IMPACT OF INFLATION TARGETING MONETARY POLICY ON GDP IN ASIAN ECONOMIES

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1. Abstract

Inflation targeting is one of the major goals of Central Banks across the globe. Taming inflation bolsters growth, reinforces faith of businesses and citizens in the economy, creates a vibrant business environment and enhances the ability of an economy to respond to external shocks. Inflation targeting regime is increasingly being adopted by economies all over the world on account of these reasons. Although the mode of implementation differs, major task of the Central Governments is to specify a point or range target for inflation, design the monetary policy to achieve the specified target and take accountability for it. This paper provides an empirical assessment of the effects inflation targeting monetary policy on the GDP growth in selected South East Asian economies (Thailand, Philippines and Indonesia). The paper attempts to study the relationship between the prevailing inflation (Consumer Price Index) and the resulting GDP growth in these economies. The paper provides evidence that correlation exists between inflation targeting economies and GDP growth.

Keywords: GDP, inflation targeting, monetary policy, South Asia, Thailand, Indonesia

2. Introduction

Inflation targeting is one of the primary goals of the Central Banks throughout the world. It is imperative to control inflation, to promote price stability, which in turn helps to preserve citizens' and business' confidence in the economy, aiding and bolstering economic development.

'Inflation is when you pay fifteen dollars for the ten-dollar haircut you used to get for five dollars when you had hair'. ― Sam Ewing

Inflation in an economy, when unchecked causes currency to become devalued and lose its worth very soon. On an economic level, it hampers businesses, drives up unemployment and finally, the cost of living increases by leaps and bounds, triggering political instability. For example, Venezuela entered hyperinflation in the year 2016. Inflation rate was 274% in 2016, 863% in 2017, 130,060% in 2018 and 9,586% in 2019. As a result, citizens lost savings, unemployment increased and many citizens fled to nearby countries. Hence, inflation targeting continues to remain at the core of monetary policy of many nations.

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The Rationale for Inflation Targeting

Monetary policy, in general aims at promoting price stability (and inflation by implication), promoting maximum employment and moderating interest rates. Tools of monetary policy are adjusting interest rates, change in reserve requirements and open market operations (OMOs). An inflation targeting monetary policy, by definition, uses the tools named above in order to achieve the *pre decided* rate of inflation over a given period of time. This inflation rate is decided using a variety of quantitative and qualitative methods such as monthly economic data and qualitative data. Other aspects of financial condition and financial stability include statistical data related to household, corporates and financial institutions may also be considered. This rate is communicated to the general public which indicates that the focus of the Central Bank is targeting inflation and has taken precedence over all other objectives of monetary policy. After that, a model or methodology is setup which uses a host of indicators to forecast future inflation rates. The Central Bank then designs a forward-looking procedure to use the monetary policy tools at hand which are adjusted to meet the inflation target. In Thailand, in case the actual inflation exceeds the target by a certain pre-defined margin, then the Governor of the Central Bank writes to the finance minister, detailing the causes of missing the inflation target and the way forward in order to restore inflation to the target alongwith the time frame for doing so. The following table provides details about inflation targeting economies in the world.

Sr. No.	Country	Name of the Central Bank	Inflation Target in 2022
1.	Albania	Bank of Albania	3.00% +/-1%
2.	Armenia	Central Bank of Armenia	4.00% +/-1.5%
3.	Australia	Reserve Bank of Australia	2.00% - 3.00%
4.	Azerbaijan	C.B. of Rep. of Azerbaijan	4.00% +/-2.0%
5.	Bangladesh	Bangladesh Bank	5.30%
6.	Belarus	N.B. of Rep. of Belarus	5.00%
7.	Botswana	Bank of Botswana	3.00% - 6.00%
8.	Brazil	Central Bank of Brazil	3.75% +/-1.5%
9.	Canada	Bank of Canada	2.00% +/-1.0%
10.	Chile	Central Bank of Chile	3.00% +/-1.0%
11.	China	People's Bank of China	around 3.00%
12.	Colombia	Central Bank of Colombia	3.00% +/-1.0%
13.	Dem. Rep. Congo	Central Bank of Congo	7.00%
14.	Costa Rica	Central Bank of Costa Rica	3.00% +/-1.0%
15.	Czech Republic	Czech National Bank	2.00% +/-1.0%
16.	Dominican Rep.	C.B. of Dominican Repl.	4.00% +/-1%
17.	Egypt 7)	Central Bank of Egypt	7.00% +/-2%
18.	Eswatini	Central Bank of Eswatini	3.00% - 7.00%
19.	Euro Area	European Central Bank	2.00%
20.	Gambia	Central Bank of the Gambia	5.00%
21.	Georgia	National Bank of Georgia	3.00%
22.	Ghana	Bank of Ghana	8.00% +/-2.0%

