. SURPLUS

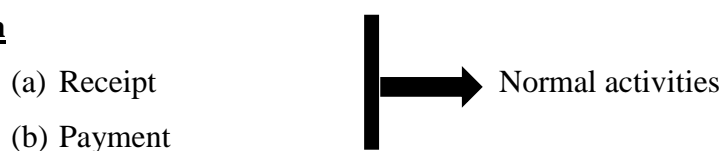


Action



3. BALANCE → No financing → Normal effect on economy

Action



Source: Kyi Shein (2016), Budget Department

Appendix B. Comparison of Inflation, consumer prices within ASEAN Countries, 1986 to 2016 (annual %)

Year	Brunei Daruss alam	Cambodia *	Indo nesia	Lao PDR**	Malay sia	Myanm ar	Philippi nes	Singap ore	Thaila nd	Vietna m***
1986	1.78	NA	5.83	NA	0.74	9.33	1.15	-1.39	1.84	NA
1987	1.25	NA	9.28	NA	0.29	24.76	4.07	0.52	2.47	NA
1988	1.19	NA	8.04	NA	2.56	16.04	13.86	1.52	3.86	NA
1989	1.30	NA	6.42	61.33	2.81	27.20	12.24	2.35	5.36	NA
1990	2.14	NA	7.81	35.64	2.62	17.63	12.18	3.46	5.86	NA
1991	1.60	NA	9.42	13.44	4.36	32.27	19.26	3.43	5.71	NA
1992	1.28	NA	7.53	9.86	4.77	21.91	8.65	2.26	4.14	NA
1993	4.25	NA	9.69	6.27	3.54	31.83	6.72	2.29	3.31	NA
1994	2.46	NA	8.52	6.78	3.72	24.10	10.39	3.10	5.05	NA
1995	5.97	-0.80	9.43	19.59	3.45	25.19	6.83	1.72	5.82	NA
1996	2.00	7.15	7.97	13.02	3.49	16.28	7.48	1.38	5.81	5.68
1997	1.71	7.96	6.23	27.51	2.66	29.70	5.59	2.00	5.63	3.21
1998	-0.44	14.81	58.39	90.98	5.27	51.49	9.23	-0.27	7.99	7.27
1999	-0.42	4.01	20.49	125.27	2.74	18.40	5.94	0.02	0.28	4.12
2000	1.56	-0.79	3.72	25.08	1.53	-0.11	3.98	1.36	1.59	-1.71
2001	0.60	-0.60	11.50	7.81	1.42	21.10	5.35	1.00	1.63	-0.43
2002	-2.31	3.23	11.88	10.63	1.81	57.07	2.72	-0.39	0.70	3.83
2003	0.30	1.21	6.59	15.49	0.99	36.59	2.29	0.51	1.80	3.22
2004	0.81	3.92	6.24	10.46	1.52	4.53	4.83	1.66	2.76	7.76
2005	1.24	6.35	10.45	7.17	2.96	9.37	6.52	0.43	4.54	8.28
2006	0.16	6.14	13.11	6.80	3.61	20.00	5.49	1.02	4.64	7.39
2007	0.97	7.67	6.41	4.52	2.03	35.02	2.90	2.10	2.24	8.30
2008	2.08	25.00	9.78	7.63	5.44	26.80	8.26	6.52	5.47	23.12
2009	1.04	-0.66	4.81	0.04	0.58	1.47	4.22	0.60	-0.85	7.05
2010	0.36	4.00	5.13	5.98	1.71	7.72	3.79	2.80	3.25	8.86
2011	2.02	5.48	5.36	7.58	3.20	5.02	4.65	5.25	3.81	18.68
2012	0.46	2.93	4.28	4.26	1.65	1.47	3.17	4.53	3.02	9.09
2013	0.38	2.94	6.41	6.36	2.10	5.52	3.00	2.38	2.18	6.59
2014	-0.19	3.86	6.39	4.14	3.17	5.47	4.10	1.01	1.90	4.09
2015	-0.42	1.22	6.36	1.28	2.08	9.49	1.43	-0.50	-0.90	0.88
2016	-0.73	3.02	3.53	1.51	2.13	6.96	1.77	-0.50	0.19	3.24

Source: World Bank Dataset (2017)

Note: * Cambodia inflation data is not available 1985 to 1994.

