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# MONETARY POLICY AND EMPLOYMENT GENERATTION IN PAKISTAN

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***ABSTRACT****-The objective of this research paper was to investigate the long run and short run relationship between monetary policy and employment generation in Pakistan. We used time series data for the period of 1990- 2017. Employment generation was taken as dependent variable while gross domestic product (GDP), money supply, inflation, unemployment rate and exchange rate were taken as independent variables. We applied statistical techniques such as ADF test, Bound test, ARDL Model and ECM to check stationarity and long run as well as short run relationship between variables. The results show that exchange rate has positive association with GDP in the long run but negative relation in the short run. Money supply has negative relation with GDP in the long and short run. Inflation has negative relation with GDP both in short and long run. Unemployment has negative relation with GDP in long run but positive relation with GDP in short run.*

**Key Words:** Monetary Policy, GDP, Money Supply, Inflation, Exchange Rate.
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## 1. INTRODUCTION:

### 1.1 Background of Study:

Some economists define monetary policy as all monetary decisions, irrespective of whether their aims are monetary or non-monetary. Johnson (1968) defines monetary policy as "a policy employing the Central Bank's control of the money supply as an instrument for achieving certain given objectives of economics policy". G.K. Shaw (1978) defines it as "any conscious action undertaken by the monetary authorities to change the quantity, availability or cost of money."

Monetary policy involves central banks' use of instruments to influence interest rates and funds within the economy to keep interest rates and money markets stable. Financial policy is basically a stabilization or demand management policy that can't impact long economic growth of a country. The State Bank of Pakistan Act, 1956 envisages policy objectives to maintain financial stability and attain complete utilization of productive resources.

Low and stable inflation provides favorable conditions for growth and employment generation over time. It reduces uncertainties regarding future costs of products and services and helps households and businesses to make decision about consumption, savings and investment and spending. This, in turn, facilitates higher growth and creates employment opportunities over the medium term resulting in overall economic well-being the country. The employment generation depends upon either employment enlargement

strategy or employment activation strategy. The expansionary strategy focuses on property growth and development through increasing productivity, supporting innovative entrepreneurship, sectoral development, increasing energy production to fulfill demand, gender equality, regional parity, developing the cities as engine of growth, promoting small scale industries, and small entrepreneurship. The resources utilization strategy emphasizes to boost labour skills endowment generally, paying explicit attention to spot specific ability gaps and taking effective steps to fill them. These policies generate demand for labor, whereas employment policies measure supply of rising labor power. Keeping in view the thrust of labour provide within the country, the government. strategizes to utilize the potential of young labor by providing different employment schemes that comes below the umbrella of Youth Development Programs. Another approach by the government is to develop human capital through training and development.

### 1.2 Main Research problem:

The main research problem of this research study to explore relationship between monetary policy and employment generation in Pakistan.

### 1.2 Objectives of Study:

The specific objectives of our study are as under:

- To study the causes of the failure of monetary policy in employment generation in Pakistan.
- To evaluate the monetary policy and its effectiveness regarding employment generation.
- To evaluate the empirical analysis to determine long run and short run relation between monetary policy and employment generation.
- To make policy recommendations about effective use of monetary policy.

## 2. LITERATURE REVIEW:

Literature review elucidates the fundamental relationship between monetary policy and employment generation in Pakistan. A number of studies in different countries using different time periods, methodologies econometrics techniques has been selected for review. The outcomes of national and international studies seem to the different on the bases of causality link between monetary policy and employment generation. We briefly analyze previous studies relating to our topics in the following: -

Najaf (2017) explored the question "Is monetary policy necessary for the economic development of less developed countries with special reference to Pakistan? He applied OLS model, (ADF) unit root test and VECM (Vector Error Correction Model). Our results show that there is a negative association between monetary policy and inflation while there is a positive association with GDP and Balance of payment.

Cioran (2014) explored relationship between monetary policy, inflation and some of the macroeconomic variables. They ascertained correlation analysis to determine relation between inflation rate, unemployment rate and interest rate. They concluded that these variables have significant relationship.