Sr. No.	Country	Name of the Central Bank	Inflation Target in 2022
23.	Guatemala	Bank of Guatemala	4.00% +/-1.0%
24.	Hungary	Central Bank of Hungary	3.00% +/-1.0%
25.	Honduras	Central Bank of Honduras	4.00%+/-1.0%
26.	Iceland	Central Bank of Iceland	2.50%
27.	India	Reserve Bank of India	4.00% +/-2.0%
28.	Indonesia	Bank Indonesia	3.00% +/-1.0%
29.	Israel	Bank of Israel	1.00% - 3.00%
30.	Jamaica	Bank of Jamaica	4.0%-6.0%
31.	Japan	Bank of Japan	2.00%
32.	Kazakhstan	National Bank of Kazakhstan	4.00%-6.00%
33.	Kenya	Central Bank of Kenya	5.00% +/-2.50%
34.	Kyrgyzstan	N.B. of Kyrgyz Republic	5.00%-7.00%
35.	Liberia 2)	Central Bank of Liberia	8.50%/+-2%
36.	Malawi	Resserve Bank of Malawi	5.00%
37.	Mexico	Bank of Mexico	3.00% +/-1.0%
38.	Moldova	National Bank of Moldova	5.00% +/-1.5%
39.	Mongolia	Bank of Mongolia	6.00% +/-2%
40.	Mozambique	Bank of Mozambique	5.60%
41.	Nepal	Nepal Rastra Bank	6.00%
42.	New Zealand	Res. Bank of New Zealand	2.00% +/-1.0%
43.	Nigeria	Central Bank of Nigeria	6.00% - 9.00%
44.	Norway	Norges Bank	2.00%
45.	Pakistan	State Bank of Pakistan	6.00%
46.	Paraguay	Central Bank of Paraguay	4.00% +/-2.0%
47.	Peru	Central Reserve Bank of Peru	2.00% +/-1%
48.	Philippines	Bangko Sentral ng Pilipinas	3.00% +/- 1.0
49.	Poland	National Bank of Poland	2.50% +/-1.0%
50.	Romania	National Bank of Romania	2.5% +/-1.0%
51.	Russia	Bank of Russia	4.00%
52.	Rwanda	National Bank of Rwanda	5.00% +/-3%
53.	Samoa	Central Bank of Samoa	3.00%
54.	Serbia	National Bank of Serbia	3.00% +/-1.5%
55.	South Africa	South African Reserve Bank	3.00% - 6.0%
56.	South Korea	Bank of Korea	2.00%
57.	Sri Lanka	Central Bank of Sri Lanka	4.00% - 6.00%
58.	Sweden	The Riksbank	2.00%
59.	Switzerland	Swiss National Bank	<2.00%
60.	Tajikistan	N. B. of Tajikistan	6.0% +/-2.0%
61.	Tanzania	Bank of Tanzania	5.00%
62.	Thailand	Bank of Thailand	1.00% - 3.00%
63.	Tonga	National Res. Bank of Tonga	5.00%

Sr. No.	Country	Name of the Central Bank	Inflation Target in 2022
64.	Turkey	C.B. of Rep. of Turkey	5.00% +/-2%
65.	Uganda	Bank of Uganda	5.00% +/-2.0%
66.	Ukraine	National Bank of Ukraine	5.00 +/- 1%
67.	United Kingdom	Bank of England	2.00%
68.	Uruguay	Central Bank of Uruguay	3.00% - 7.00%
69.	Usa	Federal Reserve	2.00%
70.	Uzbekistan	C. B. of Rep. Of Uzbekistan	5.00%
71.	Vietnam	State Bank of Vietnam	<4%
72.	West African States	Central Bank of West African States	2.00% +/-1%
73.	Zambia	Bank of Zambia	6.0% - 8.0%

Table 1. Inflation targeting economies
Source - http://www.centralbanknews.info/p/inflation-targets.html

i.   Transmission mechanism of monetary policy

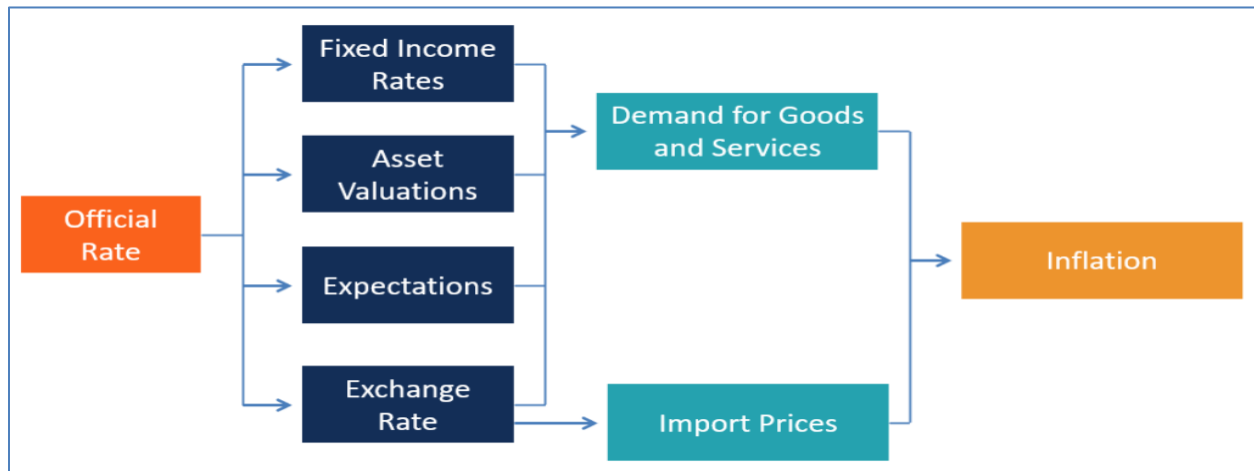The following chart shows the transmission mechanism of the monetary policy decisions in the economy.