** Lao PDR inflation data is not available 1985 to 1988. *** Vietnam inflation data is not available 1985 to 1995.

Appendix C. Inflation, Consumer Prices Index in Myanmar (Annual %)

Year	Inflation, consumer prices (Annual %)	CPI
1986	9.3254619	0.775513377
1987	24.76	0.967530489
1988	16.04280218	1.122749492
1989	27.19852645	1.428120809
1990	17.62677503	1.679852451
1991	32.27203829	2.221975078
1992	21.9132104	2.708881151
1993	31.83160687	3.57116155
1994	24.09878608	4.431768132
1995	25.1947124	5.548339368
1996	16.27539664	6.451353606
1997	29.69723258	8.367227091
1998	51.48754975	12.6753073
1999	18.40104337	15.0076961
2000	-0.109165515	14.99131287
2001	21.10130538	18.15467558
2002	57.07451126	28.51636793
2003	36.58971753	38.95042641
2004	4.534213741	40.716522
2005	9.368618142	44.53109747
2006	19.99648734	53.43575273
2007	35.02459707	72.15140982
2008	26.79953719	91.48765373
2009	1.472343114	92.8346659
2010	7.718381959	100
2011	5.021460146	105.0214601
2012	1.467583227	106.5627375
2013	5.524279207	112.4495606
2014	5.474464713	118.6055721
2015	9.485472555	129.8558711
2016	6.964739177	138.8999939

Source: World Bank 2017

Note: CPI Base Year is 2010 = 100

**Appendix D. Budget Deficit and Foreign Receipts in Myanmar,
Kyat Million (1986-2015)**

Year	Budget Deficit/Surplus *	Foreign Receipts **
1986	-2944.1	3013.4
1987	-2796.9	3291.1
1988	-4021.6	2964
1989	-6314.7	1922.1
1990	-8019.7	1088
1991	-11204	940.2
1992	-12311.4	782.7
1993	-12094.9	921.4
1994	-15517.4	1148.3
1995	-29647.2	1227.8
1996	-38819.5	1419.3
1997	-51739.4	772.1
1998	-57241.1	2677.1
1999	-91875.5	2572.3
2000	-109725.6	1284.4
2001	-214804.4	348.9
2002	-78203	NA
2003	-119405	NA
2004	-357542.7	272.5
2005	-426950.9	899.7
2006	-407217.2	519.2
2007	-721221.7	671.8
2008	-893547.7	1201
2009	-677667	2538.5
2010	-1545046.1	3539.6
2011	-1813559.8	3480.7
2012	-1710015.5	3711.5
2013	+1376813.5	745477.9
2014	-755213.8	689134.5
2015	-782129.4	572867.1
2016	-3005043	1098555

Source: CSO Statistical Yearbook (Various Issues)

Note: *Estimates made on the assumption that 60 percent of budget deficit is financed by monetization.

**Foreign receipts includes foreign loans, foreign grants and foreign aids and used fiscal year

Appendix E. Treasury Bonds 1993 – 1994 to 2015 – 2016 (Kyat Million)

Year	Three-Year Bonds*	Five-Year Bonds*	Two-Year Bonds**	Total
1993 – 1994	36.01	6.81	-	42.82
1994 – 1995	46.97	7.73	-	54.7
1995 - 1996	824.27	48.64	-	872.91
1996 - 1997	1898.36	491.64	-	2390
1997 - 1998	2422.95	1787.23	-	4210.18
1998 - 1999	10684.20	14969.66	-	25653.86
1999 - 2000	5340.25	36254.70	-	41594.95
2000 - 2001	15735.74	44559.91	-	60295.65
2001 - 2002	6513.14	6151.13	-	12664.27
2002 - 2003	1759.47	6346.64	-	8106.11
2003 - 2004	7230.56	1260.43	-	8490.99
2004 - 2005	27637.83	16680.91	-	44318.74
2005 - 2006	12038.23	4864.88	-	16903.11
2006 - 2007	39254.80	11831.41	-	51086.21
2007 - 2008	70346.32	23550.22	-	93896.54
2008 - 2009	87780.30	43094.02	-	130874.3
2009 - 2010	598470.66	99305.42	-	697776.1
2010 - 2011	82028.62	312678.15	51322.73	446029.5
2011 - 2012	56421.39	283856.93	291117.46	631395.8
2012 - 2013	347138.51	348838.70	172685.55	868662.8
2013 - 2014	154224.92	594027.79	436487.60	1184740
2014 – 2015	68161.64	276625.67	79775.50	424562.8
2015 – 2016	310912.80	212489.55	285814.69	809217

