

Chapter 6

MAIN DRIVERS OF INFLATION IN MYANMAR (1990-2017)

By

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1. Introduction

1.1 Background

Inflation is one of the most important macroeconomic indicators for economists and policy makers interested in the implication of monetary policy.

In Myanmar, the inflation rate has been fluctuating during the period 1990 to 2017 due to the changes in the economic system. There are two obvious economic changes in Myanmar. In 1990, the government changed the economic system from a planned economic system to a market oriented one. In 2012, as the new democratic government opened up the national economic system more and more, the inflation rate consequently became quite high for some time. Compared to the annual GDP growth rate, the annual inflation rate had been volatile during the period of study from 1990 to 2017. The annual inflation and GDP growth rate are shown in Figure (1.1).

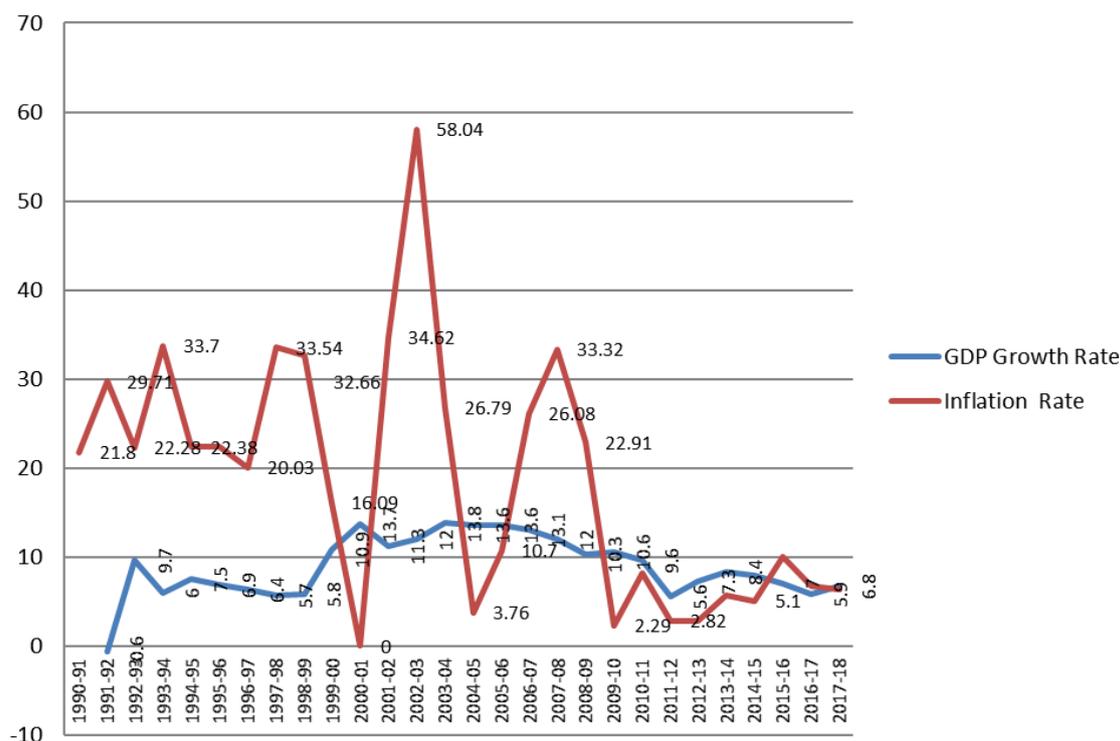
To understand the nature of inflation in Myanmar, we will consider both external and internal factors. Oil price is one of the important external factors which can affect the cost of production and import price in the domestic economy. The world's major oil production countries are located in the middle eastern region and the geographical instabilities that happened in that region caused the oil price shocks and consequently other oil importing countries suffered the impact of oil price increases.

The domestic factors which have a strong impact on inflation usually include money supply, budget deficit and GDP. Various empirical studies have analyzed the determinants of inflation by using both external and domestic factors in different countries and revealed several results.

By finding out the potential factors which are the root causes of high inflation, the policy makers can draw up the appropriate policy decisions more easily for better management of the economic condition. In this study, I will analyze the relationship between inflation and the oil price in Myanmar by considering other important domestic factors such as real GDP growth rate, unemployment rate, money supply and budget deficit.

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Figure 1.1
Annual Inflation Rate and GDP Growth Rate in Myanmar (1990-2017)



1.2 Research Objective and Questions

The objective of this paper is to investigate the relationship between inflation and oil price and unemployment rate. We focus on the following research questions:

1. Does oil price matter for inflation in Myanmar?
2. What is the role of domestic factors in inflation in Myanmar?
3. Is the Philips Curve alive and well in Myanmar?

The Philips Curve is a hypothesis introduced by the William Phillips. The Phillips hypothesis proposes that there is negative trade-off relationship between inflation and unemployment rate. The assumption of Phillips is important in monetary policy implementation. One of the main responsibilities of a central bank is to maintain price stability with a low and stable inflation rate in an economy. Due to the inverse correlation between the inflation rate and unemployment rate, central banks can maintain a low inflation only by giving up the lower level of unemployment rate. Thus, central banks have a difficult condition in the implementation of monetary policies, having to juggle the combination of low inflation rate and high employment rate.

