



MONEY DEMAND AND ITS DETERMINANTS IN CASE OF PAKISTAN: AN ECONOMETRIC INVESTIGATION

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Abstract

In this study, money demand shows a very important role in macroeconomics, mainly in picking a suitable monetary policy. This study carries the money demand to precise a relationship between the money demand function and the determinants of money demand. In this model the time series data used from the period of 1975-2015, to estimate the money demand function in Pakistan. In this model, the Auto Regressive Distributed Lag Model (ARDL) is applied to estimate the stability of variables. In this model money demand is positively related to all the independent variables like Gross Domestic Product, Inflation, Exchange Rate, and Population Growth. In the long-run money, demand is positively and significantly related to the gross domestic product of Pakistan. In this model Gross Domestic Product, Inflation, Exchange Rate, and Population Growth also positively and significantly affect the money demand function.

Keywords: Money demand, Gross domestic product, Inflation, Exchange rate, Population growth, ARDL, Pakistan.



1. Introduction

The demand for money is the main function in expressing the current and suitable monetary policy. In open economies monetary

developments like the exchange rate and foreign interest rate affect the domestic demand under stretchy exchange rate. The knowledge about features affecting the money demand. So it is

very important for leading a successful monetary policy. Steady demand for money function is necessary for statistical analysis. In the last two decades, the changes in the exchange rate played a decisive role in the behavior of market members. There are many reasons and problems behind the decline in economic growth like trade shocks, wars, world financial crises, security hazards, and devastating floods. The recent economic growth would have categorized by usually low charges of money development, comparative on the rise in nominal gross national product. This progress challenges much of the imaginary information about the public's money demand and its determinants. The current shortage of demand for money from its predictable value has important consequences for existing monetary policy and the augmented uncertainty about the money demand in the future has suggestions for the manner of policy generally. The empirical study of demand for money remains more vital in evolving countries like Pakistan and the constant function of money demand is a chief clause to execute the monetarist policy. While an economy contracts with depression the interest rate grows in this condition. In the importance of money demand, both demand and supply are the main economic activity. Supply is the sum of specific goods and services accessible at a given time to users. So consumers stating interest in buying a good or service, consume available supply, normally resulting increase in demand. Demand is the amount of consumer spending and consumer

desire on a specific good or service at a particular price. As demand rises, supply falls and the price also rises and vice versa. Demand and supply would have an important relationship that regulates the prices of maximum goods and services. Most of the market theories claim that this association balances the equilibrium with the number of prices, both the demand and supply success a close calculation of the perfect distribution of resources to production. So, market economies practice this as a machine to determine the developments in production. Most of the corporations study the behavior of the consumer to know the recent and future demand. So, according to this statement, both demand and supply are correspondingly important to economic life. The importance of money demand function has encouraged several economists to study stability and determinants. But the money demand has focused on both developed as well as industrialized countries. So few studies are describing the function of money demand in transition economies. The amount of demand for money is a vibrant and important patchy to value the profitable stroke in every economy. When the function of demand for money is pleasant, it makes an anticipated quantity of money that may guarantee to stable the economy. Fiscal and monetary policy played a very important role for stable economic growth. A clear indulgence of the stability of demand for money is important to give its suggestions for monetary policy. In this step, we describe the definition or description of the variables. Money demand is the holding of

financial assets in the form of money such as bank deposits and cash rather than investment. Gross Domestic Product is an important source to measure a country's economy. GDP is the total value of all goods and services produced in the economy in one year. If in the country's boundaries, the government includes production as GDP. The unit of GDP as a percentage.

A continuous increase in the price level is called inflation is measured as an annual percentage change. The unit of inflation is also in percentage. We describe the exchange rate in terms of the currency of one country to exchange with the currency of another country. The population growth rate is the rate at which the number of individuals in the population increases in a given period, expressed as a fraction of the initial population.

Objectives of the Study

The purposes of this model shown as:

- To find out the determination of money demand.
- Relationship between money demand with GDP, INF, EXR, and PG.

2. Literature Review

Several studies estimated the money demand function, but some studies are:

Valadkhani, (2008) estimated the short-run and long-run M2 in Asian Pacific countries from the panel data from 1975 to 2002. The source of collecting data was WDI. The observer used the (IPS) test. This study describes the variables as money demand, price deflator, real GDP, interest

rate deposit, interest rate lending, real effective exchange rate, and US real interest rate. The observer concluded that the long-run demand for money had a positive influence on real income and a negative influence on the interest rate, inflation, EER, and US real interest rate. Hye et al, (2009) examined the relationship between the exchange rate, stock price, and money demand. This topic had included only in Pakistan for the quarterly period of 1971 to 2006. The time series collecting data source was an international financial statistic (IFS). They used variables like money demand, inflation, economic activity, interest rate, exchange rate, and stock prices. They applied the fully modified ordinary least square (FMOLS) and ADF test. The source of collecting data was taken from WDI. They concluded that in long-run stock prices had a positive impact on money demand, but the exchange rate and wealth harmed money demand. Azim et al. (2010) estimated the money demand for the period of 1973 to 2000 in Pakistan. They applied the econometric method of Autoregressive distributed lag (ARDL). They used variables like money demand, real income, inflation rate, and exchange rate. They also applied the ADF test for checking the stationary of all variables. The conclusion showed that inflation and income would have positive and the exchange rate has taken a negative relationship. Anwar and Asghar. (2012) examined the stability of money demand. They applied the econometric model of Auto-Regressive Distributed Lag (ARDL). They used the period from the year 1975