Source: CSO Statistical Year Books (Various Issues)

Noted: * Two types of government treasury bonds, three-year treasury bonds and five-year treasury bonds are issued with effect from 1st December 1993 at the Central Bank of Myanmar with a view to giving an opportunity for the public and private enterprises to save and developing a capital market.

** The Central Bank of Myanmar has issued two-years treasury bonds since 1st January 2010.

*** Money Supply is End of Year and Treasury Bonds is fiscal year. Government Treasury Bonds does not include auction.

Appendix F. Interest rates of Treasury Bill and Bonds 1986 to 2016 (percent per annum)

Year	Central Bank Rate	Three months T-Bills	Two year T-Bonds	Three year T-Bonds	Five year T-Bonds
1993	11	4	-	10	10.5
1994	11	4	-	10	10.5
1995	12.5	4	-	10	10.5
1996	15	4	-	13.5	14
1997	15	4	-	13.5	14
1998	15	4	-	13.5	14
1999	12	4	-	10.5	11
2000	10	4	-	8.5	9
2001	10	4	-	8.5	9
2002	10	4	-	8.5	9
2003	10	4	-	8.5	9
2004	10	4	-	8.5	9
2005	10	4	-	8.5	9
2006	12	4	-	10.5	11
2007	12	4	-	10.5	11
2008	12	4	-	10.5	11
2009	12	4	-	10.5	11
2010	12	4	10.5	11	11.5
2011	12	4	10.5	11	11.5
2012	10	4	8.75	9	9.5
2013	10	4	8.75	9	9.5
2014	10	4	8.75	9	9.5
2015	10	4	8.75	9	9.5
2016	10	4	8.75	9	9.5

Source: CSO Statistical Year Books (Various Issues)

**Appendix G. STATE ADMINISTRATIVE ORGANIZATIONS, 1985-1986 to
2015-2016, (Absolute values in Kyat Millions)**

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
1985 – 1986	7297.4	3.3	404.9	7705.6	5547.3	2051.9	356.2	7955.4
1986 – 1987	6830	5.6	454.4	7290	5971.7	2327.5	455.9	8755.1
1987 – 1988	6669	5.2	383.3	7057.5	5842.5	2158.9	455	8456.4
1988 – 1989	5831.9	18.4	424.3	6274.6	6297	1632.5	271.6	8201.1
1989 – 1990	8525.4	2094.4	408.2	11028	12812.5	2750.8	138.3	15701.6
1990 – 1991	14045.1	44.6	494.5	14584.2	15381.6	6050.1	180.4	21612.1
1991 – 1992	15306.6	99.5	397.7	15803.8	16866.8	8198	200.9	25265.7
1992 – 1993	19323	892	778.9	20993.9	18045	9756	676.5	28477.5
1993 – 1994	26013.6	1198.4	313.2	27525.2	23280.3	12303.9	303.7	35887.9
1994 – 1995	31308.1	599	280.2	32187.3	27654	20145.4	615.4	48414.8
1995 – 1996	38447.1	850.8	296.2	39594.1	32875.3	31820.9	818.5	65514.7
1996 – 1997	49252.2	785	240.8	50278	37576.4	37302.4	689.1	75567.9
1997 – 1998	85728.7	803.4	251.1	86783.2	47836.7	50365	260.3	98462
1998 – 1999	115814.3	79.5	1067.6	116961.4	62953.2	60918.7	880	124751.9
1999 – 2000	106422.9	407.6	175.3	107005.8	84523.4	60396.1	383.8	145303.3

Appendix G. (Continued)