1.3 Research Methodology and Data

This paper uses changes in consumer price index as a proxy of inflation. We will use the growth rate of oil price to study the external effect on the domestic price. We also take into account other important variables such as real GDP growth, money supply and budget deficit. We include money supply to account for the role of monetary policy in determining the inflation of an economy. We also include real GDP to show the relationship between the economic growth and inflation in

Myanmar. Moreover, we include the budget deficit in the analysis to show the impact of government expenditure on price setting in Myanmar. This study covers the period 1990 to 2017 and applies the OLS regression model.

In Myanmar, money supply plays an important role for policy makers in implementing monetary policy rather than the management of interest rate policy. Policy makers usually try to increase or decrease liquidity in the economy with the aim to stimulate the economy and manage inflation.

This paper is organized in five sections: Section 2 reviews previous studies; Section 3 describes the data and methodology; Section 4 presents and discusses the empirical results. Finally, Section 5 summarizes and concludes the study.

2. Literature Review

This section summarizes selected literature review on the relationship between inflation and potential factors which cause inflation.

2.1 Theoretical Literature on Inflation

There are numerous theories on inflation. Among them, the two most popular theories are the demand-pull inflation and cost-push inflation. The demand-pull inflation comes from the increase in the demand side. The basic causes of demand-pull inflation include increase in money supply, increase in government purchase and so on. When there is an increase in demand side excess rather than the increase in the supply side, the country's overall price level will increase and thus this situation will lead to inflation.

Cost-push inflation happens due to an increase in the price level associated with a decreasing aggregate supply. For example, a rise in the cost of raw materials used in the production process will push the firms or producers to raise the price of their products to compensate for increased production costs. Ball (2007) stated that the main factors which may cause cost push inflation are as below:

- ◆ A rise in prices of non-labor inputs, such as oil prices;
- ◆ An increase in interest rates (increasing the cost of borrowing, which is also an input price);
- ◆ Increase in wages;
- ◆ An increase in indirect taxes, such as a value-added tax or import duties or the removal of subsidies; and
- ◆ An increase in the price of imported raw material due to changes in exchange rates, international commodity prices or external shocks.

The concept of the relationship between unemployment and inflation is another well-known theory to explain wage and inflation. Phillips (1958) found an inverse relationship between inflation and unemployment, which is also called the Phillips Curve. The empirical analysis of the Phillips Curve finds that there is a negative relationship between inflation and unemployment for the short-run. However, there are some studies which counter the concept of the Phillips Curve for the long-run. Friedman (1968) challenged the validity of the Phillips Curve and showed that the long-run Phillips Curve is vertical as the unemployment rate always returns to its natural rate in long-run.

2.2 Empirical Literature on Inflation

Several country studies, and cross-country studies have been carried out to investigate the impact of oil price on inflation. According to Blanchard and Gali (2007), the strong relationship between oil price and consumer inflation in the 1970s can be explained by two episodes, i.e. low growth, high unemployment and high inflation. However, after 1980, there are many empirical studies which find that there is a weak association between oil price and inflation. Evans and Fisher (2011) found no evidence of oil price pass-through effect on core inflation (inflation exclude food and energy prices). Hooker (2002) studied inflation for the sample year 1962-1980 and 1981-2000. The results showed that oil price had a significance impact on inflation in the first sample period but not in the later sample period. Noge et al. (2017) analyzed the effect of oil price on the economy of Vietnam for the period 2000-2005 and the results showed that there is a positive and strong relationship between oil price and inflation.

With regard to the association between inflation and unemployment rate, numerous studies found various evidences. Samuelson and Solow (1960) studied the Phillips Curve by using the data of US and the results supported the Phillips hypothesis that there is a negative relationship between unemployment and inflation. However, Islam et al. (2003) examined the Phillips hypothesis for the US from 1950 to 1999 and the results showed that there is a weak association between inflation rate and unemployment rate.

3. Data and Methodology

3.1 Data

We used annual data for the period of 1990 to 2017. To access the changes in the overall price level, we apply the percentage change of the consumer price index. Regarding the external impact on domestic price behavior, we employ the growth rate of global oil prices. In addition, we use the unemployment rate to study the concept of the Phillips Curve. We also control the other macroeconomic variables namely the money supply, real GDP growth, and the budget deficit, which are likely to affect inflation in Myanmar. Data on the world oil price is obtained from the macro.trends.net website, while the data on inflation is collected from the World Bank. Data on real GDP growth is collected from the Central Statistical Organization of Myanmar. For money supply and the budget deficit, we use data from the Central Bank of Myanmar and the Budget Department. Tables 3.1, 3.2 and 3.3 present a brief description of the definition, sources and descriptive statistics of the variables used in our empirical analysis.