Figure 1- Transmission Mechanism of monetary policy
Source- https://corporatefinanceinstitute.com/resources/knowledge/economics/monetary-transmission-mechanism/

If the Central Bank increases the official interest rate, the bond yields increase, directly affecting the cost of borrowing for businesses as a result. An increase in the interest rate will cause the lending rate and rate on savings to increase. As a result, households will notice a decline in the disposable income after the servicing of debt. This, in turn reduces their ability to spend and invest. Thus, other things being equal, increase in interest rates reduces individuals' and businesses' spending and consumption. Similarly, an increase in interest rate increases the cost of financing real estate, which helps to curb demand and the rise in housing prices. Increase in interest rates also increases the firms cost of capital thereby reducing profits. Demand for bonds increases due to higher interest rates, causing valuation of equity to reduce. This makes it expensive to issue new share capital for development projects. Monetary policy interest rates

pave the way for expectations and interpretations about how the Central Bank views the economy and the direction it is going in. An increase in the rate would mean that the Central Bank is using interest rate transmission mechanism to bring the inflation down to the desired level. These expectations affect the behavior of financial markets and business decisions w.r.t. fund raising and expansion plans. The effectiveness of the monetary policy largely depends on the expectations of the public and confidence of the financial system in the Central Bank. If the interest rate is increased by the Central Bank, then the domestic securities are more attractive for foreign investors. Increase in interest rates is bound to attract foreign investment, leading to appreciation of the currency. The currency appreciation results in lower import costs, directing demand outside the economy. When this happens, domestic production demand contracts resulting in lower inflation.

Research has shown that, in general effects of monetary policy actions are felt in six months w.r.t. the domestic demand and majority of the impact is felt after about a year.

ii.   Inflation targeting – A brief history

New Zealand was the first nation to explicitly model targeting inflation as a part of its monetary policy, which was followed by Canada in 1991. At that time, the Central Bank's decision to announce the inflation number was a radical idea, nonetheless. When the inflation target was announced by the Central Bank, it gave the Bank independent authority to reach that goal. The graph below shows the inflation rate from 1985-2020

Figure 2- Inflation rate from 1985-2020 in New Zealand

Source - https://www.statista.com/statistics/375265/inflation-rate-in-new-zealand/

The United Kingdom followed suit in 1992 and since then many European countries have actively adopted inflation targeting as a part of their monetary policy framework ever since.

Currently, there are 73 countries in the world where inflation targeting is followed as a framework for monetary policy.

iii.   Pre inflation targeting regimes

- **Gold Standard**

The gold standard monetary system was the one in which the value of a currency is based on or directly linked to gold. In this mechanism, the country adopting the Gold Standard fixes a price for gold and all trades in gold happen at that price. This fixed value of gold is used to determine the value of currency.

In the time period prior to the First World War, the gold standard was widely used. The trade between nations was settled using physical gold. As a result, nations with trade deficits saw their gold reserves decline, and conversely, nations with trade surpluses saw their gold reserves building up.

After the onset of the First World War, the Gold Standard was put to the test. It was a period of high political instability, deterioration of state finances, continuously changing political alliances and increase in indebtedness. During World War I, Britain, Germany and other major economies, suspended the gold standard in order to print enough money to manage the immense amounts of capital needed for war financing. This led to periods of serious inflation in these economies. Commodity price levels reached their all-time high and even rose by more than 150% in some of these nations. While the USA did not suspend the gold standard during the First World War, the exchange rate of the dollar vis-à-vis the European nation's currencies was left unchanged. This led to high exports and trade surplus for the United States. Consequently, prior to 1920, there was inflation even in the United States with wholesale prices rising by around 10%. This demonstrated the inability of the gold standard to steer economies through good and bad timed and the resilience of the standard was tested.

In due course of time, the Gold Standard was abandoned by all economies. Britain abandoned the Gold Standard in 1931, followed by the US in 1933.

- **Fixed exchange rate**

Many countries have tried to deploy alternatives to inflation targeting, such as exchange rate targeting, setting target for growth of money supply, etc. The issues with such policies, however, outweigh the benefits. In an exchange rate targeting system, for example, the Central Bank ties or pegs the country's exchange rate to another country's currency or to gold. The aim of such a policy is to keep the exchange rate of a country in a narrow band, if not fixed. As a result of fixing of the interest rate, the offshore investors, importers and exporters can undertake transactions without worrying or taking into account currency movements. A major drawback of this system is that managing the exchange rate within a pre specified band requires a large pool of reserves. Also, it makes the economy pegging the exchange rate vulnerable to shocks in the pegged country's economy. It also prevents market adjustments when the currency becomes over or under valued. It also limits the Central Bank's ability to adjust interest rates as maybe required for economic growth.

Targeting Money Supply Growth

The basis of this policy is that controlling the growth rate of the money supply can ultimately lead to price stability in the long run. Central banks were largely convinced by empirical evidence which showed that there was a close relationship between the development of money and that of nominal income or of the price level. The announcement of a monetary target was also seen as a way to enhance the credibility of the monetary authorities in the public.

However, in the UK, monetary aggregates overshot their targets and inflation accelerated in the late 1970s. It was also subsequently found that the these M3 indicators were not reliable indicators of the tightness of monetary policy. Also, financial innovation was wreaking havoc with the relationship between M3 and national income.

iv.   **Advantages of inflation targeting**

- **Increased central bank accountability and transparency-** Publishing a target or a range for inflation by the Central Bank puts the onus on the central bank for achieving the target. Inflation targeting offers transparency of policy. The Central Bank's expectations are declared to the public, which reduces guesstimates about the stance of the central bank about the state of the economy. The inflation targeting policy can also help the Central Bank to reduce political pressures w.r.t. pursuing inflation led monetary policy.