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
2000 – 2001	133813.4	256.1	149.6	134219.1	133776.9	87053.5	184.4	221014.8
2001 – 2002	162680	239	150	163069	14824	50532	522	193878
2002 – 2003	183430	215	181	183826	157666	83876	608	242150
2003 – 2004	383299.3	643.1	284.8	384227.2	235539.8	354792.6	147.6	590480
2004 – 2005	585929.4	1127.1	741.6	587798.1	329571.8	436730.6	131.8	766434.2
2005 – 2006	817746.5	6539.9	1103.6	825390	343732.8	663875.2	125.7	1007733.7
2006 – 2007	1289029.1	3143	4003.1	1296175	733540.8	950856.8	232.7	1684630.3
2007 – 2008	1701289	33238.9	3911.4	1738439	849426.3	1349442.9	210.6	2199079.8
2008 – 2009	2075230.7	59380.2	17722.7	2152334	993698	1332380.5	239.6	2326318.1
2009 – 2010	2026666.1	132461.8	10464.2	2169592	1158532.5	2016065.4	3671.3	3178269.2
2010 – 2011	5306924.5	353436.4	29533.5	5689894	4302051.3	3203230.2	1219.2	7506500.7
2011 – 2012	2835585.5	107440	12452.7	2955478	1942158.6	2583566.5	1087	4526812.1
2012 – 2013	4554307.3	398933.6	10625.1	4963866	3511989	3339081.1	60483.5	6911553.6
2013 – 2014	5829521	58200.8	32472.7	5920195	4183051.2	3193863.5	152523.1	7529437.8
2014 – 2015	7896150.7	47766	24897.9	7968815	5977389.4	3373565.9	252078.9	9603034.2
2015 – 2016	7824231.5	194869.0	58728	7688090.5	7381615.5	3587557.2	475078.6	11444251.3

Source: CSO Statistical Year Book (various issues)

Appendix H. STATE ECONOMIC ENTERPRISES, 1985-1986 to 2014-2015,
(Absolute values in Kyat Millions)

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
1985 – 1986	24083.5	5	24.4	24112.9	22503.3	4298.8	1242	28044.1
1986 – 1987	23248.3	9	18.1	23275.4	20626.1	3876.5	1361.8	25864.4
1987 – 1988	18295.7	90	42.6	18428.3	18996.4	3826.2	1038.4	23861
1988 – 1989	17688	60.9	32.2	17781.1	20467.9	2621.1	909.3	23998.3
1989 – 1990	25887.2	55	23.9	25966.1	25596.4	3100.2	1280.9	29977.5
1990 – 1991	31327.4	16.8	12.2	31356.4	32219.1	3394.5	747.8	36361.4
1991 – 1992	35785.8	70.1	134.9	35990.8	36054.4	3346.8	709.6	40110.8
1992 – 1993	42859.2	233.2	12.3	43104.7	44169.6	3695.6	758.8	48624
1993 – 1994	52309.6	48.4	58	52416	56843.1	3373.5	507.2	60723.8
1994 – 1995	72399.8	115.2	280	72795	80977.5	5636.1	759.7	87373.3
1995 – 1996	87185.1	36.2	319.1	87540.4	91624.7	9209.6	1019.3	101853.6
1996 – 1997	108555	31.8	52.4	108639.2	128285.9	15684.1	1373.6	145343.6
1997 – 1998	184921.2	83.4	11.5	185016.1	214639.7	18022.6	586.5	233248.8
1998 – 1999	242155.5	42	102.5	242300	309587.1	18667.7	693.5	328948.3
1999 – 2000	315141.1	411.8	3.7	315556.6	365695.2	21400.8	1067.2	388163.2

Appendix H. (Continued)

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
2000 – 2001	284151.1	215.7	-	284366.8	389966.8	22077	673.1	412716.9
2001 – 2002	359669	104	1225	360998	377222	30144	1026	408392
2002 – 2003	414723	35	205	414963	438792	36198	1001	475991
2003 – 2004	612056.2	106.4	-	612162.6	665793.2	97554.1	373	763720.3
2004 – 2005	676985.4	249.7	-	677235.1	777631.3	148348.8	463.3	926443.4
2005 – 2006	1120482.2	210.4	1.6	1120694	1224424.1	121266.9	408.8	1346100
2006 – 2007	1675064.9	79.8	-	1675145	1846694.7	161546.5	404.1	2008645
2007 – 2008	2267754.9	310.5	-	2268065	2431513.9	270217.4	398.5	2702130
2008 – 2009	2477520.7	4516.5	-	2482037	2637234	350580.2	531.9	2988346
2009 – 2010	2499500	42585	-	2542085	2668859.8	412319.3	842.4	3082022
2010 – 2011	-	-	-	-	-	-	-	-
2011 – 2012	3363867.3	175522.1	-	3539389	3301898.7	377231.4	2443.8	3681574
2012 – 2013	7333927.2	163530.4	-	7497458	3685328.5	1116571.3	78093.1	4879993
2013 – 2014 *	7497677.3	214770.3	5731.7	7718179	5582574.5	1253125.3	268722.2	7104422
2014 – 2015 *	8170662.686	38534.1	27376.9	8236574	6476009.7	1036345.1	245436.8	7757792
2015 – 2016 *	7276862.1	4727.4	67671.5	7349261	6738208.7	981591.3	257661.9	7977461.9

