Impact of Monetary Policy on Socio-Economic Indicators: An Empirical Analysis of South Asian Countries

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Impact of Monetary Policy on Socio-Economic Indicators:

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II

THESIS AND DEFENSE APPROVAL FORM

The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Management Sciences for acceptance.

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III

AUTHOR'S DECLARATION

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **Impact of Monetary Policy on Socio-Economic Indicators: An Empirical Analysis of South Asian Countries** submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

The issue of unemployment, poverty and income inequality is gaining traction on a daily basis, both nationally and internationally. Despite extensive research into how to combat this threat, it appears that little progress has been made. An economy's growth may be impeded due to societal challenges such as poverty and income inequality. Many experts believe that monetary variables such as the money supply and interest rate have no significant economic impact. Empirical evidence shows a significant association between monetary policy and socio-economic indices such as poverty, inequality, and unemployment. Poverty, income inequality and unemployment are used as dependent variables. Money supply, interest rate, exchange rate and total reserve are taken as explanatory variables. The policy variables have significant relation with the dependent variables, except poverty is not influenced by the total reserve. The data for these countries are taken from World Development Indicators and International Financial statistics from 1990 to 2020. The Panel ARDL Cointegration (Pedroni) and Pooled Mean Group explore the relationship between monetary policy and socio-economic variables. From Pedroni Cointegration test shows that there is a long Run relationship between monetary variables and socio-economic variables. Pooled Mean Group explore the relationship among variables in the short run and long run. From Pooled Mean Group has explore value the of coefficients. The results support the significant relationship between monetary and socio-economic variables in the long and short run. According to the findings, central banks should assess the socioeconomic impact of monetary policy before implementing it. This study recommended that any country's central bank supply a limited amount of money which affects poverty, income inequality and unemployment significantly because money supply not only impacts these socio-economic variables but also affects the policy variables. So, it is advised that monetary authorities assess the implications of monetary policy before implementing policy.

TABLE OF CONTENT

VIII

IX

LIST OF TABLES

LIST OF ABBREVIATIONS

ADF- Augmented Dickey–Fuller test

ARDL - Autoregressive distributive Lag

CPI-Consumer Price index

ECM- Error Correction Method

ECOWAS- Economic Community of West African States

EMCCA- Economic and Monetary Community of Central Africa

EXR-Exchange rate

GDP- Gross Domestic Product

GMM- Generalized Method of Movement.

IMF-International Monetary Fund

IR-Interest rate

M2-Money Supply

MFI-Microfinance institution

MI-Misery Index

OECD - The Organization for Economic Co-operation and Development

OLS-Ordinary Least Square

PMG-Pooled Mean Group

POV-Poverty

PPP- purchasing power parity

SVAR- Structural Vector Autoregressive

TR-Total Reserve

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DEDICATION

This thesis is dedicated to my parents and kids in appreciation of their love, support, and inspiration.

CHAPTER 1

INTRODUCTION

To achieve rapid economic growth, every country on the earth is attempting to enhance its social sectors. An economy's growth may be impeded as a result of societal challenges such as poverty and income inequality. Poverty, income inequality, and unemployment are three major socioeconomic issues that affect millions of people worldwide. These issues are inextricably linked because poverty and income inequality are frequently the result of unemployment or underemployment.

According to Chambers (2006), poverty is defined as a lack of income, a lack of material possessions, a lack of physical capacity and capabilities, and a lack of necessities of life, both material and immaterial. From a socioeconomic viewpoint, Poverty Review of Economics and Development Studies, Vol. 6 (2) 2020, 323-337 324 generates violent and life-threatening behaviors that harm a society's long-term feasibility (Seccombe, 2000).

Poverty is a worldwide occurrence that can be well-defined as a state of socioeconomic deprivation (Khan, 2001). According to (Mohsin, 2013, Raimi et al., 2013)., "Pakistan has a 24 percent poverty rate, Afghanistan has a 53 percent poverty rate, Indonesia has an 18 percent poverty rate, Iran has an 18 percent poverty rate, Bangladesh has a 45 percent poverty rate, Sudan has a 40 percent poverty rate, Yemen has a 45 percent poverty rate, Algeria has a 23 percent poverty rate, Egypt has a 20 percent poverty rate, and Nigeria has a 70 percent poverty". The distribution of assets, income, and living standards among various social groupings is referred to as inequality. Poor people's access to the economy is hampered by both poverty and income disparity (Fukuda, 2006).

Poverty, income inequality, and unemployment are three major socioeconomic issues affecting millions of people worldwide. These issues are intertwined and have serious ramifications for individuals and society. However, there are several potential solutions that can be implemented to address these issues.

Poverty is, without a doubt, the most important economic issue of our day. And, because increased inequality leads to greater poverty for a given amount of wealth, income distribution is also a major concern. At the same time, monetary policy is one of the most effective tools for managing the economy in the modern era. Highlight the role of poverty and the consequences of monetary policy, it only makes sense to investigate whether monetary policy may be utilized to assist the poor. As a result, we can draw the conclusion that monetary policy has a major short- and long-term impact on poverty, income inequality, and unemployment.

India, Pakistan, and Bangladesh, three South Asian countries, face a variety of socioeconomic issues, including poverty, income disparity, and unemployment. Poverty remains a major issue in all three countries. According to World Bank estimates, the poverty rate in India is predicted to be about 20% in 2021, 24% in Pakistan, and 15% in Bangladesh. The high poverty rates are linked to issues such as insufficient access to excellent education, healthcare, and basic amenities, a lack of economic opportunities, and unequal wealth and resource distribution.

In India, Pakistan, and Bangladesh, income disparity is also a major concern. Economic growth in these countries has not always translated into equitable wealth distribution, resulting in a substantial disparity between rich and poor. According to the World Inequality Database, the top 10% of India and Pakistan's populations have a disproportionate share of wealth, while the lowest 50% have a much lower percentage. In Bangladesh, income disparity has risen in recent years as well. Unemployment: In these countries, unemployment is a major socioeconomic concern. High rates of population increase, increasing urbanization, and a lack of work prospects have resulted in high levels of unemployment, particularly among young people. According to the International Labour Organization (ILO), the youth unemployment rate in India is expected to be over 16% in 2021, 10% in Pakistan, and 9% in Bangladesh.

Researchers and decision-makers have given the issue of increasing income and wealth inequality in industrialised economies, as well as its causes and effects, a lot of attention. Given their perceived large impact on asset values, recent significant conventional monetary stimulus and quantitative easing have been thought to increase inequality. As a result, central bankers have developed an interest in inequality (Coeuré, 2012, Bullard, 2014,

Yellen, 2014, and Panetta, 2015). Income and wealth inequality may be impacted by monetary policy. The effectiveness of monetary policy can also be impacted by inequality because Lower-income households are more likely to be consumers. and are less likely to own assets and have access to credit.

Reducing unemployment and achieving rapid economic growth are the top economic priorities for both developed and developing nations. In terms of a nation's economic success, economic growth and employment are two crucial macroeconomic factors, and they are crucial components of the economic policies of many nations. People who are able and willing to work but are unable to do so because there aren't enough job prospects are said to be unemployed.

Depending on how developed or underdeveloped a nation is, a variety of factors might contribute to unemployment. It is caused by the economic structure of the nation. Capital inadequacy is the cause of unemployment in developing countries, whereas technological progress is the cause of unemployment in developed countries (Yilmaz, 2005).

Long-term growth and inflation volatility affect poverty, income inequality, and unemployment. In this critical scenario, monetary policy can be a powerful strategic tool for reducing poverty, income inequality, and unemployment, both directly and indirectly. Inflation may have an effect on income and wealth inequality. Theoretical channels and empirical evidence, on the other hand, are ambiguous on the direction of the impacts, and they appear to indicate that they are minimal in low-inflation countries.

High inflation may exacerbate income inequality, but given downward nominal rigidities, deflation is unlikely to have the reverse impact. Although there is conflicting empirical data about the relationship between inflation and income inequality, at low inflation levels, inflation does not seem to have much of an impact on inequality. Because lower-income people hold a greater percentage of their financial assets in cash, inflation can also redistribute wealth (Mulligan and Sala-i-Martin, 2000). As a result, excessive inflation may exacerbate wealth disparities. Inflation, on the other hand, can lessen wealth disparity by moving wealth from lenders to borrowers as nominal assets and obligations lose real value (Nakajima, 2015). According to Doepke and Schneider (2006), positive inflation surprises

benefit young people and middle-class families having fixed-rate mortgage debt, but they harm wealthy and elderly households.

In the short run, monetary policy that is expansionary and based on rapid rise in output is linked to bettering the lives of the poor, but over the long run, Greater well-being is associated with prudent monetary policy that is based on steady output and low inflation.

The majority of the research on monetary policy and the poor now in existence is short run oriented. Therefore, monetary policy may affect how well people are doing if these traits have an impact on poverty and inequality. Additionally, through this channel, monetary policy can influence inequality because unexpected inflation has the potential to shift wealth from creditors to debtors.

The poverty literature and world experience have also demonstrated the importance of income disparity, i.e., growth coupled with gradual changes in distribution will have a bigger influence on poverty. Contrarily this line of argument calls for additional clarification regarding how income distribution might be improved while the economy expands more quickly. All of these endogenous phenomena—growth, stability, income disparity, and poverty—are interconnected.

Monetary policy does not have an equal impact on all households because it is communicated through a variety of mediums ("current and expected interest rates, credit extension, asset prices") and because households vary widely ("in terms of socio-demographic factors like age and education, as well as economic variables like income, wealth, employment status, and housing status") It is challenging to decipher and quantitatively the various means via which monetary policy may have an impact on people in various ways.

1.1 Short-term monetary policy effectiveness

1.1.1 The channels that influence monetary policy

The monetary policy is expansionary in the short term and encourages output and inflation. In the short run, monetary policy can affect people's well-being through a number of different processes.

First and foremost, a gain in average income during a cyclical expansion helps to eradicate poverty significantly. An increase in the mean reduces the number of people below a defined cut-off for a certain income distribution around its mean. That is, an increase in all income raises the poor's income and lifts some of them the poverty line or higher. Expansive monetary policy is an effective technique for monetary policy to help the poor immediately since it increases income in the short run.

Second, there could be a cyclical shift in income distribution. During an expansion, the decrease in unemployment, rise in participation in the labor force, and increase in real wages are likely to be concentrated disproportionality among less trained labor. As a result, the income distribution may become narrower. In this situation, the expansionary policy has short run support for the poor in addition to its effects on average income. Transfers, on the other hand, are less cyclical than wages, as compared to the rest of the population, the poor earn a greater portion of their income from them. In a boom, if this impact dominates, the income distribution may widen. Considering the effect on mean income, the advantages of expansionary policy to the poor remain less than one might think.

Third, inflation brought on by expansionary policy has a distributional impact. Inflation can hurt the poor by lowering the real worth of their wages and benefits. Inflation, for example, may have contributed to the decline in actual welfare benefits in the 1970s. The poor's pension income, on the other hand, is shielded from inflation: social security, which is indexed, accounts for the elderly poor's pension income makes up considerably over 90% (U.S House of Representatives drawn, 1996, Table A-10). Finally, due to unexpected inflation, nominal debtors suffer at the expense of nominal creditors. Inflation can help the poor in this way even if they are not nominal debtors.

The short-term cyclicality of poverty has led some authors to suggest that compassionate monetary policy is loose or expansionary; however, some authors have missed the crucial fact that monetary policy's cyclical impacts on unemployment are unavoidably transient. A temporary economic boom and subsequent decline in poverty can be brought on by monetary policy. But as unemployment levels revert to their normal levels, poverty rates increase once more. Additionally, inflation is brought on by the expansionary policy. If monetary contraction is used to reduce inflation, the detrimental effects on poverty will be greater than the brief decrease during the preceding boom.

The main goals of monetary policy are to keep prices under control and to reduce unemployment. To achieve these goals, monetary authorities use policy variables such as interest rate and supply of money is to boost economic growth. Most economists believe that the expansionary monetary policy works in the interest of rich people and investors (Acemoglu et al., 2012). Moreover, the monetary policy attitude in many developed countries may affect income and wealth distribution negatively (Acemoglu and Johnson, 2012; Stiglitz, 2015). It also negatively affects underdeveloped economies by decreasing the value of real wages (Romer & Romer, 1998). On the other hand, they claim that the expansionary monetary policy has little impact on developing economies.

The role of monetary policy is limited because these economies are not documented properly. It is observed that controlled inflation in developing economies can enhance investment and growth (Junankar, 2019), but unambiguously expansionary monetary policy cannot reduce the poverty as it discourages investment and employment (Saeed, 2020). Tight monetary policy leads to high-interest rate resulting in reduction of investment and employment. Therefore, it worsens the standard of living of the poor. (Galbirth, 1998). Tight monetary policy shock is not favorable for inequality (Mumtaz & Theophilopoulou, 2010. An unexpected change in policy brings positive effect to growth and inflation and negative to the inequality (Furceri et al., 2017).

1.2 The long-term efficiency of monetary policy

1.2.1 The channels that influence monetary policy

Long-term fluctuations in economic activity and average inflation can be controlled by monetary policy. These can have an impact on the poor's well-being by altering long-term growth and income distribution.

An increase in inflation leads to uncertainty, raises expectations about future macroeconomic volatility and policy distortions, disturbs policies and financial markets, and results in high effective capital tax rates. As a result, all sorts of investments are discouraged, and growth is slowed. Macroeconomic uncertainty can have similar impacts because it is likely to hinder investment. Furthermore, high inflation and high variability may reduce work

effort and contribute rent-seeking to the extent that they make it unsure when productive activities will resume and expand the potential for appealing but useless pursuits. Additionally, it can diminish a nation's average level of living.

Through the distribution of income around its average, high inflation and macroeconomic volatility can also hurt the poor. Monetary policy has at least five routes through which it can influence long-term distribution. First, the redistribution produced by unforeseen inflation raises inequality directly. Second, uncertainty and financial market shocks encourage redistribution in the investment of physical capital, which boosts the average return on capital and depresses wages, thereby expanding the income distribution. Third, inflation may offset this by shifting the tax burden away from labor and toward the capital. Fourth, not just physical capital investment but also a capital investment is limited by inflation and macroeconomic instability, due to the uncertainty and lower effectiveness of financial markets. This thwarts a key strategy for reducing inequality. Finally, inflation and macroeconomic volatility may disproportionately impact particular sectors of the economy. Simple manufacturing and export-oriented industries, for example, may be disproportionately harmed. This can either raise or diminish inequality depending on the on the relative standing of employees in various businesses.

In the contemporary world, the gap between rich and poor is large, notably, in south Asian countries the people are affected by poverty and income inequality Rapid growth has widened this gap Policymakers and researchers are working jointly to reduce income inequality to get rid of these issues. As per the millennium development goal, nations all across the world have committed diminishing poverty and inequality. It is difficult for the developing nations to achieve these goals along with the targeted monetary policy (Yousaf et al., 2020). As a result, the connection between monetary policy and these economic indicators needs to be resolved.

The majority of the literature focuses on how inflation and monetary policy affect poverty and income inequality. (Yousaf et al., 2020) this shows that these socioeconomic indicators are not being affected by monetary policy directly. After global crisis in 2008-2009, contradiction was observed by economists about the effectiveness of the monetary policy, they had low inflation rate beside expansionary monetary policy. The economists of OECD countries realized that their inflation rate should be high through expansionary monetary policy that contradiction also existed in the developing countries as well.

The following problems have not been satisfactorily addressed by economic research, despite numerous studies, how does monetary policy affect income inequality and poverty? What are the primary ways that monetary policy affects the distribution of wealth and income?

Effective monetary policy's primary goal is to reduce inflation, to achieve sustainable growth and stabilize the exchange rate in long run, as the inflation and growth affects the poverty, income inequality and unemployment the exchange rate also affects these variables. Exchange rate is positively and significantly associated with unemployment (Islam and Sahajalal, 2019). A vast literature is available on the effect of real exchange rate on socioeconomic indicators but simultaneous use of all variables in one frame not exist in our analysis we used four policy variables to check the influence of monetary policy on poverty, unemployment and inequality of income. The distributional aspect of income can be accessed by the real exchange rate and real growth. Although, exchange rate response to income distribution and GDP is sensitive to data, methodology and country. (Oskooee rdakani, 2018). Real exchange rate also increases inflation (Asad et al., 2012) yet is vital for analysis of socioeconomic indicators. In a short, the goal of this review is to examine the relationship between socioeconomic indicators and policy variables in South Asian nations.

1.3 Significance of the Study

The major millennium development goal is to reduce poverty and income inequality around the globe. Monetary policy through different transmission channel, can affect income inequality, poverty and unemployment. The dynamic factors of every economy are the money supply and the interest rate, but we also include two more variables in our research (Money Supply, Interest Rate, Exchange Rate and Reserve ratio). These socio indicators are the major issue of any developing country. Poverty, income inequality and unemployment effect economy both socially and economically   So, if the researcher overcome these indicators the region will better off both economically as well as social. This study examines how monetary policy affects South Asian nations including Pakistan in terms of inequality, poverty, and unemployment. In the majority of the examined economies, the research confirms the evidence of a there is a strong correlation between monetary policy and real variables. The relationship's axis, though, differs depending on the indicator and the country. It is

recommended that monetary authorities take effect studies of monetary policy into account when conducting policy.