- **Anchor for sustainable growth –** Inflation, if unchecked can prove disastrous for an economy and rising costs impact lives of the common man in every nation. By having a monetary policy which focuses on keeping inflation in check, it helps to keep periods of unsubstantiated growth in check and their bursting down the line. High inflation leads to loss of competitiveness, increases the risk of flight of foreign investment, reduced value of savings among many other things.

- **Increased ability to respond to demand shocks –** In an inflation targeting monetary policy regime, the a demand shock that caused GDP to contract can be tackled by increasing inflation through easy monetary policy, thereby increasing economic activity.

v.   **Disadvantages of inflation targeting**

- **Ignoring other pressing problems**

  Opponents of the inflation targeting system argue that the targeting of inflation may take focus away from other pressing problems, for example rising unemployment.

- **Heavy reliance on forecasts**

  As the monetary policy frameworks are forward looking, the forecast of inflation and the state of the economy and various variables at play is a complex web. If inaccurate forecasts using faulty/outdated methods are made, it increases the chances of monetary policy not having the desired effect, resulting in people losing confidence in the Central Bank.

- **Very low inflation target may push the economy in deflation**

  Another danger of setting the inflation target too low is the danger of the economy slipping into deflation. In such a case, the persistent deflation may result in economic contraction.

3. Review of Literature

New Zealand was the first nation to explicitly model targeting inflation as a part of its monetary policy. At that time, the Central Bank's decision to announce the inflation number was a radical idea, nonetheless. When the inflation target was announced by the Central Bank, it gave the Bank independent authority to reach that goal. Since New Zealand adopted inflation targeting monetary policy in 1989, many studies have been undertaken on the efficacy of the inflation targeting mechanism. These studies range from the parameters to be considered for inflation targeting, difference in mechanisms involved while implementing the policy.

A very important advantage of inflation targeting monetary policy is the accountability and transparency that it renders to decision making. The central banks in question have to publish a range or a specific target. More specifically, it leads to increased central bank accountability and transparency. Research from the IMF found that 'inflation targeting appears to have been associated with lower inflation, lower inflation expectations and lower inflation volatility relative to countries that have not adopted it' (Centre for Central Banking Studies - State of the art inflation targeting - Gill Hammond)

There is a distinction made by Sterne in inflation targeting and inflation targets. He also made a distinction by stating the conditions in emerging and developed economies which are conducive to the achievement of target. Factors that led to success in UK, hence cannot be applies on an "As is" basis to the developing economies. As per Sterne, the conditions in emerging economies are noisier, meaning there might be gaps in the transmission mechanism.

Generally, inflation target is set between 1-3% for industrialized countries (Khan and Senhadji, 2000). It might be difficult to set a higher target and maintain it for India, as this might affect growth and exchange rates (Svensson, 2007). IT above a rate of 3-4% might incur welfare costs for the public at large. Target horizon for IT is also a concern for India, as it is subject to short-term economic and political shocks.

Further, this mechanism has also been critiqued. Critics are of the point of view that other pressing problems in the economy such as rising unemployment may get ignored, a low target of inflation may push the economy into deflation. Critics have also mentioned that inflation targeting is too rigid, that it allows too much discretion, that it has the potential to increase output instability, and that it will lower economic growth. Other disadvantages include that the policy can only produce weak central bank accountability because inflation is hard to control and because there are long lags from the monetary policy instruments to the inflation outcome, is an especially serious one for emerging market countries. The other disadvantages are that inflation targeting cannot prevent fiscal dominance, and that the exchange rate flexibility required by

inflation targeting might cause financial instability, are also very relevant in the emerging market country context. (Mishkin, 2000).

The most damaging critique is that strictly following IT may give too much weight to inflation stabilization, prove detrimental to the stability of real economy or other possible monetary-policy objectives, hence credibility of the policy is questioned (Svensson, 2007). For countries like Japan, where persistent policies to raise the inflation rate may end up achieving a very high inflation rate eventually and IT might be detrimental to the economy. Also, there is great ambiguity as to which measure of inflation to target: there are different CPI numbers to target; choice of GDP deflator may not be appropriate as it is delayed. Another side-effect might be that the long-term interest rate might go up as a result (Ito, 2004). Also, IT is costly in terms of institutional and technical requirements, making the framework unsuitable for some emerging market economies. The financial crisis in 2008 made quite a few economists skeptical about IT and its application to large-scale financial shocks. While some were of the opinion that IT was altogether dead (Frankel, 2012), some others called for fixing certain policies of IT to make it flexible enough to handle shocks (Broadbent, 2013).

Various economists have given their versions of how to model inflation targeting. In 2001, the IMF developed a two-country version of the Global Economy Model (GEM), a Dynamic Stochastic General Equilibrium (DSGE) model. Developed to address issues that involve both monetary and fiscal policy, it has been extensively used in the IMF to analyze the impacts of debt, fiscal stimulus, external shocks, pension reforms on domestic policies and explain the effects of IT. These models have been useful, but they have some noteworthy limitations, including that the current version of DSGE lacks linkages between the macro-economy and the financial sector (IEO, 2011). If policy makers do believe these models' forecasts, they will always be handling a very well behaved economy that faces little problems because whatever the size of external shocks, it is only a matter of time for the market adjustment to pull the country out of the mess (Garcia, 2011).