Note: *2013 – 2014, 2014 – 2015 and 2015 – 2016 years' data are includes Undertake outside the Union Fund.

Source: CSO Statistical Year Book (Various Issues)

Appendix I. DEVELOPMENT COMMITTEES, 1985-1986 to 2014-2015,
(Absolute values in Kyat Millions)

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
1985 – 1986	264.6	-	-	264.6	181.4	46.8	5.5	233.7
1986 – 1987	277.7	-	-	0	189.4	127	6.6	323
1987 – 1988	305	-	-	305	224.6	143.3	6.6	374.5
1988 – 1989	390	-	-	390	295.4	112.1	49.9	457.4
1989 – 1990	986.1	-	-	986.1	662.5	647.5	15.6	1325.6
1990 – 1991	1774	105.3	-	1879.3	1074.4	765.3	54.8	1894.5
1991 – 1992	1806.4	595.5	-	2401.9	938.5	900	9.1	1847.6
1992 – 1993	13	-	-	13	5.8	3.2	-	9
1993 – 1994	15.2	-	-	15.2	8.7	1	-	9.7
1994 – 1995	18.8	-	-	18.8	9	1	-	10
1995 – 1996	22.7	-	-	22.7	10.5	4.4	-	14.9
1996 – 1997	21	-	-	21	13	6.6	-	19.6
1997 – 1998	23.6	-	-	23.6	15.5	14.8	-	30.3
1998 – 1999	25.8	-	-	25.8	22.9	11.9	-	34.8
1999 – 2000	25.9	-	-	25.9	23.2	8.6	-	31.8
2000 – 2001	58.6	-	-	58.6	45	27	-	72

Appendix I. (Continued)

Year	Internal Receipts				Expenditures			
	Current Account	Capital Account	Financial Account	Total	Current Account	Capital Account	Financial Account	Total
2001 – 2002	57	-	-	57	49	44	-	93
2002 – 2003	73	-	-	73	61	38	-	99
2003 – 2004	87	-	-	87	69.6	22.1	-	91.7
2004 – 2005	114.8	-	-	114.8	98.1	22.9	-	121
2005 – 2006	120.8	-	-	120.8	84.7	23.2	-	107.9
2006 – 2007	288.7	-	-	288.7	179.1	36.7	-	215.8
2007 – 2008	294.4	-	-	294.4	208.4	54	-	262.4
2008 – 2009	315.2	-	-	315.2	219.3	8	-	227.3
2009 – 2010	329.1	-	-	329.1	267.4	33.8	-	301.2
2010 – 2011	359.2	-	-	359.2	335.5	102.4	-	437.9
2011 – 2012	440.8	-	-	440.8	387	39.1	-	426.1
2012 – 2013	16341	8.3	-	16349.3	11321.9	1376.5	-	12698.4
2013 – 2014 *	23409.7	70.4	-	23480.1	21270.8	1572.9	-	22843.7
2014 – 2015 *	950.8	0.0	-	950.8	893.9	41.5	-	935.4
2015 – 2016 *	1228.3	0.0	-	1228.3	1055.1	40.7	-	1095.8

Note: * Receipts and Expenditures of Nay Pyi Taw Council, Nay Pyi Taw Development Committee and Social Security of Union Ministry and Department (Undertaken Outside the Union Fund) are not included in 2013 – 2014, 2014 – 2015 and 2015 – 2016 year.