Chaudhry et al (2015) conducted research on "Monetary policy and inflationary pressure in Pakistan". They used Dickey-Fuller (DF) and ADF

tests and after regressing ARDL equation, they applied Wald test (F-Statistic). The results of their study show the short-run and long-run impacts of monetary policy on inflation rate in Pakistan.

Memon (2014) analyzed the "Role of monetary policy in economic development of Pakistan". They applied diagnostic test and linear Regression. They concluded that increase in exports will be the reason for increase in monetary assets of the country and same as increase in imports will also be the reason of increase in monetary assets in the shape of taxation, consumer price index is affecting negatively on the monetary assets.

Mahmood and Khalid (2013) assessed the impact of "fiscal policy on growth and unemployment generation in Pakistan". They applied ADF unit root test, Vector Error Correction Model (VECM) and Johansen co-integration technique. They concluded that foreign direct investment, growth rate and tax revenue have shown negative relationship with unemployment.

Umair and Awan (2020) discussed the topic "Globalization and poverty in Pakistan". They used secondary data and their Results show that foreign direct investment, workers' remittances and economic dimension of globalization are creating employment opportunities not only in short run but also in long run in Pakistan, while trade openness and social and political dimension of globalization negatively affects the employment.

Aslam and Awan (2018) investigated the impact of monetary policy on Pakistan's economic growth. They used time series data for the period 1972-2015. The variable of the study included: real gross domestic product, employed labour force, gross capital formation, foreign direct investment, broad money, GDP deflator and exports. They applied multiple regression method to analyze the data and draw the results. They also used

correlation technique to study nature of relationship between variables. The examined long run relationship between monetary policy and the selected variables. They found that monetary policy has significant effect on inflation rate, money supply, employment, gross capital formation, foreign direct investment, saving and other macroeconomic variables. We recommend that central banks should be given free hand to formulate and execute monetary policy but it must have coordination with fiscal policy. In this way, the economy can be managed effectively by economic managers.

## 3. RESEARCH METHODOLOGY:

We have analyzed data and selected variables which are necessary for empirical analysis and for the validity of the research. Research Methodology issues have great importance in economic research. To evaluate the relationship between monetary policy and employment generations in Pakistan different statistical techniques will be applied.

### 3.1 Type of Data and Source:

The data of current study is based on annual time series data for the period 1990 to 2017. It has been taken from different sources including various issues of Pakistan Economic Survey, World Development Indicators of World Bank and State Bank of Pakistan. The variables and sources are shown in Table 1:

**Table 1 Sources of data**

| **Variables** | **Sources of data** |
|---|---|
| GDP (Gross Domestic Product) | World Development Indicators |
| Money Supply | Pakistan Economics Survey |
| Inflation | Pakistan Economics Survey |
| Unemployment Rate | Economics Survey of Pakistan |
| Exchange Rate | World Development Indicators |

### 3.2 Sample of Study:

We selected twenty-year period starting from 1990 to 2017 as a sampling period of this study.

### 3.3 Selected Variables

In this study we have selected following variables.

- Gross Domestic Product (GDP) as a dependent variable
- Money Supply (MON) as an independent variable
- Inflation (INF) as an independent variable
- Unemployment (UNEMP) as an independent variable
- Exchange Rate (ER) as an independent variable

### 3.4. Econometrics Model:

The model specified is Autoregressive Distribution Lag Model (ARDL) technique the explained variables log of gross domestic product (GDP), while log of money supply (MON), inflation rate (INF), exchange rate (ER) and unemployment rate (UNEMP) representing the independent variables. Our econometrics model is given in the following equation form: -

$$GDP_t = \alpha_0 + \alpha_{1p}MON_t + \alpha_2 INF_t + \alpha_3 UNEMP_t + \alpha_4 ER_t + \mu_t$$

Where:

| | |
|---|---|
| $GDP_t$ | Gross Domestic Product |
| MON | Money Supply |
| NF | Inflation Rate |
| UNEMP | Unemployment Rate |
| ER | Exchange Rate |
| $\mu_t$ | The Error Term |
| $\alpha_0$ | The Intercept |
| $\alpha_1$ , $\alpha_2$ , $\alpha_3$ and $\alpha_4$ | The Coefficients of each Explanatory Variables in this |

### 3.5. Analytical Techniques:

ADF's unit root test is applied for stationarity in which critical value and p values are calculated. Correlation analysis is used for the purpose of checking correlation between variables and descriptive analysis of specific variables and ARDL method to check the impact of independent variables on dependent variable. in the long run and ECM model has been used to determine short run relationship between dependent and independent variables.