Taken together, it can be said that there is a dearth of Asia Centric analysis in the research conducted till date. Also, there has not been enough credit given to the lag in terms of the time taken for the effects of the monetary policy to percolate in the economy and show their effect. This research aims to account for both the things mentioned above.

4. **Empirical Analysis**

Scope of the research paper
The paper aims to study only those Asian economies which have adopted targeted inflation targeting monetary policy and the effects of inflation after adoption of the policy. The proposal does not aim to study the inflation and monetary policy regimes in those economies before adoption of the policy.

Further, the research aims to study the transmission mechanism of monetary policy in various shortlisted Asian economies i.e., Thailand, Philippines, and Indonesia which have adopted the policy by implementing different parameters and also understand reasons for its success.

The economies not adopting inflation targeting monetary policy are out of the scope of the research proposal.

Modelling

In this section, we use the data of inflation and GDP from selected 3 countries, namely Thailand, Philippines, and Indonesia to check for correlation among them. We also give the lag effect as the transmission of monetary policy is not instantaneous. Figure 1 below represents the CPI and GDP data of Thailand from 1960.
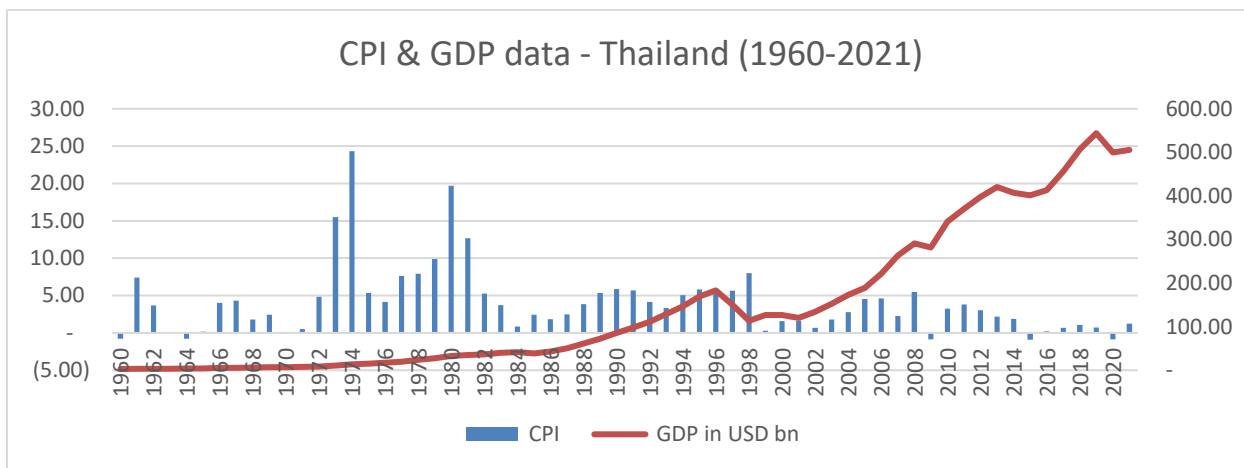

Figure 1 CPI of Thailand from 1960-2020.