3.2 Empirical Model

We estimate the following simple regression model for the inflation in Myanmar:

$$\text{Inf}_t = \beta_0 + \beta_1 \Delta \text{OP}_t + \beta_2 \text{UE}_t + \beta_3 \Delta \text{RGDP}_t + \beta_4 \Delta \text{MS}_t + \beta_5 \text{BD}_t + \varepsilon_t$$

where Inf_t is inflation rate of Myanmar at the time t , ΔOP_t represents global oil price growth rate, UE_t is the Unemployment Rate, ΔRGDP_t is real gross domestic product growth rate, ΔMP_t is change in money supply and BD_t is the Budget Deficit (% of GDP) and ε_t is an error term.

For the estimation methodology, we apply the Ordinary Least Square regression model to examine the relationship between inflation, the oil price and the unemployment rate.

Table 3.1
Summary of the Variables and Data Sources

Variable	Description	Source
Inf	Inflation (% change in Consumer Price Index)	World Bank
Oil Price	WTI Oil Price Growth Rate	www.tradingeconomics.com
Unemployment Rate	Unemployment, total (% of total labor force)	World Bank's WDI
Real Gross Domestic Product	Real Gross Domestic Product	Myanmar's Statistical Organization
Money Supply	M2	Central Bank of Myanmar
Budget Deficit	% of GDP	Budget Department

Table 3.2
Descriptive Statistics and Correlation of the Variables (All Samples)

Variable	Obs	Mean	Std. Dev.	Min	Max
Inflation	29	18.065	13.969	-1.620	58.04
Global Oil Price	28	9.407	38.399	-53.517	112.191
Unemployment Rate	25	3.652	1.077	0.800	4.170
Real GDP Growth	28	8.692	3.572	-0.651	13.844
Money Supply Growth	27	29.333	9.298	11.280	47.350
Budget Deficit (% of GDP)	28	4.675	1.671	1.200	8.400

Table 3.3
Correlations

	Consumer Price Index	Global Oil Price Growth	Unemployment Rate	Real GDP Growth Rate	Money Supply Growth	Budget Deficit
Inflation	1.000					
Global Oil Price Growth	-0.224	1.000				
Unemployment Rate	0.267	0.426	1.000			
Real GDP Growth Rate	0.133	0.290	0.372	1.000		
Money Supply Growth	-0.258	0.022	0.357	0.3442	1.000	
Budget Deficit	0.112	0.215	0.104	0.3848	0.505	1.000

4. Empirical Results and Discussion

To investigate the relationship between inflation, oil price and unemployment rate, this study uses the simple OLS regression model for the period 1990-2017. The results are presented in Table 4.1 and they generally indicate that oil price cannot stimulate the overall price in Myanmar. Moreover, the Philips Curve is not evident in Myanmar for the period of study. There is a strong positive relationship between the budget deficit and inflation. The results show that there is no significant relationship between real GDP growth rate and inflation but there is negative correlation between money supply and inflation in Myanmar.

Table 4.1
The Result of OLS Regression Estimation

Dependent Variable: Inflation	
	Inflation
Global Oil Price Growth	-0.038 (0.075)
Unemployment Rate	6.285* (3.042)
Real GDP Growth	-0.247 (1.087)
Money Supply Growth	-0.939* (0.366)
Budget Deficit (% of GDP)	3.568** (2.036)
_Cons	-1.841 (13.399)
Number of observations	28
Number of time periods	30
Robust standard errors are in parentheses	
***p<0.01, **p<0.05, *p<0.1	

5. Conclusion

This Section summarizes the results of empirical analysis. The following research questions were investigated to find out whether external and internal factors have impact on inflation and to develop policies to enhance price and economic sustainability through better financial management:

1. Does oil price matter for inflation in Myanmar?
2. What is the role of domestic factors in inflation in Myanmar?
3. Is Philips curve alive and well in Myanmar?

The analysis results indicate that the global oil price used as a proxy for the external factor has no significant impact on inflation in Myanmar. Among the domestic factors, the budget deficit is one of the main drivers of inflation. During the period of study, there are two political turning points in 2012 and 2015 in Myanmar. In 2012, the new Democratic Government took over political power and implemented some development plans by increasing government expenditure. The current government led by the National League of Democracy Party has also endeavored to implement development and infrastructure projects since becoming the newly elected government in 2015. Therefore, due to these efforts, the budget deficit might have caused inflation in Myanmar. This study finds that there is a negative relationship between money supply and inflation. In Myanmar, the interest rate is quite high and thus most people prefer to save their money in banks. However, banks are not able to lend out deposits due to the high borrowing costs. At the present time, the Central Bank of Myanmar is making deposit auctions frequently to manage the excess liquidity of private banks. Therefore, due to some weaknesses in the banking sector, there may be a negative correlation between money supply and inflation in Myanmar.

5.1 Limitation of the Study

This study analyzes the relationship between oil price, unemployment rate and inflation in Myanmar by using the annual data for the period 1990 to 2017. However, this study has some limitations.

1. This study focuses on the short period from 1990 to 2017 by using simple regression model. It may be better if the analysis is for a longer period and uses one of the time series model.
2. This study approach inflation by only using the consumer price. It might be better if both core inflation and headline inflation data are used to measure the price setting behavior.

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