## 4. DATA ANALYSIS:

### 4.1 Descriptive Statistics:

The results of descriptive statistics are given in Table 2:

Table 2: Descriptive Statistics

| | **LGDP** | **LMON** | **INF** | **UNEMP** | **ER** |
|---|---|---|---|---|---|
| **Mean** | 6.860 | 3.436 | 1.747 | 0.472 | 2.025 |
| **Median** | 6.853 | 3.433 | 1.689 | 0.509 | 2.019 |
| **Maximum** | 7.090 | 4.168 | 2.195 | 0.774 | 2.096 |
| **Minimum** | 6.629 | 2.602 | 1.251 | -0.008 | 1.970 |
| **Std. Dev.** | 0.130 | 0.479 | 0.289 | 0.190 | 0.039 |
| **Skewness** | -0.013 | -0.0209 | 0.077 | -0.461 | 0.140 |
| **Kurtosis** | 1.933 | 1.771 | 1.869 | 2.836 | 1.730 |
| **Jarque-Bera** | 1.327 | 1.764 | 1.518 | 1.026 | 1.971 |
| **Probability** | 0.514 | 0.413 | 0.467 | 0.598 | 0.373 |
| **Observations** | 28 | 28 | 28 | 28 | 28 |

Sources: Author's calculation is based on E-Views 10

Table 2 show the descriptive analysis of all variables used in monetary policy and employment generation model. It indicates that the average value is 6.860. The maximum value of monetary policy is 7.090 and the minimum value is 6.629. The standard deviation value is 0.130. The value of Kurtosis shows that the variables are leptokurtic or playto-kurtic. Now, we check the value of Jarque-Bera (JB) test which provides the mutual results of skewness and kurtosis. The average of the gross domestic product value is 6.860 with the standard deviation of 0.130. The average of LMON value is 3.436 with standard deviation of 0.479, the average of inflation value is 1.747 with the standard aviation of 0.289 whereas the average of the unemployment value is 0.472 with the standard deviation of 0.190. The average of exchange rate value is 2.025 with standard deviation of 0.039.

## 4.2 Correlation Analysis:

Correlation is used to evaluate the strength of relationship between two variables. Two variables are said to be positively associated if they have a tendency to move in the same path or negatively correlated if move in opposite path. For that reason, the value range of correlation co-efficient lies between -1≤ rxy≤1. The results of correlation analysis are shown in Table 3:

Table 3: Results of Correlation Analysis

| **Variables** | **LGDP** | **ER** | **INF** | **LMON** | **UNEMP** |
|---|---|---|---|---|---|
| LGDP | 1.00 | ……. | ……. | ……. | ……. |
| ER | -0.140 | 1.00 | ……. | ……. | ……. |
| INF | 0.986 | -0.110 | 1.00 | ……. | ……. |
| LMON | 0.996 | -0.159 | 0.991 | 1.00 | ……. |
| UNEMP | 0.759 | -0.628 | 0.745 | 0.772 | 1.00 |

Sources: Author's calculation is based on E-Views 10

The relationship between the variables exists. It shows that a gross domestic product (LGDP) is value 1.00 that a variable is positive and in which very strong correlation of co-efficient and exchange rate (ER) is value -0.140 that a variable is negative and in which very weak correlation of co-efficient. Inflation (INF) is value 0.986, money supply (MON) is value 0.996 and

employment (UNEMP) is value 0.759 that a variable is positive and in which very strong correlation of co-efficient. Similarly, all other variables have also low level of multi-collinearity or strong correlation.