Due to wealth inequality, poverty is a significant contributor to social unrest and poses a threat of dividing a country. This happens when a nation's wealth is unfairly allocated among its people—when a small minority controls the majority of the resources. Poverty poses a serious threat to civilization and has the power to destabilize a whole nation.

A nation's high unemployment rate causes social and economic issues for the entire community. Economic issues lead to decreased production of products and services, reduced income distribution, lost tax revenue, decreased GDP rate, etc. Societal evils are caused by social difficulties, which also have a negative financial and psychological impact on people. People who struggle to pay their bills on time experience significant levels of stress, which can result in health issues, early deaths, suicides, and other issues.

There is the vast of the literature is available .in our research we used the three dependent and four policy variables are included. No pervious study has complied all these variables in one picture so it gives us the broader picture and better understanding This study shows the movement of socioeconomic indicators when all four policy variables are used in our models. As a result, it is unclear which policy factor is more influential in influencing socioeconomic indicators.

1.4 Gap of the Study

In present era, the gap in both rich and poor has grown wider. Policies are also primarily designed for non-poor people, making them less effective in eradicating poverty, reducing income inequality, and increasing employment levels in society. Many researchers have worked on the same issues using various techniques, methods, and factors that influence these variables. In this paper, we use four monetary policy variables to address the problems of poverty, income inequality, and unemployment: interest rate, money supply, exchange rate, and total reserve. The goal of this study is to quantify all four policy variables in one frame that will depict the overall picture of monetary policy, through monetary transmission mechanism channels (MTM) and some other channels which effect the inequality poverty and unemployment, in south Asian countries. Three countries have used for the study Pakistan, India and Bangladesh. All these countries having facing the same economic and social issues. Poverty, income inequality and unemployment are the major issues of these countries. These

countries are covering the 88% population of the south Asian region. Bangladesh and India have significant improvement in GDP but some economic challenges still lie ahead. Like poverty, income inequality and employment. Pakistan is also facing the same challenges related to these issues. Although these countries have different policies and Economic Growth yet have same social issues such as poverty, income inequality and unemployment.

1.5 Objectives of the Study

This study aims at following objectives:

1. The first objective is to find the impact of monetary policy on income distribution and unemployment in selected South Asian nations.

2. The second objective of the study is to find the impact monetary policy on poverty in selected South Asian countries.

1.6 Research Question

The research reveals the need for a solution to the following query:

1 How do South Asian countries' socioeconomic indices respond to changes in monetary policy?

1.7 Delimitation of the Study

In comparison to other regions, South Asia has been hosting a disproportionately large proportion of the world's income and multifaceted poverty. This is because of issues consisting of susceptible infrastructure, terrible monetary plays political uncertainty, and poverty in every of those countries. The COVID-19 has driven tens of thousands and thousands of humans lower back into poverty in numerous South Asian countries, inclusive of India, Bangladesh, and Pakistan. To alleviate poverty in South Asia, policy-makers ought to now opposite growing meals and commodity prices, which can be inflicting monetary insecurity.

In this research we used three countries India, Bangladesh and Pakistan and three socio-economic indicators in our study. which has serval reasons.

a.   Availability of the Data

b.   South Asia has received increased attention in recent years as a region that is successfully integrating into the global economy. To obtain the greatest benefits from faster

growth and poverty reduction, the region will need to strengthen regional and bilateral cooperation in a variety of areas. Closer bilateral cooperation and integration between major South Asian countries, such as India, Pakistan and Bangladesh, will help to strengthen the South Asian Association for Regional Cooperation (SAARC) and ensure the effectiveness and efficiency of their activities. Like many other South Asian nations, India has a young population. Future economic growth is simultaneously made possible by this, but policymakers are faced with the difficulty of generating employment. The World Bank estimates that between 2020 and 2050, the working-age population of South Asia will increase by almost 254 million, or 30.6% of the global increase. 16.5% of the increase will come from just one country: India. China's population of working age will decrease by about 226 million over the same time period, along with declines in most of the developed world.

c.   Pakistan, India and Bangladesh are three South Asia neighboring countries, sharing common history but presenting different political and economic scenarios since beginning. Pakistan and India started its journey as independent nations 1947 (almost 75 years old), Bangladesh in 1970 almost 52 years old.

d.   India and Pakistan are two biggest nations in the south Asian region. Both have stared their economic journey around the same time after gaining independence. In 1960 Pakistan Gdp Per capita used to be higher than India. However, over the years, India has not only surpassed Pakistan's gdp per capita but taken a commanding lead on almost every economic front.

Although all these countries have different economic conditions like GDP, Trades, Inflation, Population and many more but having the same core problems. (Poverty, Income inequality and unemployment).

In this research we used three Socio-economic indicators due to has serval reasons.

- Income inequality, unemployment, and poverty are all linked in different ways. Here are a few scenarios:
    1. Poverty and unemployment: One of the main reasons of poverty is unemployment. People may struggle to make ends meet and possibly drop below the poverty line when they can't find employment or are underemployed. Similar to this, people who are poor may find it difficult to obtain healthcare, education, and other resources that could aid them in finding work or developing their skills, creating a cycle of poverty and unemployment.

2. Poverty and money Inequality: The unequal distribution of money among various groups of people is referred to as income inequality. In many instances, income inequality can increase poverty levels because those at the lowest income levels may find it difficult to satisfy their basic needs. Contrarily, poverty can worsen income inequality because those who are poor may have less access to healthcare, education, and other resources that could help them increase their capacity to generate income.

3. Unemployment and Income Inequality: Because it restricts access to employment chances and lowers unemployed people's incomes, unemployment can exacerbate income inequality. As people from low-income households may find it difficult to access education and job training programs that could help them find employment, high levels of income inequality can also add to higher rates of unemployment.

Overall, there is a strong connection between poverty, unemployment, and wage inequality, and these factors can reinforce one another in a vicious cycle. A comprehensive strategy that incorporates measures to increase employment, decrease income inequality, and reduce poverty is needed to address these problems. This might entail funding initiatives for job training and education, interest rate, exchange rate, bolstering social safety net programs, and encouraging inclusive economic development.

1.8 Rationale of study

Outstanding growth and reduce in poverty, income inequality and increase in unemployment level of many developing countries like China, Malaysia, Taiwan and Singapore. As the signatory of Millennium development goal all these countries reduce poverty, increase employment level and to reduce income inequality. If all these countries can overcome these issues, then it is possible for south Asia as well.

1.9 Purpose of the study

The study's aim is to introduce a monetary policy which is non-inflationary one side but on other side it is supportive to eradicate poverty, increase   employment and reduce inequality from the south Asian region. It is also the purpose of the study that how the policy variables that is, Money supply, interest rate, exchange rate and reserve ratio behave in south Asian region.

1.10 Focus of the study

The study focuses that either monetary policy can play its role to reduce poverty, income inequality or unemployment or not in south Asian region and hopefully outcomes of this research will help most of the developing countries. To identify about the basis behind the bad condition of the south Asian region regarding to the poverty, income inequality and unemployment, hypotheses are formulated and study about the impact of monetary policy is undertaken. Appropriate econometric model is used foe empirical analysis. Recommendations to achieve the goal through monetary policy are given in conclusion.

1.11 Scope of the Study

In the term of research scope is confined to assess the effect of money related arrangement to get rid of the socioeconomic indicators. Covering the period of this study is from 1990 to 2020.

CHAPTER 2

LITERATURE REVIEW

Many economists have suggested that the high-income group and financiers profit the most from expansionary monetary policy. By lowering the actual value of wages, inflation brought on by expansionary monetary policy, on the other hand, has a detrimental impact on the economy's underprivileged sectors. On the other side, tight monetary policy and rising interest rates result in decreased investment and overall employment. Again, this causes the poor to ultimately lose out and suffer.

Many studies have been accomplished for monetary policy (Balac (2008), De (2016) and Blanchard (2003) on poverty and income equality but only a few studies are present which focus on the monetary policy and social economic indicators namely; poverty, income inequality, unemployment and other economic determents.

Saeed (2020) investigated the impact of monetary policy for poverty reduction in Pakistan. According to her, the expansionary as well as contractionary monetary policy is not a significant tool to reduce poverty. She further analyzed that if the central bank uses the loose monetary policy to raise the supply of money, more money in the market which led to the inflation and increase in poverty. In the contrast, if the central bank sets the high interest rate, it cannot get significant decline in poverty. High interest rate decreases the investment and overall employment.

Yannick and Ekobena (2014) analyzed how monetary policy influences poverty and inequality of income and consumption of household by using panel data and GMM estimator of different countries of the United State and ENCCA. In contrast to the US, expected monetary policy has little impact on income inequality or poverty in EMCCA nations.

2.1 Theoretical Literature

Based on several schools of thought regarding the efficiency of monetary policy in relation to the variables relating to poverty, inequality, and unemployment.

2.1.1 Classical Views on Monetary Policy

The classical monetary policy has neutral effect on the economy. Monetary variables can only affect the price level, while the output, unemployment, purchasing power, poverty etc., remain unchanged. According to the classical, the expansionary monetary policy leads to increase nominal variables like inflation and wage rate while the contractionary monetary policy leads to deflation. That's why Classical gave less attention to the nominal variables and much importance to the real variables. As a result, the classical influence of monetary policy on poverty and income inequality remains ambiguous because nominal variables were given less weight than real variables.

2.1.2 Keynesian Views on Monetary Policy

In Keynesian view, the monetary policy has a vital contribution in effecting the economic activity. Any change in monetary policy can bring permanent change in output, unemployment, aggregate demand and income. When money supply increases, it decreases the interest rate, capital will become cheaper and investment will increase which enhance the employment level, output and income of the economy. Keynesian did not discuss the impact of poverty clearly. When the economy is trapped in the liquidity trap, monetary policy is ineffective.

2.1.3 Monetarist Views of Monetary Policy

The Monetarist theory claims that, changes in the supply of money have a significant impact on national growth in short term, as well as the price level. Inflation, according to monetarists, is always a monetary phenomenon. Money is clearly the major factor driving cyclical fluctuations in output and employment.

2.1.4 New Keynesian Monetary Policy

New Keynesians were the proponent of wages and price stickiness, that is according to them Prices and wages are not flexible as in classical views. According to the "wage rigidity theory" put out by New Keynesian economists, money is not neutral and that monetary factors have an impact on real variables. New Keynesian depicts the best picture of Phillips curve that stated that there is trade-off between inflation and unemployment. If the inflation decreases the more people will be employed and vice versa.

2.2 Empirical Literature

The impact of monetary policy transmission on inequality in OCED nations was examined by Farjnezhad et al. in 2020.The authors used three transmission mechanism to check the inequality. They concluded; first, in expansionary monetary policy average income increases and reduces poverty directly. Secondly, monetary policy has positive effects on the poor through increase in employment and thirdly, they the loose monetary policy deteriorated income distribution due to fall in real values.

Takon, and Itas, (2020) checked the impact of monetary policy on price stability. They used OLS to check the relationship between inflation, interest, and exchange rates, where Inflation is a price stability variable. The significant effect of exchange rate on inflation had been observed, but in the case of interest rate it is insignificant.

Mangnejo et al., (2020) investigated the empirical relationship between inflation and unemployment. They aim to analyze the effectiveness of Philips curve in Pakistan. They used ganger causality test to check the causation between two variables. According to their research, the inflation was high at the last decade of 20th century. From 2001 to 2005 the inflation reduces which leads to increase in unemployment, and from 2005 to 2010 there was a significant increase in inflation which reduces unemployment. Their conclusion shows that the Philips curve is effective in Pakistan.

Rehman et al., (2019) explored the impact of monetary policy on economic growth by adopting multivariate analysis technique and used primary as well secondary data. They used different economic variables of developing countries and test the significant of these impact variables on economic growth.

Das (2019) used time series analysis to determine whether there is a strong link between inflation and income inequality.

Mumtaz and Theophilopoulou (2017) examined the monetary policy impact on income inequality in UK. They explained that shock in monetary policy brings significant fluctuation in inequality. They used SVAR and estimate the tight monetary policy shock is not in the favour of inequality.

Furceri et al., (2017) analysed that the unexpected change in policy brings change in growth and inflation.

Dong and Xiao (2018) constructed consumption channel of monetary policy with money and government bond to explain the unemployment. They conclude that when central bank withdraws the bonds through open market operation it affects the household consumption that decreases bond holding bonds and firm production also decline which lead to increase in unemployment.

Selim and Hassan (2019) analysed the comparison of "with interest and without interest" monetary policy and its impact on inflation and unemployment. The author divided 23 developed countries into two groups. Misery index (MI) is used to calculate inflation plus unemployment rate. MI is relatively higher where "interest-base" monetary policy is adopted and lowers for "interest-free" monetary policy.

Junankar (2019) had reviewed monetary policy, growth and unemployment in developing countries. He investigated that the monetary policy has a limited role in the growth; He said that the contribution of money is small because the economy in developing countries is not completely documented and financial system is not proper established, large proportion of GDP depends on agriculture, but have some impact on inflation.

Crowe (2006) used panel data to find a positive relationship between loose monetary policy and income inequality.

Correspondingly, according to Albanese's (2007) analysis, distributional conflict was the cause of the cross-country link between inflation and income disparity brought on by expansionary monetary policy. The model in this study demonstrates the positive relation between inflation and income inequality which makes the condition of poor worse. The poor expected to hold more money which is the part of their purchases and experience heavy loss as compare the rich.

Romer and Romer (1998) make empirical based study and used time series data of the USA and examined that how poverty and income inequality are being affected by monetary policy in short along with long run. They found that loose monetary policy better off the poor in short run due to boom while and long run stability can improve the welfare of the poor.

Fowler and Wilgus (2005) also discover that well-being of the poor can be improved by expansionary monetary policy.

Dissanayaka (2019) showed the "relationship between exchange rate and inflation". The author said that to maintain the inflation at lower rate, most of the time policy makers

depreciate the exchange rate but this devaluation would cast worse effects on the balance of payment and real GDP. According to his finding, he argued that the devaluation in exchange rate would not become source of ongoing inflationary pressure. It affects the domestic price and rate of change of price is substantially lower at which level the deprecation occurred.

Using data from 29 years, Islam and Sahajalal (2019) conducted an empirical analysis on Bangladesh's GDP, exchange rate, inflation, and unemployment. OLS has been used to check the relationship among these variables. According to their research, the unemployment did not significantly affect by the GDP while negatively affected by inflation rather it has been positive and significantly affected by exchange rate.

Asad et al., (2012) examined the effect of the real effective exchange rate on inflation in Pakistan. Time series data has been used from 1973 to 2007 for real GDP, nominal GDP, real effective exchange rate etc., prices and money supply. OLS has been used to check the relationship among these variables. A positive and strong association was found among the real effective exchange rate and rate of the inflation and velocity growth.

Shahzad and Jaffri (2019) investigate the empirical study on exchange rate pass-through in Pakistan. The authors used the monthly data of inflation from 2007 M6 to 2018 M6 with the base year of 2007-08. They examined that the empirical results that the exchange rate, global energy inflation, output gap and lagged inflation are strongly and positively associated with monthly inflation in Pakistan. According to them, if there is 1 percentage point increase in appreciation of the US dollar against the Pakistani rupee, 0.16 percent point monthly inflation will be increased at existing time period while 0.42 percent point will be increased in long run time period.

Oskooee and Ardakani (2018) examined the asymmetric analysis of exchange rate and income distribution of 41 countries. They applied the error correction model and integration to find the asymmetric short run relation for 32 countries and asymmetric long run relation for 22 countries and concluded that if real deprecation occurs, it will worsen the income distribution.

Riberio et al., (2019) evaluated that does the real exchange rate devaluation promote economic growth. The researchers used the sample of 54 developing countries from 1990-2010 and concluded that the Real Exchange Rate does not stimulate the economic growth directly but indirectly through the income distribution channel.

Hassan et al., (2016) examined the evidence of inflation in Pakistan and used ARDL bound testing approach. "Export per capita; indirect taxes per capita; external debt per capita; exchange rate; crude oil price and inflation" variables are used from the time period of 1976 2011. Their result showed that the exchange rate, crude oil and exports have positive and significant association with inflation and in directed taxes. It also positively related with inflation while external debt negatively and not significantly affected by inflation. The previous studies show that monetary policy has impact on socioeconomic indicators such as, poverty, income distribution and unemployment.

As the rapid economic growth in most Asian countries over the last two decades has exacerbated the wealth disparity. For years, economists and policymakers have debated the role of government in decreasing poverty and inequality through various social safety net programmes, developing a fair tax base, and squeezing corruption. Nations all across the world have signed the Millennium Development Goals (MDGs) declaration, pledging to eradicate inequality and poverty. (Shakeel & Hayaat, 2020).

Numerous socioeconomic indices, such as unemployment, inflation, GDP growth, poverty, and inequality, can be impacted by monetary policy, which is frequently believed to be independent of real economic variables. However, the last two indicators—inequality and poverty—are largely ignored in practically all study on the effects of monetary policy, which is restricted to the first three. One document claim that monetary policy directly influences inflation, and another set of documents demonstrates how inflation affects poverty and inequality, indicating that there is a positive relationship between monetary policy and inflation. Although the vast majority of academics have not previously explored this full channel, it is indirectly tied to two socioeconomic characteristics.