Thailand adopted inflation targeting monetary policy from the May 2000. Figure 2 below represents the CPI of Thailand from the year 2000.
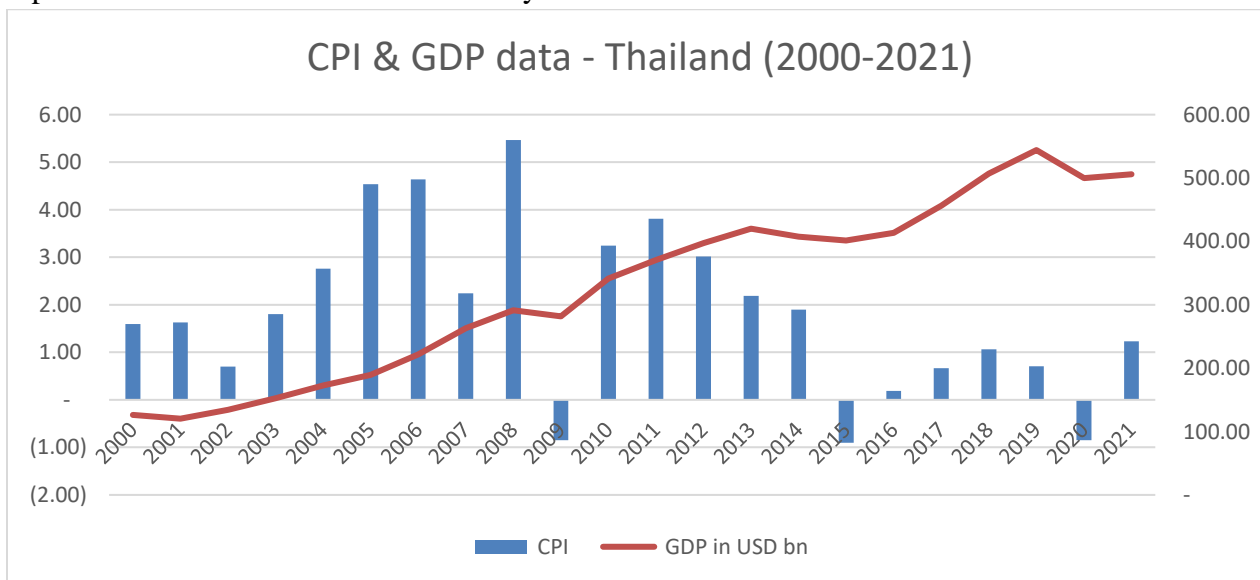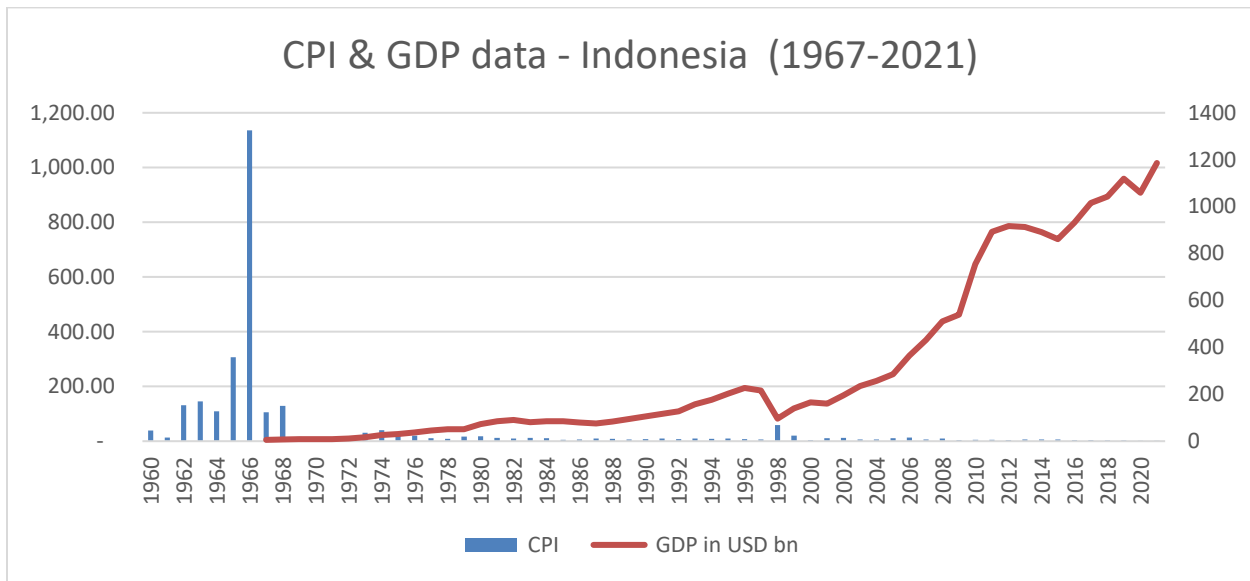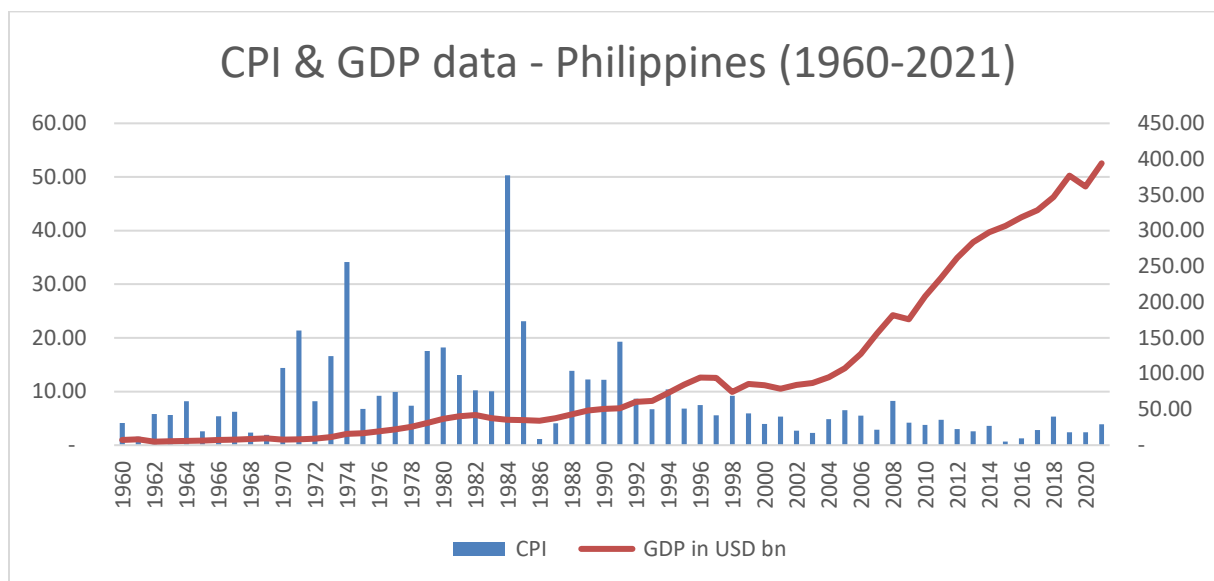

Figure 3 below represents the CPI and GDP data of Indonesia from 1967.

Indonesia adopted inflation targeting monetary policy from the 2005. Figure 4 below represents the CPI of Indonesia from the year 2000.

Figure 5 below represents the CPI and GDP data of Philippines from 1960.

CPI & GDP data - Philippines (1960-2021)

Philippines adopted inflation targeting monetary policy from the 2005. Figure 4 below represents the CPI of Philippines from the year 2000.