Source: CSO Statistical Year Book (various issues)

Appendix J. Current Accounts of SAOs, SEEs and DCs (Absolute values in Kyat Million)

Current Accounts			
Year	Total Internal Receipts	Total Expenditures	Surplus/Deficit
1985 – 1986	31645.5	28232	3413.5
1986 – 1987	30356	26787.2	3568.8
1987 – 1988	25269.7	25063.5	206.2
1988 – 1989	23909.9	27060.3	-3150.4
1989 – 1990	35398.7	39071.4	-3672.7
1990 – 1991	47146.5	48675.1	-1528.6
1991 – 1992	52898.8	53859.7	-960.9
1992 – 1993	62195.2	62220.4	-25.2
1993 – 1994	78338.4	80132.1	-1793.7
1994 – 1995	103726.7	108640.5	-4913.8
1995 – 1996	125654.9	124510.5	1144.4
1996 – 1997	157828.2	165875.3	-8047.1
1997 – 1998	270673.5	262491.9	8181.6
1998 – 1999	357995.6	372563.2	-14567.6
1999 – 2000	421589.9	450241.8	-28651.9
2000 – 2001	418023.1	523788.7	-105765.6
2001 – 2002	522406	392095	130311
2002 – 2003	598226	596519	1707
2003 – 2004	995442.5	901402.6	94039.9
2004 – 2005	1263030	1107301.2	155728.4
2005 – 2006	1938350	1568241.6	370107.9
2006 – 2007	2964383	2580414.6	383968.1
2007 – 2008	3969338	3281148.6	688189.7
2008 – 2009	4553067	3631151.3	921915.3
2009 – 2010	4526495	3827659.7	698835.5
2010 – 2011	5307284	4302386.8	1004896.9
2011 – 2012	6199894	5244444.3	955449.3
2012 – 2013	11904576	7208639.4	4695936.1
2013 – 2014	13350608	9786896.5	3563711.5
2014 – 2015	16067764	12454293	3613471.186
2015 – 2016	15102322	14120879.3	981442.6

Source: CSO Statistical Year Book (Various Issues)

Appendix K. Capital Accounts of SAOs, SEEs and DCs (Absolute values in Kyat Million)

Capital Accounts			
Year	Total Internal Receipts	Total Expenditures	Surplus/Deficit
1985 – 1986	8.3	6397.5	-6389.2
1986 – 1987	14.6	6331	-6316.4
1987 – 1988	95.2	6128.4	-6033.2
1988 – 1989	79.3	4365.7	-4286.4
1989 – 1990	2149.4	6498.5	-4349.1
1990 – 1991	166.7	10209.9	-10043.2
1991 – 1992	765.1	12444.8	-11679.7
1992 – 1993	1125.2	13454.8	-12329.6
1993 – 1994	1246.8	15678.4	-14431.6
1994 – 1995	714.2	25782.5	-25068.3
1995 – 1996	887	41034.9	-40147.9
1996 – 1997	816.8	52993.1	-52176.3
1997 – 1998	886.8	68402.4	-67515.6
1998 – 1999	121.5	79598.3	-79476.8
1999 – 2000	819.4	81805.5	-80986.1
2000 – 2001	471.8	109157.5	-108686
2001 – 2002	343	80720	-80377
2002 – 2003	250	120112	-119862
2003 – 2004	749.5	452368.8	-451619
2004 – 2005	1376.8	585102.3	-583726
2005 – 2006	6750.3	785165.3	-778415
2006 – 2007	3222.8	1112440	-1109217
2007 – 2008	33549.4	1619714	-1586165
2008 – 2009	63896.7	1682969	-1619072
2009 – 2010	175046.8	2428419	-2253372
2010 – 2011	353436.4	3203333	-2849896
2011 – 2012	282962.1	2960837	-2677875
2012 – 2013	562472.3	4457029	-3894557
2013 – 2014	273041.5	4448562	-4175520
2014 – 2015	86300.1	4409953	-4323652
2015 – 2016	199596.4	4569189	-4369593

Source: CSO Statistical Year Book (Various Issues)

Appendix L. Financial Accounts of SAOs, SEEs and DCs (Absolute values in Kyat Million)