Researchers have recently started to investigate the connection between monetary policy, poverty, and inequality for the United States and several European nations like (Apergis, 2014).

(Goshit and Longduut, 2016) Using a model "multiple regression" and time series data from the duration of 1986- 2012, the research investigates the "effectiveness of indirect monetary policy instruments in reducing poverty in Nigeria". The regression model was estimated using the Ordinary Least Squares (OLS) approach. Except for money supply, real GDP, unemployment rate, and balance of payment, from the OLS regression technique the results showed that poverty rate could not significantly affected by interest rate, banking

sector credit to the economy, bank reserve requirement, bank liquidity ratio, central bank discount rate, and inflation rate.

A study looks at the poverty and inequality has been impacted by of monetary policy in the United States over business cycle and in the long run in a large number of countries. The author analysis reveals that there are strong short- and long-run ties between monetary policy and the welfare of the poor, but that the short- run and long-run associations are in opposing directions. The goal of expansionary monetary policy is to achieve speedy economic development, which is related to improving conditions for the poor in the short term; however, precautionary monetary policy focuses on low inflation and stable output growth, which is related to greater welfare for the poor in long run. (Romer & Romer, 1999).

A study in Bosnia and Herzegovina comparing Islamic or interest-free microfinance to traditional microfinance found that interest-free MFIs were more socially and economically disadvantaged than regular-interested MFIs in terms of credit costs, authorized benefit periods, subsidies, and basic flexibility. It targets debt and the most vulnerable groups. (Hamad and Duman, 2014).

A study examines the link between monetary policy and poverty in the various countries by evaluating secondary data over time series. Cyclical boom through expansionary monetary policy has been proven to be related to better short-term conditions of the poor. When inflation falls and overall growth in demand through monetary policy becomes steady, the well-being of impoverished can be better in the long term. (Romer & Romer, 1998).

People and banks divert their deposits to buy bonds and securities for speculation, in order to gain money in the form of interest, and so quite a considerable amount of liquid assets for unproductive activities is set aside. However, charging interest on it increases the prices of produced products. It also fosters commerce and investment. In addition, without investing those deposits for productive investments, banks also maintain a specific percentage of their deposits with the other banks and financial institutions with better interest rates. So, there is a scarcity of money and savings for constructive investment. When capital gets small and limited, the interest rate increases since the two relate positively. More funding will be diverted to banks and speculation that further reduces real investment, opportunities for jobs, people's income, people's acquisition capacity, rising commuter price levels due to the imbalance between commodity demand and supply, leading to increasing poverty and poor mass living standards. (Farooq, 2012).

Uhlig, (2005) The outcome is that, although prices shift only step by step as a result of a monetary shock, consolidated currency-policy temblor has no clear influence on real GDP.

Another study creates links between monetary and economic policies are explored in a study. Based on the data, the exchange rate effects were founded on money supply, which impacts the gross domestic product's growth rate. In contrast, tightening monetary policy in most countries of the ECOWAS strives to prevent an inflationary increase that might have a significant impact on economic growth in the area and therefore discourage investment owing to the increase lending rate Olamide and Maredza (2019).

According to another study, lower interest rates consequence has higher growth, while increased rates outcome slow growth (Lee and Werner, 2018). Precious and Palesa (2014) With the guidance of "Augmented Dickey Fuller and Phillips Perron unit root tests", ", this study investigates how monetary policy has affected the South African economy's ability to grow throughout the years 2000 to 2010.According to the findings, the "money supply, repo rate, and exchange rate" are insignificant monetary policy tools that use to determinant growth in South Africa, however inflation is significant. According to the results, monetary policies must be used to produce a favorable investment environment that fascinates both local and foreign capital, thereby fostering long-term economic growth. Fiscal Policy tools used on the productive areas of the economy should also be increased to support economic growth. Economic growth cannot be stimulated by monetary policy itself.

In order to observe the effects of monetary policy, research employs a GMM estimate of the Panel System in Korea from 1997 to 2007 on the heterogeneous distribution of personal social welfare, i.e., income and poverty. Actual rates of interest and poverty are interlinked positively but real interest rates have no significant influence on the distribution of income. An increase of the interest rate will reduce net borrowers' expenditure. Revenue growth, as well as inflation, are badly linked to poverty. Growth in income reduces poverty and better distribution of income. Inflation will reduce poverty, while inflation improves short-term income distribution, it does not have any significant impact on long-term income distribution. This suggests that the decision-making of the poor is based on inflation. If you watch inflation and plan for a better economy, you could really spend more. The monetary policy's long-term effect on poverty gaps is above 60% of the short-term impacts (Kang, Chung and Sohn 2013). A study shows that in the EMU3 euro area economies - Germany, France and Italy, the novel process of VAR identifying innovations play a limited influence when causing output fluctuations (Rafiq and Mallick, 2008).

Research of the following variables was carried out using VAR over the period of 2005-2010: cash provision, total loans, employment rates and the monthly variables of industrial production index. The results indicate that changes in money stock (M2) had an impact on real variables like job credit and output (Cambazoğlu and Karaalp, 2012).

One more research intends to investigate the consequences of the GDP on the national saving rate in the Kingdom of Bahrain in past twenty year by employing root and co-integration tests of increased dickey-fuller unit to examine the long-term relationship between the studied variables. The results show that the nominal interest rate has a short-term, positive, and considerable impact on the domestic savings rate at 1%. The national saving rate is significantly and favourably impacted by inflation in both the short- and long-term (El-Seoud, 2014).

In Easterly and Fischer (2001), household data from thirty-eight nations investigate the relation between inflation and poverty. Their research also suggests that inflation exacerbates the income gap, making inflation worse for the poor and inflation worse for the poor compared to the rich. In addition, Agénor (2004) investigated the link between poverty and the process of macroeconomic adaptation. On the basis of cross-country statistics, the author analyzed macroeconomic policies on wages, jobs and poverty. Briefly, it illustrates that the high level of income per person reduces poverty. Moreover, the drop-in real currency rates, high transparency in the business and decent healthcare is also less important. Poverty, on the other side, is widened by inflation, increased inequality in income, and macroeconomic uncertainty.

 Nordhaus (1973) has closely related inflation and wealth inequalities to a statistical reasoning. He also discovered the same problem, but in his models, the distribution of money units over time did not account for how differently exposed different players would be to the effects of the money supply on distribution.

In its work on "Hume's theory on disproportionate monetary distribution", Von (1996) and Rothbard (1994) assert that change in supplies of money is disproportionately dispersed over the entire economy. The rise in the amount of money they receive means a tax that will punish the last visitors. This idea of monetary redistribution is a feature of Austria's theory of inflation.

The impacts of money policy shocks on consumer and income inequality are systematically increased by contractionary monetary policy actions in labor profit inequality, total profit, consumption and overall expenditure, Coibion et al (2012) investigated. However, it would be

useful to determine whether the findings of this eight-study might be applied to economies outside of the US as it was primarily concerned with the US economy.

The asset holdings are non-symmetric for Brunnermeier and Sannikov (2012), and monetary policy therefore differs from one economic agent to the other. This redistributes wealth in monetary policy. This redistributive outcome can reduce contortion such as debt extension concerns arising from methods of amplification. These mitigating effects can stimulate growth and increase the economy's overall wealth. Monetary policy can even lead to improvements in Pareto for particular scenarios that will improve the profiles of all actors in the system. We therefore call these impacts a relative redistribution of wealth to emphasis that redistribution is not a zero-sum game. Traditional monetary policy can affect the distribution of wealth in dual respects for them. Firstly, by cutting the interest rate for the short term and the cost of financing banks. Secondly, the price of assets is affected. They also find that redistributive monetary policy affects a currency area across regions.

The relationship between social spending on poverty reduction between 2004 and 2011 is discussed in Celikay and Gumus (2017) through the ECM panel. Long-term relationships demonstrate a positive link between social expenditure and poverty and a negative short-term one.

 Ferrarini et al. (2016) assess the effects of the low, middle- and high-income nations on poverty and social transfers. For 40 nations, multi-level logistic and cross-national data regression has been applied. The results showed that, for cross-country disparities in poverty, the explanatory value of transfer income is greater than that of poverty.

The triangle of poverty, growth and income inequalities is developed by Cheema and Sial (2012). For this study, aggregate data from eight 1992-93 and 2007-2008 household surveys are used. For empirical findings, model random effects were used. According to research on the growth elasticity of rural and urban areas, there is a considerably higher income gap in urban areas than in rural ones.

 As noted above, we conclude: monetary policy influences poverty and the disparity of income by growth in income, interest rate and inflation in the light of these preceding literatures. But there are diverse results in this literature survey. These studies argue that monetary policy but these variables have strong causal links, strongly supported by empirical data. Due to their extreme poverty and income disparity, developing nations may be significantly impacted by these links. The implementation of monetary policy may have an impact on the achievement of the challenging Millennium Development Goals, which must

also be met by developing nations. The linkage among monetary policy and these economic indicators is therefore extremely necessary, hence further studies are required.

Through mathematical models and empirical testing instruments socio-economic problems such as poverty, unemployment, inflation and disparities have been discussed and analyzed. The recent global trends in poverty, unemployment, and income inequality, however, demonstrate that the socio-economic problems are not resolved by uniform and invariant economic modelling. The global challenges in a broader framework need to be analyzed urgently.

CHAPTER 3

THEORETICAL FRAMEWORK

3.1 Theoretical Framework

In order to accomplish stated or preferred economic goals, the monetary authorities (Central Bank and Central Government) have the power to control the money supply. Most governments believe that the rate of expansion of the money supply affects the rate of inflation, so they work to control it. Therefore, government acts intended to affect the behaviour of the financial sector are included in monetary policy. The purpose of monetary policy is to achieve macroeconomic stability by the intentional use of monetary instruments (direct and indirect) available to monetary authorities, such as the central bank. The main tool for carrying out the directive of monetary and price stability is monetary policy.

Monetary policy is simply a plan of action carried out by the monetary authority, usually the central bank, in order to attain predetermined macroeconomic goals. The public's access to money and the movement of credit are intended to be governed and regulated.

Several recent papers, including Bemanke and Blinder (1988) and Kashyap et al. (1993), provide theoretical models that support the presence of a differentiated credit channel within the monetary transmission mechanism. This section summarizes the reasons that form the theoretical foundation for this transmission path, based on the more comprehensive studies conducted by Bemanke (1993), Gertler and Gilchrist (1993), and Kashyap and Stein (1994).

A surplus in money supply will lead to an overabundance of demand for products and services, higher prices, and a worsening of the balance of payments. The responsibility for managing monetary policy rests entirely with the monetary authorities, who have vowed over the years to exert effective control over it. In recent years, monetary policy has performed much better, and inflation has stayed at low levels while domestic output has grown rapidly. In order to continue the efforts, it is vital to work effectively with the fiscal authorities, build interbank market trust, and maintain the necessary infrastructure for the financial markets. As Given the Conceptual Frame approach, the link between monetary policy and poverty and

unemployment may be establishing via credit channels. Credit restrictions could obstruct the flow of capital to the underprivileged and the investment sector Eke, P. O. (2022). According to Taylor (1993), the framework for achieving economic growth rate and entrenching poverty reduction is provided by policy rate rule. Heffernan (2005) offers the following straightforward framework for the technical relationship between the money supply (MS) and inflation rate, using the output growth rate and goal aggregate demand.

$$P=MS-Y$$

Y is the gdp growth in our model we used gdp per capita used as a proxy of gdp. Similarly, interest rate management is expected to moderate price level towards achieving higher employment of resources and targeted gdp represented.

$$P=Irt-Y$$

P is the rate of change in price level. Irt is the interest rate. An increase in the policy rate would be passed on to producers and consumers through the banking system in the form of higher loan rates, which might deteriorate the capacity for investment and increase unemployment. This suggests that determining interest rates affects growth and poverty strategically.

3.2 Conceptual Framework
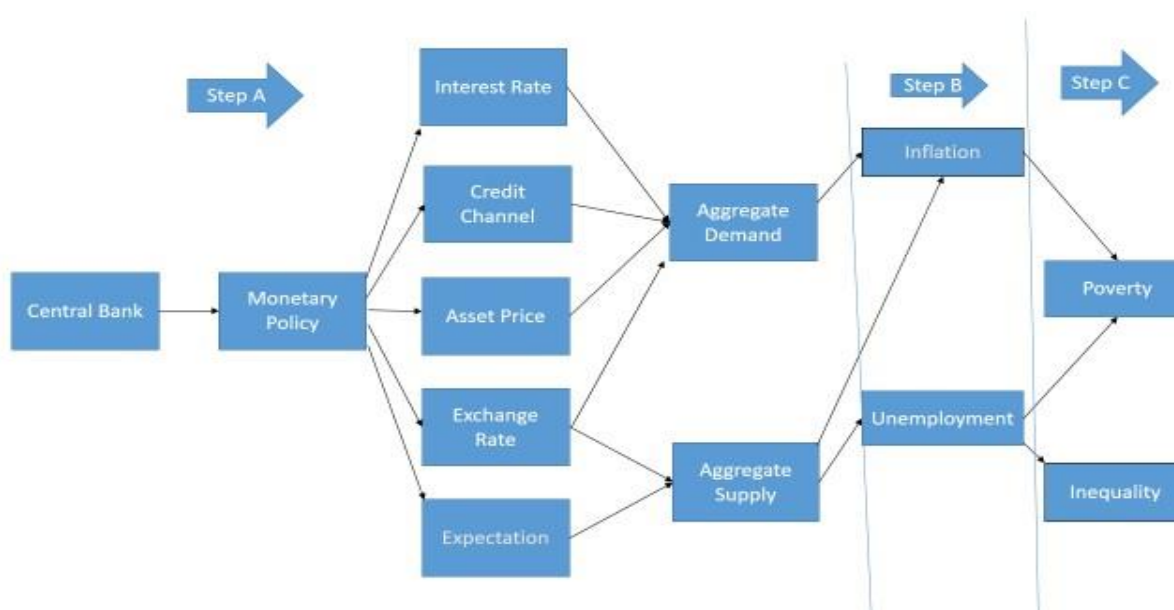
3.3 Monetary Transmission Mechanisms

3.3.1 Background

In order to determine how monetary policy affects development and employment in developing nations. The literature on monetary policy and monetary transmission mechanisms in these countries is first reviewed. Monetary policy has assumed a central role in macroeconomic policymaking ever since the 1980s debt crisis and the 1970s Great Inflation, which primarily impacted poor countries. As a result of political systems altering patterns of taxation and expenditure to advance established political interests, there are ongoing fiscal deficits that result in higher debt loads. As a result, the effectiveness of fiscal policy appears to be a topic of debate among policymakers and economists. On the other hand, there is broad agreement over the ability of monetary policy to stabilize output and inflation, which culminated in the Washington Consensus of the 1980s. In summary, it is believed that low single-digit inflation, small budget and current account deficits, a flexible exchange rate system, unfettered capital flow, and a flexible labour market would all assure stable long-term economic conditions that are favourable to economic growth. On the basis of this idea, global financial organizations like the World Bank and the International Monetary Fund (IMF) aggressively support the adoption of mainstream macroeconomic policy management by emerging nations. Some of these developing nations implemented the IMF's recommended economic reforms to keep inflation at low levels over the medium term and to maintain a low budget deficit with a target of close to zero primary deficits. Using monetary policy to reduce inflation and managing fiscal deficits are two of the typical IMF suggested techniques, according to the IMF Article IV Country Consultations Reports. The common justification for prioritizing the fight against inflation over short-term economic growth is that doing so will promote long-term economic growth by reducing economic uncertainty. The IMF recently suggested that while managing inflation in emerging nations is essential, any effects on output should also be taken into account. It is suggested that nations use the Taylor rule, which provides some consideration to the effects of monetary policies on output and inflation.

3.3.2 Monetary Transmission Mechanism in south Asian countries

General Monetary Transmission Mechanism

If monetary policy is to be used to govern economic policy in emerging nations, it is essential to comprehend the monetary transmission mechanism (MTM). Because of ongoing monetary innovations and financial market integrations, Bernanke and Gertler (1995) remark that the various ways in which the transmission mechanism influences aggregate output and prices are still unknown. The major categories of monetary transmission mechanisms that have been studied in the literature are summarized in the paragraphs that follow. It is crucial to remember that the majority of the theoretical discussion that follows takes place in the setting of industrialized OECD countries whose policies were designed to aid in, stabilize, and lower short-term production and inflation volatility. The impact of these short-term stabilization efforts on long-term economic growth and development is rarely recorded. The traditional channels of MTM are the interest rate channel, the credit channel (i.e., the balance sheet, cash flow, unanticipated price level, and household balance sheet channels), the exchange rate channel, and the asset price channel (mainly of Keynesian persuasion).