CPI & GDP data - Philippines -(2002-2021)
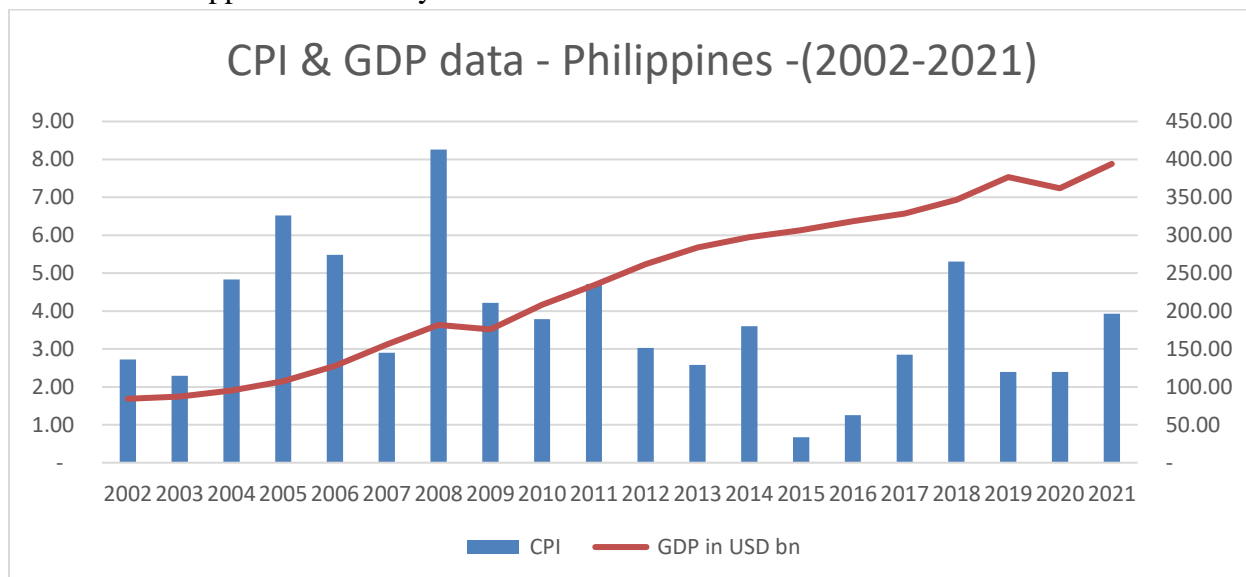
Correlation of GDP with CPI yields the following results for Thailand, Philippines, and Indonesia. The results are summarized as under –

Correlation of CPI and GDP	Thailand	Indonesia	Phillipines
Year of implementation	**2000**	**2005**	**2002**
From yr of implementation of inflation targeting policy till 2021	-0.34	-0.80	-0.36
Correlation with one year lag	-0.37	-0.73	-0.43
Correlation with two-year lag	-0.41	-0.75	-0.55
Correlation with three-year lag	-0.51	-0.59	-0.55

From the above results, it is evident that there is negative correlation between CPI and GDP i.e. as CPI is lower, GDP increases. Results with three year lag are the most relevant as the transmission of economic policy has taken full effect, controlling inflation within the said band or point target, as the case maybe.

5. Conclusions and Recommendations

The world economy as we see today is in a state of turmoil. The variables affecting the economies in different parts of the world are Russia-Ukraine war, variation in oil prices, currency instability, to name a few. However, the Central Banks have a designated job of keeping inflation in check in order to achieve price and currency stability. The research paper has empirically explained that inflation and GDP are negatively correlated, which means that decrease in inflation would lead to increase in GDP.

However, one must note that the situation in each economy and the motivation factors behind choosing inflation targeting are different.

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7. Tables and Charts

1. Table 2 – CPI and GDP data for Philippines post implementation of inflation targeting framework

Year	CPI (%)	GDP (USD bn)
2002	2.72	84.30729
2003	2.29	87.03915
2004	4.83	95.00203
2005	6.52	107.42
2006	5.49	127.6529
2007	2.90	155.9804
2008	8.26	181.6246
2009	4.22	175.9747
2010	3.79	208.3687
2011	4.72	234.2169
2012	3.03	261.9205
2013	2.58	283.9027
2014	3.60	297.4832
2015	0.67	306.4461
2016	1.25	318.6268

Year	CPI (%)	GDP (USD bn)
2017	2.85	328.4809
2018	5.31	346.8421
2019	2.39	376.8233
2020	2.39	361.7511
2021	3.93	394.0864