Financial Accounts			
Year	Total Internal Receipts	Total Expenditures	Surplus/Deficit
1985 – 1986	429.3	1603.7	-1174.4
1986 – 1987	472.5	1824.3	-1351.8
1987 – 1988	425.9	1500	-1074.1
1988 – 1989	456.5	1230.8	-774.3
1989 – 1990	432.1	1434.8	-1002.7
1990 – 1991	506.7	983	-476.3
1991 – 1992	532.6	919.6	-387
1992 – 1993	791.2	1435.3	-644.1
1993 – 1994	371.2	810.9	-439.7
1994 – 1995	560.2	1375.1	-814.9
1995 – 1996	615.3	1837.8	-1222.5
1996 – 1997	293.2	2062.7	-1769.5
1997 – 1998	262.6	846.8	-584.2
1998 – 1999	1170.1	1573.5	-403.4
1999 – 2000	179	1451	-1272
2000 – 2001	149.6	857.5	-707.9
2001 – 2002	1375	1548	-173
2002 – 2003	386	1609	-1223
2003 – 2004	284.8	520.6	-235.8
2004 – 2005	741.6	595.1	146.5
2005 – 2006	1105.2	534.5	570.7
2006 – 2007	4003.1	636.8	3366.3
2007 – 2008	3911.4	609.1	3302.3
2008 – 2009	17722.7	771.5	16951.2
2009 – 2010	10464.2	4513.7	5950.5
2010 – 2011	29533.5	1219.2	28314.3
2011 – 2012	12452.7	3530.8	8921.9
2012 – 2013	10625.1	138576.6	-127952
2013 – 2014	38204.4	421245.3	-383041
2014 – 2015	52274.8	497515.7	-445241
2015 – 2016	126399.5	732740.5	-606341

Source: CSO Statistical Year Book (Various Issues)

Appendix M. Balance of SAOs, SEEs and DCs (Current Account, Capital Account and Financial Account in Myanmar, Kyat Million), 1985 – 1986 to 2014 – 2015

Year	Current Account	Capital Account	Financial Account
1985 – 1986	3413.5	-6389.2	-1174.4
1986 – 1987	3568.8	-6316.4	-1351.8
1987 – 1988	206.2	-6033.2	-1074.1
1988 – 1989	-3150.4	-4286.4	-774.3
1989 – 1990	-3672.7	-4349.1	-1002.7
1990 – 1991	-1528.6	-10043.2	-476.3
1991 – 1992	-960.9	-11679.7	-387
1992 – 1993	-25.2	-12329.6	-644.1
1993 – 1994	-1793.7	-14431.6	-439.7
1994 – 1995	-4913.8	-25068.3	-814.9
1995 – 1996	1144.4	-40147.9	-1222.5
1996 – 1997	-7962.9	-52176.3	-1769.5
1997 – 1998	8181.6	-67515.6	-584.2
1998 – 1999	-14567.6	-79476.8	-403.4
1999 – 2000	-28651.9	-80986.1	-1272
2000 – 2001	-105765.6	-108685.7	-707.9
2001 – 2002	130311	-80377	-173
2002 – 2003	1707	-119862	-1404
2003 – 2004	94039.9	-451619.3	-235.8
2004 – 2005	155728.8	-583725.5	146.5
2005 – 2006	370108.4	-778415	570.7
2006 – 2007	383968.4	-1109217.2	3366.3
2007 – 2008	688189.4	-1586164.6	3302.3
2008 – 2009	921915.7	-1619072.3	16951.2
2009 – 2010	698835.3	-2253372.2	5950.5
2010 – 2011	1004897.2	-2849896.6	28314.3
2011 – 2012	5675449.7	-2677874.9	8921.9
2012 – 2013	4695936.6	-3894556.7	-127951.5
2013 – 2014	3563711.5	-4175520.5	-383040.9
2014 – 2015	3613471	-4323652.9	-445240.9
2015 – 2016	981442.6	-4369593	-606341

Note: External Receipts are not included in current, capital and financial accounts.