Interest Rate channel

According to the interest rate channel, stringent monetary policy raises the real interest rate, which increases the cost of capital. Given that investment spending constitutes a portion of overall spending, this would result in a decline in aggregate demand, which would cause output and prices to fall. It would have an impact on consumer housing and durable expenditure decisions in addition to firms' investment decisions. One of the most effective routes for MTM is the interest rate channel when considered as a whole. This is what the Taylor type rule proposes, which holds that rational expectations combined with sticky prices will cause an increase in real long-term interest rates in response to contractionary monetary policy. This lowers business investment and consumer spending on durable goods and housing, which lowers overall output and inflation. It goes without saying that this would cause output to drop temporarily. Whether there will be a longer-term effect leading to more investment in the future depends on how firms react to the lower (and less unpredictable) inflation rate. More details about this subject are provided below (the long-run impact of lower inflation rates).

To reduce inflation, however, this discussion is focused on tightening monetary policy. Would rising private sector investment and overall demand follow a drop in interest rates? Would businesses respond symmetrically to increases and decreases in interest rates? Most OECD nations have reduced their interest rates to levels close to zero as a result of the recent global crisis, with minimal effect on private investment. "Pushing on a string" problems are another name for this.

Exchange Rate Channel

The growth of globalization in the financial and products markets, as well as the adoption of flexible exchange rate systems by a rising number of nations, may have increased the relevance of the exchange rate channel in recent decades, creation "monetary policy fundamentally international in scope" (Mishkin, 1995,). This mechanism illustrates how appreciating home currencies cause domestic items to be more expensive than imports. As a result, the domestic market would become less competitive, net exports would decline, and overall output would decline. In this instance, whether or not the native currency strengthens or weakens is likewise influenced by the interest rate channel. If the capital flow is kept flexible, increased domestic interest rates, for instance, would encourage more capital to enter the domestic market in exchange for a higher return. As a result, the home currency may become more in demand on the foreign exchange market, appreciate, and reduce the competitiveness of the domestic country's exports on the global market. Noting that "the rise and extent of capital flows hampers monetary policy and macroeconomic stabilisation more broadly," as stated by the IMF (2015),

Asset Price Channel

A range of relative asset prices and real wealth can be impacted by monetary policy, which in turn can have an impact on total expenditure and production, in accordance with the asset price channel. In this instance, the transmission mechanism may involve stock prices, which may have an effect on consumption and investment. Tobin (1969) explains how monetary policy might impact the economy by changing the worth of stocks using his q theory. The market worth of a company divided by the cost of replacing capital is how Tobin defines q. Businesses will discover that the replacement cost of capital is less expensive in comparison to its value when q is large. It would therefore let them obtain new equity financing at a higher cost than buying the equipment. Investment spending would increase as a result, increasing overall output. There are now two ways that Stock prices could be

impacted by monetary policy. The Monetarist theory holds that because people are strapped for cash and must limit their expenditure, a contractionary monetary policy would lead them to spend less on equities. Stock prices and firm investment would decrease as a result of Tobin's q theory of investing. At the same time, the Keynesian case demonstrates how a contractionary monetary policy would promote greater bond expenditure because bonds offer better interest rate returns than equities. The substitution impact would result in a decrease in the demand for stocks and a decline in stock prices. This explains why investment would decrease in accordance with Tobin's q theory.

According to Modigliani's (1971) foundational study, consumers' lifetime resources impact their consumption spending. This is the basis for the wealth effect channel. Financial wealth, which consists of common stocks, is one such resource. As previously mentioned, tight monetary policy causes stock prices to fall, which lowers consumer wealth and reduces spending. Therefore, the output would decrease. Similar to how it impacts equities, tight monetary policy can decrease the value of real estate, which reduces household wealth and, in turn, reduces consumption expenditure, which reduces output and raises inflationary pressure.

Credit Channel

Bank lending and the balance sheet are two methods to comprehend the credit channel. Bernanke and Gertler (1995) emphasized the significance of asymmetric knowledge in explaining the MTM in this regard. According to the bank lending channel, a credit crunch brought on by contractionary monetary policy would result in a decline in bank deposits and a reduction in bank lending to firms. This might lead to less investment, which would cut both output and inflation. The credit crunch and lower quantity and amount of bank loans will primarily affect small businesses because major organizations have alternative ways of finance through the sale of stocks and bonds. In addition, banks specialize in working with small businesses, who are more likely to experience information asymmetry.

There are two methods to understand the loan channel: through bank lending According to the balance sheet channel, when a tight monetary policy is put in place, equity prices plummet (as previously mentioned), which lowers company net worth. A lower net worth would result in issues with both moral hazard and adverse selection (asymmetry of pretransaction information) (post-transaction information asymmetry). Due to the risk of default associated with low net worth companies, lenders would be reluctant to provide

financing to businesses (adverse selection problem). Additionally, lower-net-worth companies could use the loan to finance hazardous investment ventures, giving potential lenders the impression that they won't be paid back (moral hazard problem). When combined, these factors would cause lending to decline, which would then cause output and investment to decline. By decreasing net cash flow, a company's ability to get loans, and its capacity to undertake investments, higher interest rates can also negatively affect a company's balance sheet.). When combined, these factors would cause lending to decline, which would then cause output and investment to decline. By decreasing net cash flow, a company's ability to get loans, and its capacity to undertake investments, higher interest rates can also negatively affect a company's balance sheet.

The lending impact of the balance sheet channel is explained by the earlier discussion. Additionally, it might affect spending (liquidity view). In contrast to lenders' motivation to lend, this impact emphasizes consumers' drive to spend. It describes how tight monetary policy leads to a fall in financial assets (as previously discussed) and an increase in the chance of financial crisis. In such situations, customers would be less likely to invest in illiquid assets like real estate and durable goods. As a result, consumption spending would decrease, decreasing output.

Finally, a market-oriented economy would show channels for communication and expectations (Mohan and Patra, 2009). The idea is that informed market participants can help improve and guarantee the smooth operation of markets. It is believed that the central bank may best do this through informing market players of pertinent information. When the central bank is autonomous and unaffected by political parties or governments, its credibility rises.

For developing nations, the credit channel is more crucial, and monetary policy can be used by central banks to pressure banks to cut their loans and securities by altering lending limitations, according to Mohsin Khan (Khan, 2010).

3.4 Other Channels of Monetary policy Effect the Socio-economic indicators

Monetary policy has the potential to influence income inequality, poverty, and unemployment through a variety of channels (Niggle, 1989), which are compiled as follows.

3.4.1 Income Composition Channel

This channel links monetary policy to inequality since the primary sources of income vary for each household. The majority of households primarily rely on labour income, while others receive a larger share of their income from business and commercial activities. Firm owners will benefit disproportionately if expansionary monetary policy shocks increase profits more than wages (since the latter also tend to be wealthier); as a result, monetary policy shocks should result in greater inequality.

3.4.2 Channel for Financial Segmentation

If some financial market agents regularly trade and are affected by changes in the money supply before other agents, then an increase in the money supply will redistribute wealth toward regular financial market agents, as Williamson (2009) and Ledoit (2009) show (2011). Active agents in financial trades earn more than casual participants in financial trades.

3.4.3 Interest Rate Channel

Galli (2001) discussed the impact of monetary policy on income distribution through various channels both in the short run and in the long run as an increase in interest rates halts the progress of economic growth with an increase in unemployment rate, affecting different workers at various levels, particularly low skilled workers, resulting in increased income inequality in the short run.

In the short run, monetary policy influences income distribution through real interest rates. With a decrease in money supply growth, both the nominal and real interest rates rise. Increases in real interest rates will make net borrowers worse off and net lenders better off; as a result, income inequality will grow because there are more net lenders at the top of the income distribution than at the bottom.

3.4.4 Inflation Channel

The primary goal of restrictive monetary policy is to keep long-run inflation low. In the long run, low inflation slows the wearing down of money purchasing power, which can disrupt income distribution and the well-being of the poor in at least the following ways. First, it is commonly discussed that the poor are less able than the rich to protect their living standards from inflationary shocks. Due to the presence of entry barriers in most markets for non-money financial assets, the poor hold a greater proportion of their wealth in cash, whereas non-poor are extremely vulnerable to purchasing power erosion due to inflation (Ferreira et al., 1999). As a result, restrictive monetary policy tends to improve income distribution by slowing the

deterioration of monetary and financial assets. Second, lower inflation slows the provision of unemployment benefits and pensions, which reduces inequality because the recipients of these public transfers are the poorest members of society. Most research considers deteriorated purchasing power of minimum wage, high employment rate (Shawhill, 1988), while others cited increased global trade, skill biased technological change, and changes in labour market institutions as the root cause of this phenomenon, which have received a lot of attention in the literature, whereas monetary policy is rarely mentioned as a possible ingredient. Bulir (2001) argued that even after accounting for them, a large portion of the growing disparity between high and low incomes or wealth remains unexplained. However, economic research today is insufficient to provide a detailed response.

3.5 Hypothesis of Study

1. Null Hypothesis
   - There is no connection among Monetary variables and poverty.
     Alternative Hypothesis
   - There is the existence of connection among Monetary variables and poverty.
2. Null Hypothesis
   - Income inequality is insignificantly associated to Monetary Policy Variables.
     Alternative Hypothesis
   - Income inequality is significantly associated to Monetary Variables.
3. Null Hypothesis
   - Monetary Policy has insignificantly impact to reduce the unemployment.
     Alternative Hypothesis
   - Monetary Policy has significantly impact to reduce the unemployment.
4. Null Hypothesis
     The relationship between the money supply, interest rate, total reserve, and exchange rate is quite strong. Alternative Hypothesis
   - The relationship between the money supply, interest rate, overall economy, and exchange rate is not particularly strong.

CHAPTER 4

METHODOLOGY

4.1 Introduction

The approach provides a framework and a manner for various aspects of the subject to be taken into account, ultimately resulting in a useful generalization about the events (Thakur, 2013). The research plan is the product that enables the researcher to come up with a specific solution to problems encountered during study (Nachmais & Nachmias, 1992). The methods and equipment utilized for data collection, synthesis, and interpretation are described in this chapter.

The study was necessary to determine how South Asian countries' monetary policies affected socioeconomic indices. The methodology chosen for this study was explanatory and correlational as a result. Additionally, it describes the research variables, methodology, plan, data collecting, analysis, and software, among other things. It also included descriptions of the research's variables, techniques, plan, sources for data collecting, analysis methodology, software, and other elements.

The two types of research approaches are the quantitative approach and the qualitative approach. A quantitative study, according to Aliaga and Gunderson (2000), is a type of study that collects numerical data and uses statistical tools to analyze it in order to explain specific events. While the goal of qualitative research is to provide the researcher with a way to understand a phenomenon through participant observation or contact (Denzin & Lincoln, 2008). The qualitative approach emphasizes language and non-statistical tools and methods for data analysis, in contrast to the quantitative method, which places emphasis on numbers and usually incorporates statistical tools and techniques (Veal, 2005). Due to its focus on statistical tools for data analysis and quantifiable objectives, the current study has clearly adopted a quantitative methodology.

4.2 Research Purpose

Explanatory and exploratory studies fall into two groups. Both goals differ from one another and have distinguishing qualities. Exploratory research is carried out when there is insufficient knowledge about a phenomenon or a problem that has not been correctly identified (Saunders et al., 2007). Finding causes and explanations is the goal of explanation

research, which also presents data to support or refute an explanation or prediction. It is done so that some correlations between different features of the phenomenon under study can be found and reported. In order to determine the relationship between monetary policy and socioeconomic variables, the study employed an explanatory purpose. To determine whether or not monetary policy benefits socioeconomic characteristics

The two primary types of research strategies are correlation and causation. When one variable changes, the other one follows suit, which is referred to as correlation. A statistical measure of the link between two variables is called a correlation. There is a cause-and-effect relationship between the variables; this is known as causation. Changes in one variable produce changes in the other. The two variables are connected, and there is a causal link between them as well. Correlation always implies causality, even though causation may not always imply correlation. The current study aims to examine the relationship between monetary policy and socioeconomic indicators. It fits well with the correlational and causation design because of the unique context to analyses associational among variables.

4.3 Data Collection

In this study, panel cross-sectional secondary data is used. from the World Bank Data site, International Finance Statistics, National accounts data from the World Bank, OECD, the International Monetary Fund, and data derived from World Bank data on the GDP deflator including the countries Bangladesh, India, and Pakistan are used for quantitative analysis covering the period of annually 1990 to 2020.In our research we used the South Asian countries and we used the panel data.

4.4 Empirical Examination of Data

The validity of the data used to assess monetary policy must be ensured through a number of procedures. To effectively evaluate the model, the data are gathered, organized, and reformatted. Appropriate methods were used to address the many econometric difficulties that time-based models brought up. For econometric analysis, the model is stated in the most suitable way. Several econometric techniques are used to estimate the model parameters, and a number of tests are run to assess how closely the model matches the data-reflected reality. To show how it functions and what it signifies, some simulations based on potential monetary policy moves are provided.

4.5 Variables Description

As per literature the monetary policy has impact on socioeconomic indicators in south Asian countries including Pakistan, India and Bangladesh. Current study used the different variables that are selected for analysis is given below.

Table 4.1

Variables	Descriptions	Unit	Symbols	Data Source
Poverty	"Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)"	Percentage of population	**POV**	**WDI**
Income inequality	Gini coefficient	Rate	**Gini**	**WDI**
Unemployment	(Percentage of total labor force) (modelled ILO estimate).	Percentage of total labor force	**UNEMP**	**WDI**
Money Supply	Broad money annual percentage growth	percentage growth	**M2**	**WDI**
Interest Rate	Percentage of real interest rate.	Percentage	**Ir**	**WDI**
Exchange Rate	"Official exchange rate (LCU per US$, period averages)"	Rate	**EXR**	**IFS**
Total Reserve	Total reserves (% of total external debt)	percentage of total external debt	**TR**	**IFS**
Population	Population growth (annual %)	annual percentage	**POP**	**IFS**
Gross domestic product per capita	GDP per capita growth	annual percentage	**GDPPC**	**WDI**
Inflation	Consumer price index (2010 = 100)	annual percentage	**CPI**	**IFS**
Gross Fixed Capital Formation	Gross fixed capital formation (annual % growth)	annual percentage growth	**GFCF**	**WDI**

Source Author's own calculations

4.6 Operationalization of the Data or Variables
A. Dependent Variables
a. Income inequality

Income inequality is the unequal distribution of income among a population. The less evenly distributed the money is, the greater the income discrepancy. Income inequality and wealth inequality usually coexist. Wealth inequality is the unequal distribution of wealth. Populations can be divided in a number of ways to show various levels and effects of income inequality, such as income disparity based on race or gender. The degree of income disparity in a population can be examined using a variety of measurements, such as the Gini coefficient.

b. Poverty

"Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population). Poverty headcount ratio at $1.90 a day is the percentage of the population living on less than $1.90 a day at 2011 international prices. As a result of revisions in PPP exchange rates, poverty rates for individual countries cannot be compared with poverty rates reported in earlier editions.". "World Bank, Poverty and Inequality Platform. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are mostly from the Luxembourg Income Study database."

c. Unemployment

When a person is ready and able to work but does not have a paid job, they are considered to be unemployed. The proportion of unemployed people in the labour force is known as the unemployment rate. As a result, figuring out who is employed is necessary for calculating the unemployment rate.

B. Control Variables

a. Population

"Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship". (Derived from total population. Population source: (1) United Nations

Population Division. World Population Prospects: 2019 Revision, (2) Census reports and other statistical publications from national statistical offices, (3) Eurostat: Demographic Statistics, (4) United Nations Statistical Division. Population and Vital Statistics Reprot (various years), (5) U.S. Census Bureau: International Database, and (6) Secretariat of the Pacific Community: Statistics and Demography Programme).

b. Inflation

"Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used". (International Monetary Fund, International Financial Statistics and data files).

c. Gross Fixed Capital Formation

"Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. According to the 1993 SNA, net acquisitions of valuables are also considered capital formation". (World Bank national accounts data, and OECD National Accounts data files.)

d. Gross Domestic Product Per Capita

"Annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources". (Data files from the OECD National Accounts and World Bank National Accounts).

C. Independent Variables
a. Exchange Rate

The price of a currency in comparison to other currencies is known as the exchange rate. "Official exchange rate refers to the exchange rate determined by

national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). (International Monetary Fund, International Financial Statistics.)"

The price of a currency in comparison to other currencies is known as the exchange rate. According to Obadan (2012), the CBN is the primary overseer of the foreign exchange market. It periodically reviews events and issues directives and circulars directing the conduct of traders and operators in order to accomplish the intended monetary policy goals.

b. Interest Rate

"Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. The terms and conditions attached to lending rates differ by country, however, limiting their comparability". (International Monetary Fund, International Financial Statistics and data files using World Bank data on the GDP deflator).

c. Broad Money Growth

Broad money is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper.

"Broad money (IFS line 35L..ZK) is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings and foreign currency deposits of resident sectors other than the central government bank and traveler's checks and other securities such as certificates of deposit and commercial paper". (World Bank and OECD GDP estimates, International Monetary Fund, International Financial Statistics, and data files.)

D. Total reserves (includes gold, current US$)

"Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at

yearend (December 31) London prices. Data are in current U.S. dollars".
(International Monetary Fund, International Financial Statistics and data files).