Source: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

2. Chart 1 – Chart for inflation in Philippines for the above mentioned period
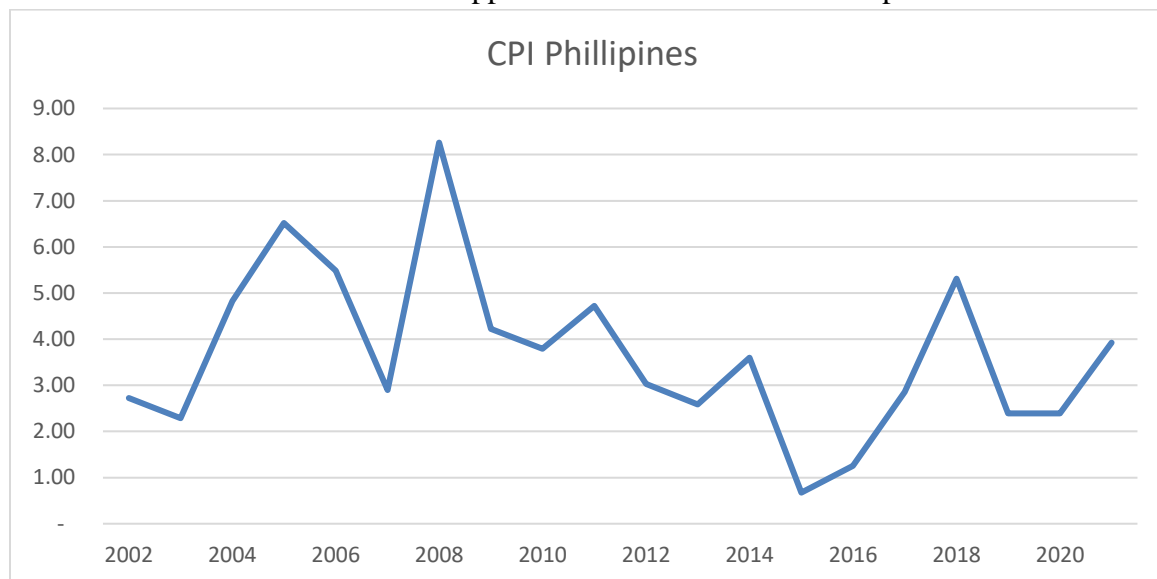
3. Table 3 – CPI and GDP data for Indonesia post implementation of inflation targeting framework
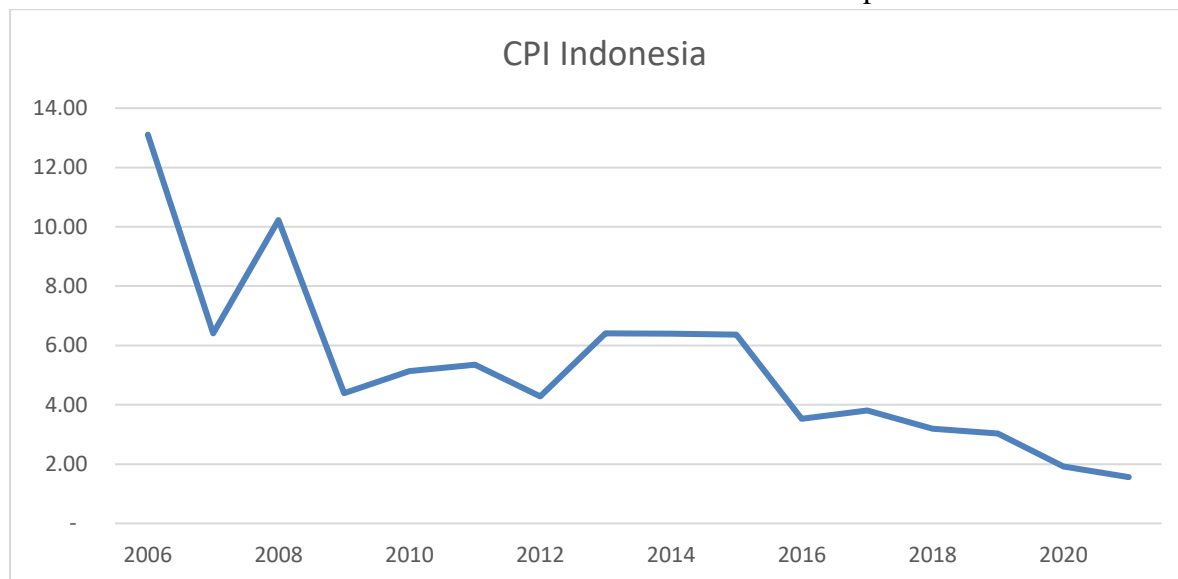
Year	CPI (%)	GDP (USD bn)
2006	13.11	364.57
2007	6.41	432.22
2008	10.23	510.23
2009	4.39	539.58
2010	5.13	755.09
2011	5.36	892.97
2012	4.28	917.87
2013	6.41	912.52
2014	6.39	890.81
2015	6.36	860.85
2016	3.53	931.88
2017	3.81	1,015.62
2018	3.20	1,042.27

Year	CPI (%)	GDP (USD bn)
2019	3.03	1,119.10
2020	1.92	1,058.69
2021	1.56	1,186.09

Source: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

4. Chart 2 – Chart for inflation in Indonesia for the above mentioned period

CPI Indonesia

5. Table 4 – CPI and GDP data for Thailand post implementation of inflation targeting framework

Year	CPI (%)	GDP (USD bn)
2000	1.59	126.3922
2001	1.63	120.2965
2002	0.70	134.3009
2003	1.80	152.2807
2004	2.76	172.8957
2005	4.54	189.3185
2006	4.64	221.7582
2007	2.24	262.9425
2008	5.47	291.383
2009	-ve 0.85	281.7104
2010	3.25	341.1048
2011	3.81	370.8191
2012	3.01	397.5582
2013	2.18	420.3332
2014	1.90	407.3395
2015	-ve 0.90	401.2964

Year	CPI (%)	GDP (USD bn)
2016	0.19	413.3662
2017	0.67	456.357
2018	1.06	506.7546
2019	0.71	544.0811
2020	-ve 0.85	499.6818
2021	1.23	505.947

Source: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

6. Chart 3 – Chart for inflation in Thailand for the above mentioned period