Source: CSO Statistical Year Book (Various Issues)

Appendix N. Balance of Capital account of State Administrative Organizations, State Economic Enterprises and Development Committees. (Kyat Million) 1985 - 1986 to 2014 – 2015

Balance of Capital Account*						
Year	SAO (Ministries & Departments)		SEE		DC	
	Internal Receipts	Expenditures	Internal Receipts	Expenditures	Receipts	Expenditures
1985 – 1986	3.3	2051.9	5.0	4298.8	-	46.8
1986 – 1987	5.6	2327.5	9.0	3876.5	-	127.0
1987 – 1988	5.2	2158.9	90.0	3826.2	-	143.3
1988 – 1989	18.4	1632.5	60.9	2621.1	-	112.1
1989 – 1990	2097.4	2750.8	55.0	3100.2	-	647.5
1990 – 1991	44.6	6050.1	16.8	3394.5	105.3	765.3
1991 – 1992	99.5	8198.0	70.1	3346.8	595.5	900.0
1992 – 1993	892.0	9756.8	233.2	3695.6	-	3.2
1993 – 1994	1198.4	12303.9	48.4	3373.5	-	1.0
1994 – 1995	599.0	20145.4	115.2	5636.1	-	1.0
1995 – 1996	580.8	31820.9	36.2	9209.6	-	4.4
1996 – 1997	490.9	42919.6	53.2	14351.3	-	4.3
1997 – 1998	803.4	50365.0	83.4	18022.6	-	14.8
1998 – 1999	79.5	60918.7	42.0	18667.7	-	11.9
1999 – 2000	407.0	60396.1	411.8	21400.8	-	8.6
2000 – 2001	256.1	87053.5	215.7	22077.0	-	27.1

Appendix N. (Continued)

Balance of Capital Account*						
Year	SAO (Ministries & Departments)		SEE		DC	
	Internal Receipts	Expenditures	Internal Receipts	Expenditures	Receipts	Expenditures
2001 – 2002	239.0	50532.0	104.0	30144.0	-	44.0
2002 – 2003	215.0	83876.0	35.0	36198.0	-	38.0
2003 – 2004	643.1	354792.6	106.4	97554.1	-	22.1
2004 – 2005	1127.1	436730.6	249.7	148348.8	-	22.9
2005 – 2006	6539.9	663875.2	210.4	121266.9	-	23.2
2006 – 2007	3143.0	950856.8	79.8	161546.5	-	36.7
2007 – 2008	33238.9	1349442.9	310.5	270217.4	-	54.0
2008 – 2009	59380.2	1332380.5	4516.5	350580.2	-	8.0
2009 – 2010	122461.8	2016065.4	42585.0	412319.3	-	33.8
2010 – 2011	353436.4	3203230.2	-	-	-	102.4
2011 – 2012	107440.0	2583566.5	175522.1	377231.4	-	39.1
2012 – 2013	398933.6	3339081.1	163530.4	1116571.3	8.3	1376.5
2013 – 2014 **	58200.8	3193863.5	214770.3	1253125.3	70.4	1572.9
2014 – 2015 **	47766.0	3373565.9	38534.1	1036345.1	0.0	41.5
2015 – 2016**	194869.0	3587557.2	6727.4	981591.3	0.0	40.7

Note: * Foreign receipts are not include in capital account.

**SEE's 2013 – 2014, 2014 – 2015 and 2015 - 2016 data include Undertaken outside the Union Fund.

Source: CSO Statistical Year Book (Various Issues)

Appendix O. Inflation and Budget Deficit Data

Year	Inflation, consumer prices (annual %)	Budget Deficit (Kyat Million)
1986	9.33	-2944.1
1987	24.76	-2796.9
1988	16.04	-4021.6
1989	27.20	-6314.7
1990	17.63	-8019.7
1991	32.27	-11204
1992	21.91	-12311.4
1993	31.83	-12094.9
1994	24.10	-15517.4
1995	25.19	-29647.2
1996	16.28	-38819.5
1997	29.70	-51739.4
1998	51.49	-57241.1
1999	18.40	-91875.5
2000	0.11	-109725.6
2001	21.10	-214804.4
2002	57.07	-78203
2003	36.59	-119405
2004	4.53	-357542.7
2005	9.37	-426950.9
2006	20.00	-407217.2
2007	35.02	-721221.7
2008	26.80	-893547.7
2009	1.47	-677667
2010	7.72	-1545046.1
2011	5.02	-1813559.8
2012	1.47	-1710015.5
2013	5.52	+1376813.5
2014	5.47	-755213.8
2015	9.49	-782129.4
2016	6.96	-3005043

Source: Statistical Yearbook (Various Issues).

Note: 2013 is budget surplus year because of significantly increase in foreign receipts.