4.7 Analysis Technique

This section provided a general explanation of the econometric methods used to test the relationship's applicability, as described before. This section also discusses the long-term and short-term relationships between these variables since we are interested in learning how monetary policy affects income inequality, unemployment, and poverty in a few South Asian nations. Ardl Panel cointegration estimation has been applied.

In a study, descriptive statistics are used to characterize the basic characteristics of the data. Brief summaries of the sample and measurements are provided. They serve as the foundation for almost all quantitative data analytics, along with simple graphical analysis. The method is divided into two main sections, the first of which is based on descriptive statistics, and the second of which is based on an estimate of panel ardl cointegration. In the first section, we examine relationships between monetary variables and social economic measures of unemployment, inequality, and poverty. In the second section, we test for stationary issues using panel unit root testing, and in the third section, we look into these relationships using panel ardl cointegration estimator. we used Pedroni test to check the long term significancy among the variables and then apply PMG to check the values of coefficient. In this Techniques we check the intensity of the variables i.e how much the socio-economic indicators are responded against the policy variables.

4.8 Descriptive Statistics

The fundamental properties of the data in a study are described using descriptive statistics. They offer succinct overviews of the sample and measurements. Together with straightforward graphical analysis, they provide the basis of practically all quantitative data analyses. In order to communicate quantitative data clearly, descriptive statistics are utilised. A research endeavour could include a lot of different measurements. As an alternative, we can evaluate a sizable number of individuals using any metric. We can sensibly simplify massive volumes of data with the help of descriptive statistics. Each descriptive statistic distils a lot of data into a succinct summary. The correlation is one of the most well-liked and

practical statistics. A correlation is a single number that expresses how closely two variables are related to one another.

4.9 Unit Root Test

The term unit root mean that the data has a stochastic trend. The other name of unit root is Random Walk with Drift. The Unit Root is used to check stationary conditions of data. The number of different methods that are used to check stationary conditions of Panel series data, like "Liven Lin & chunt", "Im, Pesaran and shin W-stat", "ADF- Fisher chi square", "PP- chi square" and "Hadri Z-stat" tests. In most to the research papers the researchers used "Im, pesaran shin w-stat" test to check the Unit Root or stationary condition of panel series data set.

Sample Random Walk Model equation

$Yt = pyt-1+ut$

4.9.1 Stationary Data

Many time series techniques make the assumption that the data are stationary and that stationary processes have the properties of mean, variance, and autocorrelation. If T-Statistics surpasses the crucial value, stationarity in the variable is said to exist and structure does not change over time.

Ho = "panel has unit root" (assumed individual unit root process) non stationary data

Ha= "panel has no unit root" (assumed individual unit root process) stationary data

If the Ho rejected, the series is stationary therefore it had no panel unit root. If Ho, on the other hand is not rejected we can conclude that the series had panel unit and the series had non-stationary. The test was performed on levels, if data was not stationary at level, then moved towards the first difference similarly if the data is not stationary at first difference than switched to the second difference and so on.

4.10 Model specification

Examining how monetary policy affects income inequality, unemployment, and poverty in South Asian countries is the objective of the current study. We have constructed three econometric models. In first three models we will determine the effect of monetary

policy on socio-economic indicators separately, (Yousaf et al., 2020). We will use ardl panel cotinretgration and PMG (pooled mean group). It used for the Panel data when the data has unit root, pooled mean group shows both the short and long term. Poverty, income inequality and unemployment are the main reason of inflation and it's depended on monetary policy. Researcher use the Poverty, income inequality and unemployment variable for finding the impact of monetary policy. Let

Y=(POP, GDPPC, CPI, GFCF + X)

Y used for dependent variables which are the function of some control and policy variables, X denotes the policy variables which are briefly described below and remaining variables are incorporated in the model as a control variable. The econometric model is described below.

4.11 Econometric Models
Model 1
Income Inequality and Monetary Policy

$$INQ_{it} = \alpha_o + \alpha_1 GDPPC_{it} + \alpha_2 CPI_{it} + \alpha_3 POP_{it} + \alpha_4 GFCF_{it} + \alpha_5 BMG_{it} + \alpha_6 EXE_{it}$$
$$+ \alpha_7 INT_{it} + \alpha_8 Tr_{it} + v_i + v_t + \varepsilon_{it}$$

INQ = Income Inequality (dependent   Variable)

α_o = Constant

$\alpha_{1\ldots\ldots}\alpha_8$ =Coefficients of the variables

GDPPC= Gross domestic product per capita

CPI = Consumer price index (inflation)

Pop =Population

GFCF =Gross fixed capital formation

 All these are control variables.

The Policy Variables are

BMG = Broad Money Growth (M2)

EXE =Exchange Rate

INT= Interest Rate

TR =Total Reserve

$v_i, v_t =$ are error term of the cross-sectional time periods

While ε_{it} is error term that represents the impact of additional pertinent variables used in the regression models.

Where i is for country, α_o is constant, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7,$ are the coefficient, j denotes the time period from the period of 1990 to 2020. The v_i, v_t are error term of the cross-sectional time periods while ε_{it} is error term the result of additional pertinent variables incorporated into the regression models. To arrive at accurate predictions of the monetary variables, the macro variables are used as control variables. Among these control variables are those that have a role in the causal links connecting monetary policy to socioeconomic factors.

In model 1 we had taken the income equality as a dependent variable, while other macroeconomic and socioeconomic variables would use as an independent variable. In model 1 we checked the relationship between dependent and independent variables. In this model we explored that from which policy variable the income inequality has been affected. We checked the monetary policy variables and controls variables are either useful to reduce the income equality or not.

Model 2
Impact of Monetary Policy on Unemployment

$$UNEMP_{it} = \alpha_o + \alpha_1 GDPPC_{it} + \alpha_2 CPI_{it} + \alpha_3 POP_{it} + \alpha_4 GFCF_{it} + \alpha_5 BMG_{it} + \alpha_6 EXE_{it}$$
$$+ \alpha_7 INT_{it} + \alpha_8 Tr_{it} + v_i + v_t + \varepsilon_{it}$$

Unemp = Unemployment (dependent Variable)

α_o = Constant

$\alpha_{1.......}\alpha_8$=Coefficients of the

variables

GDPPC=Gross domestic product per capita

CPI =Consumer price index (inflation)

Pop =Population

GFCF =Gross fixed capital formation

All these are control variables.

The Policy Variables are

BMG = Broad Money Growth (M2)

EXE =Exchange Rate

INT= Interest Rate

TR =Total Reserve

$v_i, v_j =$ are error term of the cross sectional time periods

While ε_{it} is error term that represents the impact of additional pertinent variables used in the regression models.

In the model above we used to check the effectiveness of monetary policy. In this model we have taken the unemployment as dependent variable while the control and other remaining monetary policy variables used as an independent variable.

Model 3
Impact of Monetary Policy on Poverty

$$Pov_{it} = \alpha_o + \alpha_1 GDPPC_{it} + \alpha_2 CPI_{it} + \alpha_3 POP_{it} + \alpha_4 GFCF_{it} + \alpha_5 BMG_{it}$$

$$+ \alpha_6 EXE_{it} + \alpha_7 INT_{it} + \alpha_8 Tr_{it} + v_i + v_t + \varepsilon_{it}$$

Pov= Poverty (dependent Variable)

α_o = Constant

$\alpha_{1.......}\alpha_8$=Coefficients of the variables

GDPPC=Gross domestic product per capita

CPI =Consumer price index (inflation)

Pop =Population

GFCF =Gross fixed capital formation

 All these are control variables.

The Policy Variables are

BMG = Broad Money Growth (M2)

EXE =Exchange Rate

INT= Interest Rate

TR =Total Reserve

$v_i, v_j =$ are error term of the cross sectional time periods

While ε_{it} is error term that represents the impact of additional pertinent variables used in the regression models.

In above mention model we had used poverty as a dependent variable. In this model we explored the relationship among the dependent, control and focused variables. We investigated that either the monetary policy variables are helpful to reduce the poverty from the south Asian countries or not. We checked that is monetary policy is suitable to eradicate the poverty or not.

4.12 Estimation techniques

4.12.1 Panel Cointegration Test

Prior to estimating the econometric model, it is critical to identify long-run relationships between the variables. When there are no long-term correlations between the variables, it can be challenging to find any substantial associations after estimating the econometric model. In order to determine the long-term relationships between the variables, the test that Pedroni (1999, 2004) provided is modified according to the Johansen technique.

4.12.2 Panel Ardl

The panel ARDL is used to re-analyze long- and short-term significance as well as to address the cointegration test's shortcomings (Pedroni, 2004). Pesaran, Shin, and Smith reported the pooled-mean group (PMG) in the panel ARDL frame (1999). They contend that a variety of elements, such as conventional technologies or shared institutional development, may contribute to the homogeneity in long-term relationships. On the basis of sustainable policy, homogeneity will be sought among the ASEAN panelists in this study. The ARDL model performs better than conventional panel cointegration tests; for example, it is appropriate even when independent variables have endogeneity problems (Marques, Fuinhas, & Pais, 2018I). It's also helpful to investigate long-run and short-run dynamics. The general panel ARDL model is represented as follows:

The parameterized ARDL (p,q,q,…q) an error correction model that is:

$$\Delta y_{it} = [y_{i,-1} - \lambda_{,i} X_{i,t}] + \sum_{j=0}^{p-1} \xi_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q=1} \beta_{ij}, \Delta X_{i,t-j} + \varphi_{it} + e_{it}$$

Note

- $\theta_i = -(1 - \delta_i)$, speed of adjustment coefficient determined by the group (expected that $\theta < 0$).
- $\lambda_{,i} =.$ Long-term relationship vector
- $ECT = [y_{i,-1} - \lambda_{,i} X_{i,t}]$, the error correction term.
- $, \beta_{ij,}$ dynamic coefficients in the short run.
- y is for the dependent variables and X is for independent variables.

Here, the PMG technique imposes the presumption that long-run coefficients are comparable across all nations. When the panel ARDL technique yields a long-term connection thus "no (zero) cointegration" is rejected as the null hypothesis A coefficient is used to express the sustainability ratio between GE-GDP and GR-GDP. According to this ratio, weak and robust fiscal sustainable growth can be distinguished (Quintos, 1995). If I move toward unification, I'm talking about strong, durable growth. Divergence from unity while and if indicates a lack of sustained growth. From this connection, short-run fluctuations and error correction terms can be determined.

The error correction term used in the long-run equilibrium is the ECT component, and the residual e is independently and normally spread with a zero mean and constant variance. The rate of adjustment to the equilibrium level is represented by the ECT term's coefficient. The PMG approach is used to obtain parameter estimators, and according to Pesaran et al., PMG estimators are typically consistent and regularly distributed (1999).

4.13 Diagnostic Test

Diagnostic test was applied to model specification problem, normality in the residuals and serial correlation problems

4.13.1 Multicollinearity

Collinearity in a linear regression analysis denotes that one variable is adequate to explain or have an effect on the other variables or factors. According to the regression analysis assumption, this is a significant concern for researchers since the influence of one variable on another could cast doubt on the regression model. Multicollinearity is a statistical phenomenon that happens when there is a significant correlation between two or more independent variables.

4.13.2 Normality test

In statistics, a normality test is used to determine if a set of data is sufficiently modelled by a normal distribution and to calculate the likelihood that a random variable underlying the data set would be normally distributed.

4.13.3 Serial Correlation

Serial correlation is a statistical term for the relationship, more specifically the correlation, between a variable's present value and a lagged value of the same variable from earlier time periods. While correlation evaluates the strength of the relationship between variables, serial correlation determines the association between the same variable collected over various time periods.

4.13.4 Heteroskedasticity

Heteroskedasticity is the term for when the variance of the residuals varies unevenly across a range of measured values. When completing a regression analysis, heteroskedasticity

results in an uneven dispersion of residuals (also known as the error term). The study's findings could be incorrect if the population used in the regression has unequal variance due to an uneven scatter of residuals.

4.13 Trends of socio-economic indicators

Trend of unemployment (unemp) Fig 4.1
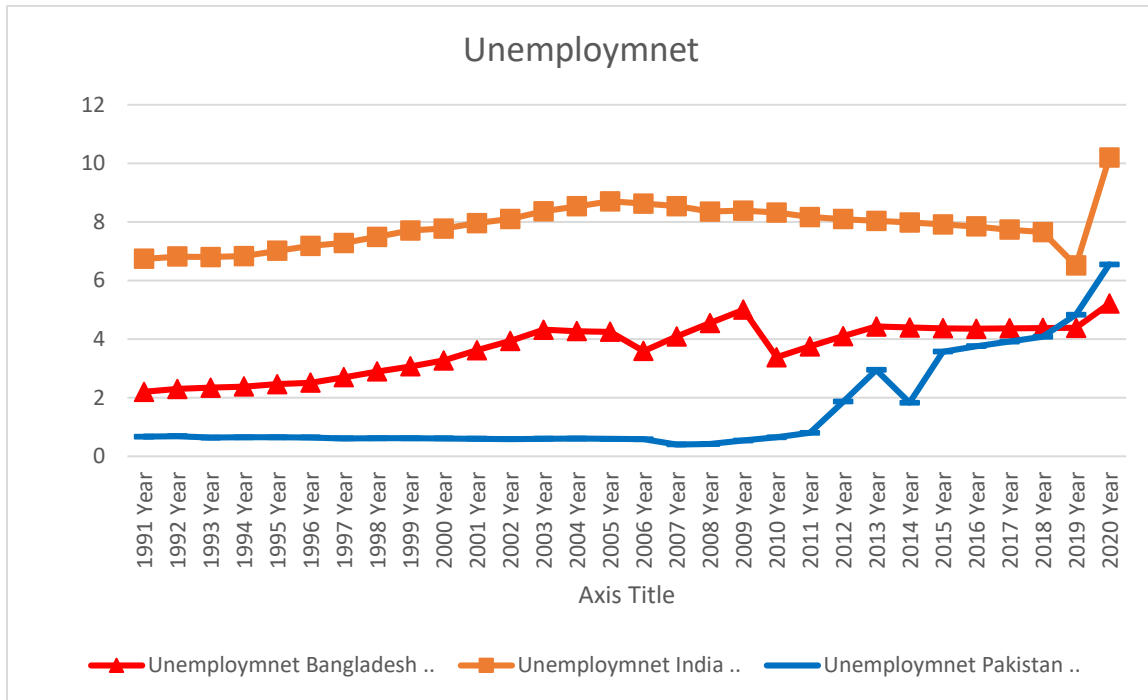
 From Above mentioned figure shows the trends of unemployment of three South Asian countries from the duration pf 1990 to 2020. From the above picture we can analyzed that the in the all countries has different unemployment rate, Like India has highest unemployment rate since 1990 as compare to the Bangladesh and Pakistan. In the contrast the Pakistan has low unemployment rate since 1990 as compare to the India and Bangladesh.

Here different shapes and color are used to discriminate the countries.

▲   = Bangladesh

■   = India

──   = Pakistan

Trend of Poverty (pov) Fig 4.2
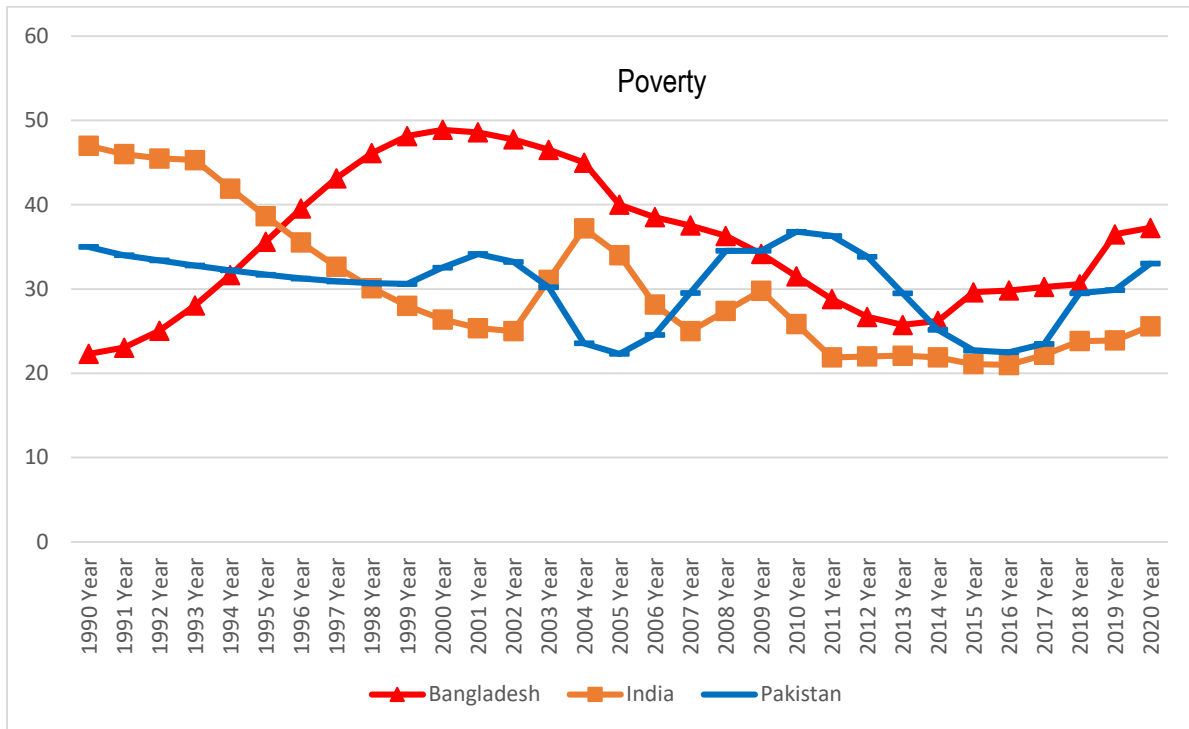
From 1990 to 2020, the percentage of poverty in the three south Asian countries varied year by year. India has highest poverty rate since 1990 but gradually its reduce and then increase its poverty rate and Bangladesh has less poverty rate but, in the year of 2000, it increases its poverty rate. In short there is inconsistent behavior of poverty of three south Asian countries.