**4.3 Unit Root Test:**

The results of Unit Root Test are given in Table 4:

Table 4: Result of Unit Root Test

| **Level** | | | | **1st Difference** | | **2nd Difference** | | |
|---|---|---|---|---|---|---|---|---|
| Variable | Intercept | Trend & Intercept | None | Intercept | Trend & Intercept | Intercept | Trend & Intercept | Result |
| LGDP | -0.209<br>-0.925 | -5.774<br>0.005* | | -3.182<br>0.039 | -4.105<br>0.017 | -9.013<br>0.000 | -9.281<br>0.000 | I(0) |
| LMON | -0.960<br>0.751 | -1.648<br>0.744 | 1.706<br>0.082<br>* | -2.585<br>0.108 | -2.707<br>0.241 | -5.054<br>0.0004 | -4.776<br>0.004 | I(0) |
| INF | -0.704<br>0.828 | -4.457<br>0.009 | | -2.104<br>0.244 | -4.598<br>0.008* | -6.123<br>0.000 | -6.014<br>0.0003 | I(1) |
| LUNEMP | -2.861<br>0.063* | -1.986<br>0.582 | | -6.765<br>0.000 | -6.891<br>0.000 | -8.488<br>0.000 | -8.233<br>0.000 | I(0) |
| ER | -0.845<br>0.789 | -0.109<br>0.991 | | -4.039<br>0.004 | -5.070<br>0.002* | -8.113<br>0.000 | -4.782<br>0.004 | I(1) |

Sources: Author's calculation is based on E-Views 10

In the table 4 we estimate the unit root test. The results show that the GDP is integrated at level where the coefficient value is -5.774 with probability value 0.005. The money supply is also stationer at level where the coefficient value

is -1.706 and the probability value is 0.082. Inflation is integrated at 1st difference where the coefficient value is -4.598 and the probability value 0.008. Unemployment is integrated at level where the coefficient value is -2.861 with probability value 0.063 and the exchange rate of monetary policy are order of the coefficient value is -5.070 and the probability value is 0.002. To check the stationary or nonstationary of all the series of the variables. The evidence show that there is no stationarity among variables of the study. Now we can use Autoregressive Distributed Lag (ARDL) Model to estimate the equations.

## 4.4 Bound Test for long run relationship:

The results of Bound Test are shown in Table 5:

Table 5: Bounds Test for Co-integration

| **Null Hypothesis: No long-run relationships exist** | | |
|---|---|---|
| **Test Statistic** | **Value** | **K** |
| F-statistic | 18.88025 | 4 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.2 | 3.09 |
| 5% | 2.56 | 3.49 |
| 2.5% | 2.88 | 3.87 |
| 1% | 3.29 | 4.37 |

Sources: Author's calculation is based on E-Views 10

In Table 5 the computed F-Statistics value is 18.88, which is higher than upper bound limit in which critical value 4.37 at one percent. Similarly, it is computed by using unrestricted intercept and no trend from Narayan (2005). It indicates that Null hypothesis of Non- existence of co- integration is rejected. So it is found that there is a long run co-integration among the variables.

### 4.5 ARDL Long Run Results:

The results of ARDL Model are shown in Table 6**:**

Table 6: ARDL Long Run Results

| **Dependent variable is LGDP…….** **ARDL (1, 0, 1, 0, 1)** | | | | |
|---|---|---|---|---|
| **Regressor** | **Coefficient** | **Standard Error** | **t-Statistic** | **Prob** |
| **ER** | 0.108 | 0.040 | 2.639 | 0.016 |
| **LMON** | -0.152 | 0.065 | -2.332 | 0.030 |
| **UNEMP** | -0.010 | 0.014 | -0.772 | 0.449 |
| **INF** | -0.334 | 0.066 | -5.014 | 0.000 |
| **C** | 4.475 | 0.764 | 5.855 | 0.000 |
| R-squared | 0.999 | Durbin-Watson stat | | 1.997 |
| Adjusted R-squared | 0.998 | Prob(F-statistic | | 0.000 |
| S.E. of regression | 0.004 | F-statistic | | 2732.091 |

Sources: Author's calculation is based on E-Views 10

In Table 6, we used ARDL model to estimate relationship between the variables: ER, MON, UNEMP, INF and GDP. The First variable is Exchange

Rate (ER). The coefficient value of exchange rate is 10.8 % that indicates if one-unit increase in Exchange Rate (ER) it will likely to increases GDP by 10.8 percent. It is assumed that any increase in Exchange Rate (ER) causes to increase the exports level of country and thus the exports will cause to increase in the foreign exchange earnings. In addition, the income level of economy will increase due to increase in foreign exchange. Thus, we have assumed that Exchange Rate (ER) has significant positive relationship with GDP growth rate in the long run.