Trend of Income inequality (gini) Fig 4.3

From 1990 to 2020, the percentage of income inequality in the three south Asian countries varied year by year. Bangladesh has lowest income inequality rate since 1990 but gradually it increases its income inequality and Pakistan has high income inequality in 1992. In short there is inconsistent behavior of income inequality of three south Asian countries.
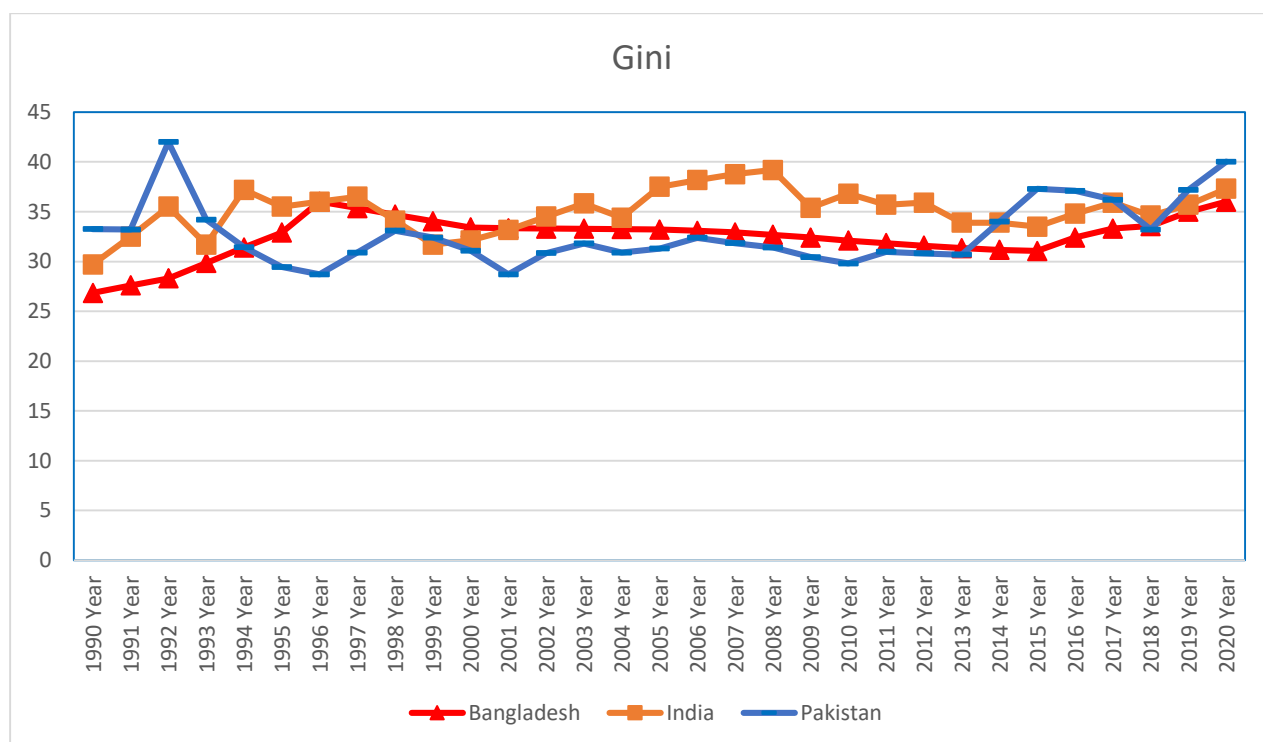
CHAPTER 5

RESULT AND DISCUSSION

The primary goals of the study were to analyze the effects of monetary policy on socioeconomic indicators in Pakistan, India, and Bangladesh as well as the long- and short-term relationships between various variables.

5.1 Descriptive Statistics

We were able to comprehend the nature and characteristics of the series for each country by applying descriptive statistics to each variable for each country. The tables below summarize the level of income inequality of each country and include the standard deviation, minimum, and maximum numbers.

In the below table, the mean value of the income equality can be seen as not much different among them. The mean value of Bangladesh's poverty with 27 observations was 32.20296. The data series clusters around their mean, as seen by the standard deviation. The data set is more clustered when the standard deviation is smaller. Here is the Bangladesh and Pakistan have almost same inequality but in India the income inequality is more.

5.1.1 Descriptive Statistics of Income Inequality for all Countries.

Table 5.1

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	32.20	2.13	26.84	36.00
Gini	Pakistan	32.36	2.72	28.67	42.00
	India	35.28	2.38	29.70	39.35

Source Authors' own calculations

The above table displays the mean value of Gini, which remains approximately close for all countries. The mean value of Bangladesh and Pakistan is almost same but the India has slightly more inequality as compare to the remaining countries. The standard deviation displays the dispersion from the mean value; all the countries have almost same deviation. It implies that all the countries have approximately same dispersion around the mean value. Min expressions the minimum values and max demonstrations the maximum values on basis of selected data set. Range of the Gini coefficient has been showed the difference of maximum and minimum values for all the countries.

5.1.2 Descriptive Statistics of Unemployment for all Countries.

Table 5.2

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*3.67*	*0.86*	*2.20*	*5.30*
Unemp	Pakistan	*1.40*	*1.37*	*4.00*	*4.65*
	India	*5.67*	*0.30*	*5.27*	*7.11*

Source Authors' own calculations

Above table shows the mean value of the unemployment for all countries. The India has the highest unemployment while the Pakistan has the lowest unemployment on average, which denotes that India has more labour force as related to the other countries and Pakistan has small increase in unemployment. Pakistan has a higher standard deviation than other nations in comparison. The standard deviation illustrates the dispersion from the mean value. It suggests that there is significant variation in Pakistan's unemployment rate relative to its mean. Based on a chosen sample of data, Max exhibits the maximum values and Min illustrations the minimum values. The gap between the maximum and minimum numbers reveals the variety of unemployment across all nations.

5.1.3 Descriptive statistics of interest Rate for all countries

Table 5.3

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*6.34*	*3.34*	*-5.16*	*13.74*
IR	Pakistan	*2.64*	*3.64*	*-5.08*	*8.32*
	India	*5.44*	*2.39*	*-1.98*	*9.19*

Source Authors' own calculations

The above table shows the interest rate of all countries. Bangladesh has the highest mean value of interest rate while Pakistan has lowest mean value of interest rate. It shows that Pakistan has a lower interest rate than Bangladesh and that Bangladesh has a higher interest rate than other countries. Pakistan has a higher standard deviation than other nations in comparison. The standard deviation illustrates the dispersion from the mean value. It suggests that there is significant dispersion in Pakistan's interest rate data around the mean value. Based on a chosen sample of data, Max displays the maximum values and Min displays the minimum values. The gap between Max and Min demonstrates the range of interest rates for all chosen nations.

5.1.4 Descriptive data for Board Money growth across all nations

Table 5.4

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*15.61*	*5.95*	*9.74*	*43.00*
BMG	Pakistan	*15.65*	*6.96*	*4.31*	*42.91*
	India	*15.35*	*3.82*	*6.8*	*22.27*

Source Authors' own calculations

The above table shows the mean value of Broad Money Growth of all countries. All the countries have almost the same average values. It shows that all countries have

approximately equal board money growth. Pakistan has a higher standard deviation compared to other nations, which demonstrates the dispersion from the mean value. It suggests that there is significant variation around the mean value in Pakistan. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The difference between Max and Min demonstrates the spectrum of global money growth.

5.1.5 Descriptive statistics of Exchange Rate for all Countries

Table 5.5

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*0.64*	*0.18*	*0.35*	*1.01*
EXER	Pakistan	*0.70*	*0.36*	*0.22*	*1.62*
	India	*0.46*	*0.14*	*0.18*	*0.74*

Source Authors' own calculations

The above table shows the mean value of the exchange rate of all three countries. Pakistan has on average the highest exchange rate whereas India has the lowest exchange rate on average. It suggests that whereas India's exchange rate has grown slowly, Pakistan's has grown rapidly. Pakistan has a higher standard deviation than the other countries, while India has a lower standard deviation. The standard deviation illustrates the dispersion from the mean value. It suggests that there is significant variation around the mean value in Pakistan. Max displays the highest value of the chosen data set, while Min displays the lowest value of the chosen sample data. The variation in exchange rates across all nations is demonstrated by the difference between Max and Min.

5.1.6 Descriptive statistics of Population for all Countries

Table 5.6

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*1.58*	*0.48*	*1.0*	*2.43*
POP	Pakistan	*2.41*	*0.32*	*1.98*	*2.96*
	India	*1.54*	*0.35*	*0.99*	*2.08*

Source Authors' own calculations

The population mean values for Bangladesh, Pakistan, and India are displayed in the above table. In comparison to other countries, Pakistan has the greatest average population density. It suggests that Pakistan's population is growing quickly. Bangladesh has a higher standard deviation than the other countries, while Pakistan has a lower standard deviation, which illustrates the dispersion from the mean value. It suggests that there is significant variation around the mean value in Bangladesh. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The variation in population growth across all nations is demonstrated by the difference between Max and Min.

5.1.7 Descriptive statistics of Gross Domestic Product Per Capita for all Countries

Table 5.7

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*3.91*	*1.62*	*1.11*	*7.05*
GDPPC	Pakistan	*1.56*	*1.85*	*1.84*	*5.10*
	India	*3.11*	*-8.87*	*7.08*	*14.00*

Source Authors' own calculations

The above table displays the mean value of Gross Domestic Product per capita of Bangladesh, Pakistan and India. Pakistan has the highest exchange rate on average whereas India has the lowest exchange rate on average. It implies that Pakistan has a high exchange rate growth and India has a low growth of exchange rate. The standard deviation expresses the dispersion from mean value, Pakistan's standard deviation is greater than that of India., which has a higher standard deviation when compared to other nations. It suggests that there is significant variation around the mean value in Pakistan. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The difference between Max and Min demonstrates the variation of GNP per capita across all nations.

5.1.8 Descriptive statistics of inflation for all Countries

Table 5.8

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*0.84*	*0.50*	*0.07*	*1.90*
CPI	Pakistan	*0.80*	*0.54*	*0.18*	*0.56*
	India	*0.80*	*0.50*	*0.14*	*1.84*

Note: Source Authors' own calculations

The above table shows the mean value of inflation (consumer price index) of Bangladesh, Pakistan and India. All the countries have almost the same average value. There is slightly difference between the averages among the countries so, it shows that that all countries have approximately equal inflation. Pakistan has a higher standard deviation compared to other nations, which demonstrates the dispersion from the mean value. It suggests that there is significant variation around the mean value in Pakistan. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The discrepancy between Max and Min demonstrates the inflationary range of the aforementioned nations.

5.1.9 Descriptive statistics of poverty for all Countries

Table 5.9

Variable	Countries	Mean	Standard Deviation	Min	Max
POV	Bangladesh	*35.71*	*8.74*	*22.30*	*48.90*
	Pakistan	*30.40*	*4.38*	*22.30*	*36.80*
	India	*30.99*	*8.50*	*21.0*	*47.00*

Source Authors' own calculations

The poverty mean for Bangladesh, Pakistan, and India is displayed in the above table. Pakistan has the lowest average poverty rate, whereas Bangladesh has the highest average poverty rate. According to this statement, Pakistan's poverty rate has grown less rapidly than Bangladesh's compared to the other countries. Bangladesh has a higher standard deviation than other countries, but Pakistan has lower standard deviation than the other countries, which demonstrates the dispersion from the mean value. It suggests that there is significant variation in poverty levels throughout Pakistan. Max and Min display the maximum and minimum values of a specified sample of data, respectively.

5.1.10 Descriptive Statistics of Gross Fixed Capital Formation for all Countries

Table 5.10

Variable	Countries	Mean	Standard Deviation	Min	Max
GFCF	Bangladesh	*8.18*	*2.19*	*2.46*	*11.95*
	Pakistan	*2.95*	*6.92*	*-12.79*	*15.77*
	India	*7.39*	*7.38*	*-12.38*	*22.19*

Source Authors' own calculations

The above table shows the mean value of Gross Fixed Capital Formation of Bangladesh, Pakistan and India. Bangladesh has on average highest Gross fixed capital formation while the Pakistan has lowest Gross fixed capital formation on average. It implies

that Pakistan has low growth in gross fixed capital formation and Bangladesh has high growth on average of gross fixed capital formation. India has a higher standard deviation than the other countries, while Bangladesh has a lower standard deviation. The standard deviation illustrates the dispersion from the mean value. It suggests that there is significant variation around the mean value in India. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The variation in Bangladesh, Pakistan, and India's gross fixed capital formation is shown by the difference between Max and Min.

5.1.11 Descriptive statistics of Total Reserve for all Countries

Table 5.11

Variable	Countries	Mean	Standard Deviation	Min	Max
	Bangladesh	*31.38*	*24.15*	*5.35*	*83.89*
TR	Pakistan	*17.88*	*10.49*	*4.37*	*37.36*
	India	*66.45*	*37.23*	*6.75*	*135.53*

Source Authors' own calculations

The above table shows the mean value of the Total reserves of Bangladesh, Pakistan, and India. India has the highest Total Reserve on average whereas Pakistan has the lowest Total Reserve on average. It means that whereas India's total reserve growth is large, Pakistan's total reserve growth is low. Pakistan has a low standard deviation compared to other nations, while India has a large standard deviation. The standard deviation illustrates the dispersion from the mean value. It suggests that Pakistan has a smaller range of values around the mean. India, however, has a wider range of values around the mean. Max and Min display the maximum and minimum values of a specified sample of data, respectively. The gap between Max and Min reveals the range of Bangladesh, Pakistan, and India's Total Reserve.

5.2 Correlation Matrix

Correlation describes the strength of the linear relationship between the variables. Multivariate Correlation analysis was utilized as part of the analysis to avoid issues with multicollinearity among the explanatory variables in the study. According to Lyoha, two variables in a model that have a correlation of more than 0.95 must not be included to prevent multicollinearity (2004). No pair of indications in the ongoing inquiry has met the necessary standards.

The correlation shows that there is no exact or linear dependence among the repressors in a bid to avoid Multicollinearity, so from the results we can see all the repressors are not nearly dependent on each other so these models would definitely pass the Multicollinearity test.

In the previous tables it shows that there is no perfect Multicollinearity among these variables.

Table 5.12

	Pov	Pop	Cpi	Gfcf	Gdppc	M2	Ir	Tr	Er
Pov	1.00								
Pop	0.20	1.00							
Cpi	-0.44	-0.44	1.00						
Gfcf	-0.07	-0.17	-0.08	1.00					
Gdppc	-0.25	-0.65	0.18	0.52	1.00				
M2	0.13	0.01	-0.14	0.15	0.05	1.00			
Ir	0.08	0.003	-0.23	0.17	0.06	-0.03	1.00		
Tr	-0.48	-0.59	0.36	0.20	0.56	0.05	-0.19	1.00	
Er	-0.32	-0.25	0.74	-0.16	0.01	-0.04	-0.23	0.06	1.00

Source Authors' own calculations

Table 5.12 shows that the association of all the variables with poverty. All variables have negative association with poverty except Money supply, population and interest rate.

This signifies that the all-positive association variables in move same direction with poverty. In the above table, the values of statistics are not equal or more than 80% and all variables are not collinear to each other. So, there is no Multicollinearity found in the table.

Correlation Matrix of gini pop cpi gfcf gdppc m2 ir tr er

Table 5.13

	Gini	Pop	Cpi	Gfcf	Gdppc	M2	Ir	Tr	Er
Gini	1.00								
Pop	-0.26	1.00							
Cpi	0.01	-0.40	1.00						
Gfcf	0.26	-0.16	-0.05	1.00					
Gdppc	0.35	-0.64	0.17	0.52	1.00				
M2	0.12	0.001	-0.17	0.13	0.05	1.0			
Ir	-0.15	0.004	-0.22	0.17	0.06	-0.03	1.00		
Tr	0.54	-0.59	0.32	0.19	0.56	0.06	-0.19	1.00	
Er	-0.15	-0.21	0.76	-0.13	0.01	-0.08	-0.21	0.03	1.00

Source Authors' own calculations

Table 5.13 shows that the association of all the variables with Gini. All variables have positive association with Gini except exchange rate, population and interest rate. This signifies that the all-positive association variables in move same direction with Gini. In the above table, we checked correlation among the variables so we found that there is no Multicollinearity in the Model.

Correlation Matrix of unemp, pop, cpi, Gfcf, Gdppc,M2, Ir ,Tr, Er,

Table 5.14

	Unemp	Pop	Cpi	Gfcf	Gdppc	M2	Ir	Tr	Er
Unemp	1.00								
Pop	-0.61	1.00							
Cpi	0.11	-0.46	1.00						
Gfcf	0.11	-0.12	-0.17	1.00					
Gdppc	0.25	-0.40	-0.06	0.65	1.00				
M2	-0.08	0.11	-0.30	0.15	0.05	1.00			
Ir	0.23	0.01	-0.25	0.19	0.10	-0.001	1.00		
Tr	0.52	-0.63	0.31	0.15	0.33	-0.007	-0.16	1.00	
Er	-0.28	-0.18	0.78	-0.20	-0.13	-0.19	-0.28	-0.03	1.00

Source Authors' own calculations

Table 5.14 shows that the association of all the variables with unemployment. All variables have positive association with unemployment except exchange rate, money supply and population. This signifies that the all-positive association variables in move same direction with unemployment. In the above table, there is no issue of perfect Multicollinearity. The statistics of all variables are less than 80%, so the model is unrestricted from Multicollinearity.

5.3 Unit Root Test

It is necessary to assess the variables' stationarity in order to confirm the long-term relationship between monetary policy and socioeconomic factors using the Bounds Testing technique. Various Unit Root tests can be used to determine whether all variables are stationary. The study makes use of the panel Unit Root test that Im et al. Henceforth IPS and Levin et al. Henceforth LLC devised based on the conventional augmented Dickey-Fuller (ADF) test. Under the null hypothesis of the presence of a unit root, the LLC allows for heterogeneity of the intercepts among panel members, whereas the IPS allows for both intercept and slope coefficient variability.

The most important step of research is to perform Unit Root Test. From this test we can analyse that either our data has unit or not. We used an expected unit root test. the "Im-PesaranShin" Unit-Root Test for variables (assumptions slopes are heterogeneous) and the IPS Test for simplicity. We also used the constant and just one lag.

From the below mentioned table we analysed that the Gini, Gross domestic product of per capita, gross fixed capital formation, money supply and interest rate are stationary at the level. The p values are less than 0.005 so these variables are stationary by using the alpha significant at 5%.

The Remaining variables poverty, unemployment, inflation, population, exchange rate and total reserve are not stationary at level so that why we token the first difference of the variables. After taking the first difference the remaining variables are stationary at 5% or P values are less 0.05.

All variables in the tables are stationary at 1st difference. At 5 % alpha all these variables are significant.

Table 5.15 *("Im-Pesaran-Shin Unit-Root Test "for Variables)*

Variables	Statistics	Stationarity		P-value
		Level	1st Difference	
		I (0)	I (1)	
Poverty	-5.18***		I (1)	0.00
Income Inequality	-2.69**	I (0)		0.01
Unemployment	-2.97***		I (1)	0.00
Inflation	-4.86***		I (1)	0.00
Population	-8.55***		I (1)	0.00
Gross Domestic Product per capita	-2.45**	I (0)		0.03
Per Capita Gross Fixed Capital Formation	-4.69***	I (0)		0.00
Money Supply	-3.75***	I (0)		
Interest Rate	-3.21***	I (0)		0.00
Exchange Rate	-4.47***		I (1)	0.00
Total Reserve	-3.52***		I (1)	0.00

Note ***are given to 1%,**for 5% and * for 10% ideally

5.4 Panel Cointegration Testing

According to the result, most of the variables are stationary on the first difference. Based on the majority of the outcomes series' lack of stationary behavior is evident at the level but stationary at the first difference, indicating that a cointegration test should be performed to examine the long-term relationship among variables.

Before estimating the econometric model, it is critical to identify long-run relationships between the variables. When there are no long-term correlations between the variables, it can be challenging to find any substantial associations after estimating the econometric model.

Finding the variables' long-term associations requires, the test that Pedroni (1999, 2004) provided is modified according to the Johansen technique. Then we check cointegration among the variables based on the existence of cross-sectional dependence (Cross-section Dependence Test) and Unit Roots (Panel Unit Root Testing) in the data set. The presence of a unit root in the income inequality, poverty, unemployment, population, inflation, gross fixed

capital formation, gross domestic product of per capita, board money supply interest rate exchange rate, and total reserves series shows that abnormalities from steady-state levels of these variables are long-lasting relatively than short-lived. As a result, the cointegration procedure (Engle & Granger, 1987) can be used to test for a long-term relationship among the variables. To that end, Pedroni (2004), are reported in above Tables respectively. With Newey-West automatic bandwidth selection and the Bartlett kernel, the Schwarz Information Criterion (SIC) determines the lag length automatically.

First, we checked the relationship among the variables through the pedroni test. To test the long term significancy. Then we applied PMG (pooled Mean Group) to find the value of coefficient to checked the intensity of the variables which are affected by the independent variables.

5.4.1 Cointegration for Gini

Table 5.16*(Pedroni Test for Cointegration for Gini)*

Pedroni Cointegration Test	Statistics	P. Value
Modified Phillips-Perron t	2.29	0.01[**]
Phillips-Perron t	1.32	0.09[*]
Augmented Dickey-Fuller t	1.47	0.06[*]

Note ***are given to 1%,**for 5% and * for 10% ideally

The above table shows that the policy variables are a significant and long-term relationship with income inequality. The variables are significant in alpha at 5% and 10%, and the value of "p" is less than 5 and 10 Percent. All tests show that cointegration monetary policy and Gini have long-run relationship. All the variables are cointegrated. According to N. Lambrecht's (2015) study how monetary policy and income inequality directly affect each other. Over time, a contractionary monetary policy causes income inequality to widen. In contrast to Villareal's (2014) assessment of Mexico, this result supports the study conducted by Coibion et al. (2012) regarding the United States.

5.4.2 Cointegration for Poverty

Table 5.17*(Pedroni Test for Cointegration for Poverty)*

Pedroni Cointegration Test	Statistics	P. Value
Modified Phillips-Perron t	1.82	0.03**
Phillips-Perron t	0.78	0.21
Augmented Dickey-Fuller t	1.70	0.04**

Note ***are given to 1%, **for 5% and * for 10% ideally

The above table shows the Pedroni Cointegration Test for the poverty. It shows that the policy variables and poverty have long run cointegration and the monetary policy has significantly impact on poverty. There are three different tests available which show the significance of test. Since every variable is cointegrated, they have long run relationship. Policy Variables and poverty have significantly positive relation.

5.4.3 Cointegration for Unemployment

Table 5.18*(Pedroni Test for Cointegration for Unemployment)*

Pedroni Cointegration Test	Statistics	P. Value
Modified Phillips-Perron t	0.22	0.41
Phillips-Perron t	-2.75	0.00***
Augmented Dickey-Fuller t	-1.68	0.04**

Note ***are given to 1%, **for 5% and * for 10% ideally

The above table shows the Pedroni cointegration test for unemployment. It shows that the policy variables and unemployment have long run coitntrgration. It shows that the monetary policy has significantly impact on unemployment. From the above mentioned tables

the maximum test shows the cointegration analysis among the variables.so we can say that the unemployment and monetary variables have long run relationship.

5.5. Results of Panel ARDL

5.5.1. Long-Run PMG

In the model, poverty, unemployment and income inequality have used as dependent variables. This estimation is used to check the value of coefficients, either how much the dependent variable is being affected by the independent variables, in other words we can say that how the variation in policy variables effect the socio-economic variables. It would show the relationships also among the variables. There are three purpose to use this estimation in our model. Firstly, used to check the long run significances among socio economic variables and policy variables. Secondly, to measure the values of the parameters, or we checked the level of intensity which effect the parameters in our models. Third purpose is used this estimation is to check the relationship among the variables. Either the variables showed the positive or negative relationship among policy and socio-economic variables. The estimation was used to control variables and two policies variables at a time, as we are using the four policy variables in our thesis, the model is chosen using the Akaike information criterion (AIC). Automatic lag selection was covered by the ARDL Model. We made three tables to check the long run relationships among independent and dependent variables separately.

5.5.1.1 Impact of Monetary Policy on Poverty

As mentioned below, the long run relationship between dependent and independent variables which displays that the supply of money and interest rate are significantly related to the poverty as seen in the table that the M2 money supply are negatively and significantly affect the poverty. So, there is inverse relationship between the variables if the money supply will increase it will decrease the poverty and vice versa.

Interest rate and poverty are significantly affected by each other as the interest rate rises in the country it will bring poverty. In other words, we can say that if a 20 percent money supply will decrease it will bring a 1 percent increase in poverty. The higher the interest rate the greater poverty will prevail in the society. so, in simple words, the poverty and interest rate have a direct relationship. According to the coefficient value if there is a 0.89 percent interest rate increase in the economy it will enhance poverty by 1 percent.

From the remaining two policy variables exchange rate and reserve ratio have shown no relationship among the variables. Remaining the control variables also affected poverty positively as well as negatively. so, from the below-mentioned information, it is clear significant long-term relationships between policy variables and poverty exist.

5.5.2 PMG Estimation in Long Run

5.5.2.1 Impact of Monetary Policy on Poverty

Table 5.19

Dependent variable	Independent Variables	Coefficients	t-statistic (std. error)	Coefficients	t-statistic (std. error)
Poverty	Pop	17.63***	58.76 (0.3)	11.20**	1.95 (5.751)
	Cpi	-5.31***	-16.09 (0.33)	-8.11	-0.65 (0.516)
	Gdppc	-0.80***	-16.00 (0.05)	-3.05**	-2.4 (4.31)
	Gfcf	-0.61***	-16.00 (0.04)	2.06	1.39 (1.48)
	M2	-0.21***	-35.00 (0.6)		
	Ir	0.89***	18.00 (0.05)		
	Tr			1.2	1.46 (0.82)
	Er			10.0***	11.05 (6.15)
Number of observations		64	64	78	78

Note ***are given to 1%,**for 5% and * for 10% ideally

The results of this assessment reveal several intriguing insights. To begin with, the real interest rate and poverty have a considerable positive relationship, but the Gross domestic product per capita and inflation rate have a negative relationship with poverty.

Money supply have negative impact on the poverty more money in the market will decrease the poverty. The poverty can be reduced by 1 percent if the money supply increased by 20 percent. Similarly, interest rate and exchange rate effect the poverty positively. The more will be exchange rate the more poverty will be. If the foreign currency is expensive relatively to the local currency it means, we have high exchange rate which will affect poverty negatively.

5.5.2.2 Monetary Policy 's Impact on Unemployment

The information below provides an example of the relationship between the dependent and independent variables. The policy variables have a significant relation with unemployment. As t total reserve has negative coefficients This indicates that the variables are inversely related., when the total reserve of any country decreases the unemployment will increase in the region and vice versa.

The all-policy variables have a significant effect on unemployment. The total reserve has a negative relation to unemployment, or there is an inverse relationship between them, while the exchange rate and supply of money have a positive and direct relation with unemployment. The more the exchange rate, the unemployment in the country. When the local currency value of any country depreciates, it will increase unemployment.

Money supply and unemployment are positively associated to each other. The more money in the market the more unemployment will prevail in the region and vice versa.

Table 5.20

Dep0endent variable	Independent Variables	Coefficients	t-statistic (std. error)	Coefficients	t-statistic (std. error)
	Pop	2.55***	3.27	0.75	0.47
			(0.78)		(1.58)
	Cpi	.162***	7.96	0.43***	6.13
			(0.63)		(0.70)
	Gdppc	1.99*	1.67	-0.17	-0.62
Unemployment			(1.18)		(0.27)
	Gfcf	-0.19*	-1.88	-0.07	-0.85
			(0.10)		(0.09)
	M2	0.049***	1.92		
			(0.02)		
	Ir	-0.11**	-2.42		
			(0.04)		
	Tr			-0.005**	-1.63
					(0.003)
	Er			2.54**	2.35
					(1.08)
Number of observations		64	64	78	78

Note ***are given to 1%, **for 5% and * for 10% ideally

From the above mention table, we have showed the impact of monetary policy on unemployment. Interest rate and total reserve affects the unemployment negatively. In simple

71

words if the money supply in the market will increase in by 0.48 percent the unemployment will increase by 1 percent. To decrease the unemployment by 1 percent we have to increase the interest rate by 0.11 percent. Similarly, the 1percent people will have employed when the total reserve is increased by 0.5 percent. Exchange rate also effect the unemployment directly the more local currency depreciates the unemployment will increase in the society.

5.5.2.3 Monetary Policy on Income Inequality Impact

The below table shows the income inequality and monetary policy. There are four policy variables used, some have a positive and some of them are unfavorable to economic disparity. Money supply and total reserve have a positive impact on income inequality while interest rate and exchange rate have a negative effect on income inequality.

Money supply and total reserve have a positive impact on inequality, when the central bank increases its money supply in a market it will increase the income equality similar to the case of the total reserve. The more money in the market had created the gap between rich and poor, as the money supply increase it will increase the gap so income inequality will increase, and vice versa.

When the central bank set the interest rate at a high level it will decrease the inequality in the society similar to the case of the exchange rate. If the local currency will appreciate it will enhance the inequality in the society.

As Erjavec et.al. (1999) said that this is similar to the notion of 'long-run money neutrality,' which states that the change in the quantity of money in the economy over time will only affect the general level of prices and not actual variables like real production or unemployment. Actual factors, such as technology, population expansion, desires, and so on, affect real output and unemployment in this situation. This analysis refutes the notion that monetary policy is successful in the short run, i.e. that changes in the money supply have an impact on real variables.

Table 5.21

Dependent variable	Independent Variables	Coefficients	t-statistic (std. error)	Coefficients	t-statistic (std. error)
	Pop	4.79***	3.49 (1.37)	3.12	0.81 (3.85)
	Cpi	1.52	1.44 (1.05)	2.75	1.27 (2.16)
	Gdppc	-0.007	-0.003 (0.38)	-0.75	-1.78 (0.42)
Gini	Gfcf	0.71***	5.42 (-0.13)	-0.21*	-1.89 (0.11)
	M2	0.06*	1.88 (0.03)		
	Ir	-0.52***	-6.77 (0.07)		
	Tr			0.09***	4.84 (0.01)
	Er			-15.73**	-2.26 (6.96)
Number Of Observation		64	64	78	78

Note ***are given to 1%, **for 5% and * for 10% ideally

From above table it shows that the income inequality is effected positively by the money supply and total reserve. If the money supply increase in the market by 6.6 percent, it will bring 1 percent income inequality in the region. similarly, if the ratio of total reserve will increase by 9.4 it will increase the income inequality by 1 percent.

The interest rate and exchange rate will affect the negatively each other. To reduce the income inequality in the society by 1 percent we have to set the interest rate high as 51 percent. Exchange rate also effect the income inequality negatively. When the local currency of any country depreciate it will increase income inequality in the society.

The control variables are also affecting the income inequality significantly. Some of them are affecting the income inequality positively and some are negatively.

5.5.3 Short Term Fluctuations

The short-run analysis in ARDL locates short-run fluctuations and establishes an error correction model (ECM) that is in line with long-run equilibrium. The error correction term (ECT) is zero when the system is in equilibrium, with values less than or greater than zero indicating a departure from the long-run equilibrium. Consequently, the definition of ECT is the modification and restoration of a cointegration relationship. To show that an error correction mechanism is stable, negative ECT with a range of 0 to 1 must be used (Asongu, 2014).

5.5.3.1 Impact of Monetary Policy on Gini

This study presents strong empirical evidence for a negative connection between income inequality and the exchange rate. The computed GINI coefficients are significant and negative at the 1% critical level, implying that an improvement in a country's distribution of income may be connected with depreciation or devaluation of the local currency. The table below shows a significant, negative relationship between Gini coefficients and exchange rates (Min, H. G., Shin, S. O., & McDonald, J. A. (2015)).

Table 5.22

	Coefficients	Std. Error	t-statistic	Probability
COINTEQ01	-.26*	0.14	-1.81	0.07
Pop	20.68	20.41	1.01	0.31
Cpi	2.69	3.11	0.87	0.38
Gdppc	0.21	0.16	1.35	0.17
Gfcf	0.08***	0.01	5.55	0.00
Tr	-0.01	0.03	-0.42	0.67
Er	-12.98***	1.76	-7.34	0.00
C	14.99*	8.54	1.75	0.08

Notes: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally

From the table 5.22 it shows that the exchange rate also effects the income inequality in short run but the total reserve remains neutral in the short run.

Table 5.23

	Coefficients	Std. Error	t-statistic	Probability
COINTEQ01	-0.17*	0.92	-1.87	0.06
Pop	26.64	21.67	1.23	0.21
Cpi	1.36	1.11	1.22	0.22
Gdppc	0.13	0.14	0.87	0.38
Gfcf	0.06**	0.03	-2.12	0.03
M2	0.13**	0.05	2.20	0.02
Ir	-0.15***	0.05	-2.86	0.00
C	2.51	2.27	1.11	0.26

Notes: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally

We also discovered that in the short run the interest rate has little influence on the distribution of income. Money Supply is not neutral in short run. In the other words the policy variables are useful for income inequality in the short run from the society. This outcome appears to be explained by two factors: first, the underdeveloped state of their banking systems, and second, the lack of household banking services. Second, the financial system's excessive liquidity justifies this. As a result, banks are unaffected by changes in the central bank's interest rates (EKOBENA, S. Y. F., & Yannick, S. (2012)).