Second variable is money Supply. The coefficient value of money supply is -0.152% that shows that one-unit increases in Money Supply (MON) will decrease the GDP by -0.152%. It is assumed that any increase in Money Supply pushes the price level adversely that generates inflation. Due to inflation the purchasing power of people will decrease, they will consume less. In addition, the cost of production of products will decrease sales of business firms and causes unemployment level. Therefore, we have assumed that money supply is negatively correlated with the GDP growth rate.

Third variable is unemployment. The coefficient value of unemployment is -0.010 % that has negative relation with the GDP. Result shows that one unit increases in unemployment will likely to reduce the GDP by -0.010%. It is assumed that when unemployment will occur, it will cause to affect the employment level adversely. Likewise, the due to participating

less labor force in production process, the output level will likely to fall. Thus, the expected results of unemployment are negatively related to the GDP.

The coefficient value of inflation is -0.334% that indicates if one unit increases in inflation rate it likely to decrease GDP growth rate by -0.334%. It is assumed that due to increase in inflation rate, the cost of production, (raw material, wage, machinery, rent, tax i.e.) also rise and these factors directly affect the production cost and output level. Thus, due to rise in prices the good and service the production cost will also gear up. In the long run. In short, there is negative association between inflation rate and GDP growth rate in the long run.

### 4.6 Error Correction Model Results:

The results of ECM are shown in Table 7:

Table 7: Error Correction Model Results

| **Dependent variable is Δ(LGDP)**<br>**ARDL (1, 0, 2, 1, 2)** | | | | |
|---|---|---|---|---|
| **Regressor** | **Coefficient** | **Standard Error** | **t-Statistic** | **Prob** |
| ΔINF | -0.430 | 0.063 | -6.828 | 0.000 |
| ΔLMON | -0.132 | 0.040 | -3.249 | 0.005 |
| ΔUNEMP(-1) | 0.030 | 0.008 | 3.624 | 0.002 |
| ECM(-1) | -0.748 | 0.060 | -12.289 | 0.000 |

Sources: Author's calculation is based on E-Views 10

In Table 7 short run results are calculated by ECM approach. The error correction term reveals the speed of adjustment to restore the equilibrium in dynamic model. The coefficient shows that how slowly or quickly the

variables move towards equilibrium. The parameters value of ECM is (-0.748) that suggest that deviation from long run term equilibrium following a short run shock which is corrected nearby half within one year. The finding show that speeds of adjustment is fairly high that will return to its equilibrium level rapidly.

## 5. CONCLUSIONS:

The objective of this study was to ascertain relationship between monetary policy and employment generation in Pakistan. In this study we have found that monetary policy is negatively correlated with employment generation. So we reject null hypothesis and accept alternative hypothesis which states that monetary policy adversely affects employment. We applied ARDL technique on time series data ranging from 1990-2017. Over all models is strong because the value of $R^2$ is 99 and F-statistic is 0.000. Our results show that exchange rate has positive association with GDP in the long run but negative relation in the short. Money supply has negative relationship with GDP in the long run and short run. Inflation also has negative relationship with GDP both in short and long run. Unemployment has negative relation with GDP in long run but positive relation with GDP in short run. So the monetary policy alone cannot effectively work for generation of employment.

## 6.POLICY RECOMMENDATIONSL:

This study has important policy implications.

- There is need to create sound and secure environment for the foreign investors, so that they may invest in different business and projects. Due to their

- investment employment opportunities will be created in the country and unemployment will decrease.
- Monetary policy should be used to create a favorable investment climate that attracts both domestic and foreign investments by promoting a sustainable employment opportunity. The government should also increase government spending on the productive sectors of the economy in order to promote job creation and monetary policy alone is unable to create employment.
- Central banks should be given free hand to formulate and execute monetary policy but it must have coordination with fiscal policy. in this way, the economy can be managed effectively by economic managers unitedly.

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## CONTRIBUTION OF AUTHORS AND CONFLICT OF INTEREST

This research work was carried out in collaboration between two authors.

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