5.5.3.2 Impact of Monetary Policy on Poverty

Summary of findings is while interest rates and poverty are inversely connected, rising interest rates will temporarily reduce the poverty rate.

Table 5.24

	Coefficients	Std. Error	t-statistic	Probability
COINTEQ01	-0.20***	0.07	-2,74	0.00
Pop	-102.66	80.28	-1.28	0.20
Cpi	-16.59	16.96	-0.98	0.32
Gdppc	0.43*	0.23	1.89	0.05
Gfcf	0.87***	0.16	5.32	0.00
M2	0.07	0.09	0.85	0.39
Ir	-0.26***	0.09	-2.75	0.00
C	1.03	0.92	1.11	0.26

Notes: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally

Talukdar, S. R. (2012). separately examine the effect of inflation on poverty in low-income countries, lower-middle-income countries, and upper-middle-income countries to see if the effect of inflation is similar or different across income levels. Although inflation has a positive and statistically significant correlation with poverty in most cases, find that in low-income countries, the relationship between inflation and poverty is negative and statistically insignificant.

Saeed (2020) investigated the role of monetary policy in reducing poverty in Pakistan. According to her, neither expansionary nor contractionary monetary policy is a significant tool for poverty reduction. She went on to say that if the central bank uses loose monetary policy to increase the supply of money, there will be more money in the market, which will lead to inflation and an increase in poverty. In contrast, if the central bank sets a high interest rate, there will be no significant reduction in poverty. High interest rates reduce investment and employment overall.

Table 5.25

	Coefficients	**Std. Error**	**t-statistic**	**Probability**
COINTEQ01	-0.07[*]	0.04	-1.79	0.07
Pop	-33.20	21.90	-1.52	0.13
Cpi	22.95	22.83	1.01	0.31
Gdppc	0.33[**]	0.13	2.53	0.01
Gfcf	-0.09[**]	0.04	-2.29	0.02
Tr	0.01[**]	0.07	2.41	0.01
Er	6.10	17.70	0.34	0.73
C	-24.04	14.16	-1.70	0.09

Note: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally,

5.5.3.3 Monetary Policy Impact on Unemployment

Depreciation of the exchange rate (increased in US dollars) would instead result in increased unemployment, even though real depreciation would promote exports, hence increasing GDP and employment. The data suggests that we need to increase the exchange rate because the unemployment rate and the exchange rate have a significant and favorable link. both in the immediate and far future. Similarly, in the case of China (Fu, T. W., & Lin, M. (2012)). Given that the real exchange rate and unemployment rate are correlated, a rise in unemployment would likely lead to a decline in the value of the Yuan (and the appreciation of US dollar).

Table 5.26

	Coefficients	Std. Error	t-statistic	Probability
COINTEQ01	-0.07*	0.04	-1.79	0.07
Pop	-0.82	1.50	-0.55	0.58
Cpi	0.93	0.59	1.55	0.12
Gdppc	-0.06	0.04	-1.57	0.11
Gfcf	0.009	0.02	0.62	0.53
Tr	0.014***	0.005	2.69	0.00
Er	3.39***	1.01	3.35	0.00
C	0.52	0.37	1.40	0.16

Note: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally

The ratio of Total reserve also influences the unemployment positively and significantly. Massive currency depreciations and crises caused by the adoption of exchange rate regimes resulted in rapidly declining real wages, often disproportionately affecting lower wage-earners in comparison to other wage-earners, capital owners, and land owners.

Table 5.27

	Coefficients	Std. Error	t-statistic	Probability
COINTEQ01	-0.34	0.22	-1.55	0.12
Pop	2.96	2.98	0.99	0.31
Cpi	-4.53	4.88	-0.93	0.35
Gdppc	-0.07	0.08	-0.79	0.43
Gfcf	0.005	0.01	0.32	0.75
M2	0.004	0.004	1.10	0.27
Ir	0.02^{***}	0.005	2.38	0.00
C	1.37	1.47	0.93	0.35

*Not*e: C is constant/intercept, COINTEQ01 presents ECT, ***are given to 1%, **for 5% and * for 10% ideally

According to Erjavec et al., the money supply is unimportant in the short-run (1999). Money M2 is quite little both in the immediate and long-term, demonstrating that changes in the amount of money have very little impact on unemployment. In other words, Money is neutral in the short run. The unemployment is affected by interest rate positively and significantly. High Interest rate increases unemployment.

5.6 Results of Diagnostic Test

Different diagnostic tests have been applied. The Woodridge test has been applied to check the serial correlation in the model. VIF has been used to check the multicollinearity in the data set. Breusch-pagan test has used to check the heteroskedasticity, and jarque-Bera has used for the normality.

Table 5.28

Serial Correlation	Heteroskedasticity	Multicollinearity	Normality Test
Woodridge test	Breusch-pagan	VIFs	Jarque -Bera
11.34	0.49	2.12	4.06
(0.18)	(0.48)		(0.13)

Note: the values in the braces show probability values.

5.6.1 Serial correlation

The Null Hypothesis is: No serial correlation

By using Woodridge test it is observed that the "If the probability value is more than 0.05 we cannot reject the null hypothesis." The probability value is 0.183 so it is clear from the probability value that there is no "serial correlation" in the model.

5.6.2 Heteroskedasticity

The Null Hypothesis is: "Homoskedasticity, the variance of residual is constant"

Breuch-Pegan test is used to check the heteroskedasticity and observed the probability of chi-square is 0.4824 which is greater than the probability of 5 percent. Hence, we fail to reject the null hypothesis and hereafter there exists no heteroskedasticity in the data.

5.6.3 Normality Test

Jarque-bera is used for normality and the probability value is more than 0.05 so we cannot reject the null hypothesis:

"Normal Distribution"

5.6.4 Multicollinearity

The Null Hypothesis is: "NO Multicollinearity in the data set" As the value of VIF is less than 10 so the null hypothesis cannot be rejected. which shows that our data is free from multicollinearity.

The central bank of any country implements monetary policy to minimize economic fluctuations and keep inflation low. Monetary policy has an impact on people's financial and economic decisions. It is critical for each member of the nation to understand how monetary policy changes will affect their region or state. The study's objective is to assess how monetary policy has affected socioeconomic indicators in light of the channel through which monetary policy is transmitted.

Monetary authorities are usually given extensive coverage mandates together with preserving a steady increase in GDP, maintain a low unemployment rate, and maintaining forex (forex) and inflation rates within an expected range. Additionally, monetary authorities have the power to change reserve requirements. These are the assets that banks must have on hand as a percentage of the deposits made by their customers in order to cover their obligations. Banks can lend more money or invest in more assets if the reserve requirement is reduced. Its upward shove diminishes financial institution lending and slows monetary growth.

A potent tool for central banks is the capacity to influence market expectations by making public statements regarding potential future policies. Statements and announcements from the central bank have an impact on the markets, and investors who accurately forecast what the central bank will do can make a tidy profit.

To keep the economy moving forward, a central bank executes monetary policy. The objective is to maintain low unemployment, a stable currency value, and steady economic growth. It does this primarily through manipulating interest rates, which increases or decreases rates of borrowing, spending, and saving. In general, monetary policy is either expansionary or restrictive. By lowering the cost of borrowing, an expansionary policy aims to boost both corporate and consumer expenditure. Contrarily, a contractionary policy lowers spending by raising the cost of borrowing. Depending on what is required at the time, either

expansionary or contractionary policies are used to keep unemployment at acceptable levels, inflation within acceptable bounds, and the value of the currency stable.

CHAPTER 6

CONCLUSION

By lowering interest rates, expansionary monetary policy seeks to boost overall demand and economic growth. Borrowing costs are lower when interest rates are low. When borrowing money is easy to do, more individuals invest and spend. In addition to raising GDP and aggregate demand, this also lowers cyclical unemployment. Additionally, lower interest rates imply lower exchange rates, which raises an economy's exports' competitiveness.

To reduce unemployment and improve production, authorities can initiate specific initiatives targeting specific segments of the economy. Simplifying the government's job creation project approval process, giving businesses financial incentives to hire employees, and funding businesses to teach employees to perform specific jobs are these. It's just one example of a rare scheme.

"The degree of inequality we see today is primarily the result of deep structural changes in our economy that have taken place over many years, including globalization, technological progress, demographic trends, and institutional change in the labor market and elsewhere. By comparison to the influence of these long-term factors, the effects of monetary policy on inequality are almost certainly modest and transient." (Bernanke, 2015).

By influencing the pricing of tradable versus nontradable products, Inefficient exchange rate interventions influence the composition of growth. The poor consume more nontradable products while making a higher percentage of their income from tradable commodities, according to statistics from household surveys in many nations (Sahn, Dorosh, and Younger, 1997). As a result, in addition to distorting trade and slowing growth, an overvalued exchange rate can reduce the relative earnings and purchasing power of the poor.

Poverty reduction is hampered by inequality. The advantages of increased economic growth will not be dispersed equitably across the population when inequality is significant, which will increase the prevalence of poverty. The vicious loop of high inequality, rising

poverty, and slower growth is completed when an increase in poverty results in lower levels of domestic demand, savings, and investment, which have an impact on the growth of the domestic market and the economy.

Income inequality, poverty and unemployment are the major issues of the developing nations. Sen, A. (1973) Inequality is closely related to the concept of poverty. Given the average income level, greater inequality will tend to be associated with greater poverty. Poverty has been linked to not only inequality but also unemployment. This has recently occurred in many studies around the world, including the ILO's "country reports," particularly the Kenya report. Dandekar and Bath in India have taken a somewhat similar stance (1971), There is solid evidence that unemployment raises the chances of poverty and contribute significantly to inequality Saunders, P. (2002).

A government can weather a short shock by accumulating and maintaining significant net foreign exchange reserves without reducing the spending of major poor people. By reducing real wages, raising the unemployment rate, decreasing non-labor income, and limiting private and net government transfers, external shocks can severely harm the poor. The number of "adequate" reserves depends on the chosen exchange rate system.

The first stage will be to estimate the total cost of the proposed poverty reduction approach. A complete framework for the budget formulation of poverty reduction plans necessitates the creation of "Medium-Term Expenditure Frameworks" (MTEF), which only a few nations currently have (e.g., Ghana and Uganda).

Inflation, output, and real exchange rates are the three main ways monetary and exchange rates can affect the poor. As mentioned earlier, inflation acts as a regressive tax and hurts the poor by curbing growth. Changes in the supply of money can affect real variables such as real interest rates that affect output in the short term. The real interest rate, which reflects the actual cost of borrowing or the price of the good, is roughly equal to the nominal interest rate less anticipated inflation.

Second, the exchange rate system chosen by the country may mitigate or amplify extrinsic shocks. The actual exchange rate is the price difference between the two countries of the shopping cart. Typically, the nominal exchange rate is multiplied by the ratio of the consumer price indices of the two nations. As the actual exchange rate rises, the higher the

shopping cart in your country. This can happen when your home currency rises, or when your home price rises compared to a foreign country.

When a central bank changes its monetary policy, the effects on macroeconomic variables vary depending on the type of policy change and the state of the economy. When a central bank lowers interest rates, it makes borrowing money cheaper for businesses and households. This can boost consumption and investment, resulting in increased economic growth and inflation. When a central bank raises interest rates, it can slow down spending and investment, lowering inflationary pressures but potentially slowing economic growth.

Finally, the poor are negatively impacted by the actual exchange rate twice. It first has an impact on a country's growth rate as well as its ability to compete internationally. Second, a change in the real exchange rate can have an immediate effect on the poor (caused, for example, by a nominal rate depreciation). As previously mentioned, recent research has found that in some countries, poor people's income is more closely linked to tradable products, and their consumption is more closely linked to non-tradable commodities than other income groups' income and consumption patterns. This means that a decrease or decrease in the value of the native currency will increase the attractiveness of exports and promote the demand for goods sold in these countries. Because the income of the poor is linked to the production and export of goods, this can increase their income while keeping the cost of their non-commercial use unchanged, leading to a positive impact on the distribution of the poor.

6.1 Recommendations

Given the region's present economic difficulties, central banks should think about implementing an accommodating monetary policy to promote economic growth. By lowering interest rates and expanding the money supply, this strategy promotes investment and borrowing. In order to give policy recommendation, all three countries are developing countries and according to the descriptive statistics the averages of variable of all three countries are more or less same that's why it is easily comparable.

1. The central banks should design such monetary policy which focus on long-run production expansion in the region. Expanding long run production can help to reduce poverty by creating new job opportunities, raising incomes, and improving living

conditions. Long-term economic growth has the potential to generate additional income and wealth, which can be redistributed through multiple ways such as employment, entrepreneurship, and government welfare measures. More people working and earning greater wages can lead to a reduction in poverty, especially among vulnerable and marginalized groups.

2. South Asian governments and central banks should work closely together to regulate inflation since high inflation indicates instability in the economy, which would discourage investors from making investments.

3. Marginal propensity to consume is higher in the lower percentiles of society, monetary policy has assisted in reducing inequality through expansionary central bank policies. This can help to understand that these monetary policies can help the lower percentiles of society on the one hand by increasing consumption, which can then lead to higher economic activity and thus higher job creation, which is the goal of central banks when they carry out these types of policies.

4. Poverty can be eradicated through expansionary monetary policy. When the money supply increases the it will lower interest rate which also effect the poverty.

5. As a result, unemployment can be reduced by the stabilization of political, institutional and economic by the channel of exchange rate and total reserves from Table 5.20. The total reserve and exchange rate have positive and negative impact on unemployment. Political instability, transparency, inefficiency of institution and political uncertainty that affect the exchange rate and total reserve also. As the local currency depreciates the employment level decrease and increase in total reserve will increase the employment.as the exchange rate depreciates it will affect our total reserve negatively which effect the employment level negatively.

6. In order to boost economic activity in Bangladesh, India and Pakistan an expansionary monetary strategy entails raising the money supply and decreasing interest rates. By promoting borrowing and investment, this strategy may result in more hiring and lower unemployment. As per Table 5.20.

7. Exchange Rate also has a significant impact on income inequality. Table 5.21 shows that if the central banks of Bangladesh, India and Pakistan have low their domestic currency worth the more Income inequality will be in the region. Income inequality can be reduced by the appreciation of domestic currency.

86

8. The government's "Sustainable Development Goals" development plan strikes good stability between economic growth and social development. As per empirical analysis it shows that Monetary policy is effective in the long term, and it is also realistic to recognize that poverty reduction and progress in social development must rely heavily on the more efficient use of available assets and resources.

9. With a growing share of the world's wealth concentrated in the hands of its top earners, a savings glut is driving asset prices higher and interest rates lower. If the central banks can be reducing income inequality among these countries the interest rate set to be high as per Table 5.21.

10. If central banks set the interest at low level as per Tables 5.20. Less Interest loans should be made available to educated youth in order for them to start their own businesses. It will not only encourage entrepreneurship but will also significantly reduce unemployment.

6.2 Limitation

However, we could not touch on the underline factors which affect the socio-economic variables like political, social, and institutional factors which are limitations of the study because it is difficult to get the data of such regions where the economies are not properly documented. Furthermore, we can also discuss the vulnerability of the people, While the economic vulnerability is a key characteristic of the poor in Pakistan, there is a growing recognition that vulnerability can also stem from social powerlessness, political disempowerment, and poorly and distortive institutions and that it is critical to recognize these factors as primary causes of the poor's vulnerability. This is evidenced by the fact that the poor rarely mention a lack of income as the primary cause of their vulnerability, preferring instead to focus on the limitations they confront in handling various assets, particularly human, material, social, or political. In addition, rising insecurity resulting from sectarian violence, community disputes, and decreasing law and order is reflected in the poor's feelings of vulnerability. Vulnerability, in this wide sense, can be characterized as the poor's inability to access public benefits, notably political processes or commodities and services that influence human development, whereas human development is described as enhancing individuals' options so they might live longer, healthier lives. Last but not least cyclical job losses leave Despite the permanent hurt to people's employability, monetary

policy has helped prevent long-term the rise in wealth and income inequality brought on by the business cycle.

6.3 Study for Future Use

In our research, we deal with the annual data, as we are dealing with monetary policies. So, for the accuracy and to get more clear results quarterly data can be accomplished to get better results and better policies. Many other variables can be used which cause these indicators like globalization, technical advancement, and changes in taxation are the key drivers of rising inequality. Globalization and skill-biased technological advancement have harmed lower skilled workers' salaries and employment while benefiting higher-skilled workers and capital owners (Bourguignon, F 2017). Trade, the labor market system, fiscal policy, and competition policies may be more significant elements in explaining economic changes．The study of monetary policy's long-run distributional impacts, if any, is a promising field for future research.

Income and wealth inequalities often rise in many industrialized countries. Education, access to the labor market and labor-intensive production policies are potential factors of inequality. Incoming: There are significant variations in different countries in terms of rising inequality and the current level of inequality (income and wealth).

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