to 2009. They took variables like money demand, exchange rate, and gross domestic product (GDP), GDP Deflator, and inflation. They also apply the Augmented Ducky Fuller (ADF) and PP for checking the stationarity of all variables. The result of this study showed that all variables would have a long-run relationship with real M2 balances. Arize and Nam. (2012) estimated the demand for money in Asia from the quarterly period of 1973 to 2009. The source of collecting data was IMF. They applied the error-correction technique which is used to estimate the short-run dynamics. They used variables like real returns, domestic interest charges, money balances rate, and real GDP. They concluded the result that domestic interest rate would harm money demand and to increase the exchange rate would have a positive impact on money demand in both the short-run and long-run. Abdullah et al. (2012) studied the components of demand for money in Pakistan. They recycled the annual time series data from the period of 1972 to 2010. The source of collecting data was WDI. Real money took as the regressand variables while household, Consumption Expenditure (CE), Government Expenditure (GE), Investment Expenditure (IE), and GDP Deflator. They used the econometric method Johnson, co-integration test because when we use the Augmented Ducky Fuller (ADF), all variables exist at 1st difference. That's why we use the Johnson Cointegration test. Johnson cointegration test only recycled to check the short-run relationship. The conclusion of this study showed that the demand for money would

have a significant relationship for investment expenditure and prices. Sarwar et al. (2013) outlook the stability of money demand functions in Pakistan. This model recycled the time series records from the period of 1972 to 2007. The observer used the latest econometric technique to invest the money demand in the short-run and long-run relationship. They collected the data source from the handbook of statistics, state bank, and international monetary fund (IMF). The observer used the variables like Reserve narrow and broad money, official aggregate, GDP, opportunity cost, financial innovation, and the GDP deflator. This study used the augmented ducky fuller (ADF) test. The conclusion of this study showed that the opportunity cost of money was negatively related and real GDP was positively related. Bhatta .S, (2013) evaluated the stability of money demand function in Nepal. The observer used the time series records from the period of 1975 to 2009. The observer used variables like money balances, scale variable (S) which shows the economic action, GDP, interest rate, and (OC) opportunity cost, monetary aggregates, and price. This study collected the data source from the economic survey, economic bulletin, and the world economic outlook. This study used the econometric method of (ARDL) and cointegration. The final discussion of this study showed that the money demand function is in the stable form of some variables. Kjosevski, j. (2013) studied the stability of money and its elements in the Republic of Macedonia from the period of 2005 to 2012. The observer took the

variables like nominal money, price level, income as transaction volume in the economy, opportunity cost, and monetary aggregate. The observer applied the Johnson, cointegration test to check the short-run relationship and vector error correction model (VECM). The observer also applied the Parron (PP) test. The conclusion showed that the interest rate payable on dinar and exchange rate time deposit explains the fluctuations of money demand in the long-run and the interest rate was significant only in the short-run. Faridi .M, (2013) evaluated the estimation of money demand function bound testing approach to cointegration in Pakistan. This study applied the econometric method of (ARDL). This study used the time from the year 1972 to 2011. The source of collecting data was an economic survey of Pakistan and a handbook of statistics. The observer described the variables like real demand for money (RM), deposit rate (R), financial innovation, and exchange rate. The result of this study shows that there was a positive relationship between real GDP and financial innovation and exchange rate real deposits have negatively related to real demand for money. Kippur .M, (2014) evaluated some empirical suggestions on the stability of demand for money from the quarterly period of 2001 to 2014 in Kenya. The observer used variables like monetary aggregate, real GDP, real nominal deposit rate; price level CPI, nominal Treasury bill rate, inflation rate, interest rate, exchange rate, and volatility measure. The observer applied the error correction model and bound testing technique

which is based on ARDL. The source of collecting data was IMF. The final result showed that the Treasury bill rate and exchange rate hurt money demand and the deposit interest rate has a positive effect on money demand. Farazmand and Moradi. (2015) overlook the determinants of money demand in MENA from the period of 1980 to 2013. They described the variables like money aggregates, real GDP as scale variability (Y), exchange rate, and inflation. They applied the Levin, Lin, and Chu (LLC), IM, Pesaran and sin, ADF test, and PP test. They also applied the Pedroni test for checking the critical values. The observers also used the GLS (Galbis) estimation. In the end, they showed that income and exchange rate would have a positive and negative impact on M2 and inflation had only negative impacts on M2. Iftekhhar et al. (2016) overlook the revisiting determinants of money demand function in Pakistan from the annual time series data from 1972 to 2013. This study used the variables like money demand, rural and urban population, real interest rate, GDP, the official exchange rate, fiscal deficit. This study collected the data source of interest rate from international financial statistics and fiscal deficit from the Pakistan economic survey. This study applied the econometric method of Auto-Regressive Distributed interval and PP test. The observer concluded that the rural population, interest rate, and the exchange rate had an important and worse influence on the variable of money demand in mutually the period of the short-run and long-run. Hassan et al. (2016) examined for measuring the

demand function in Pakistan. They used the time series data from 1972 to 2013. The source of collecting data was a world development indicator (WDI) and the fiscal deficit would have taken from an economic assessment of Pakistan. They took the variables like real income, tax revenue, trade rate, interest rate, monetary scarcity internal and external arrears, price rises, and urban-rural population. They applied the econometric technique of (ARDL). They also applied the parron test and the KPSS test to check the stationarity of variables. The final result showed that interest rates remained major and adverse effects on money demand in the short-run and long-run and exchange rate was also a considerable and negative effect on money demand.

3. Theoretical Framework

In macro-economics, there are many theories of money demand. For example Classical, Keynesian, Tobin, Boumel, and Friedman. But in this study, the Classical theory of money demand and the Post Keynesian theory of money demand are discussed. So, in the first section, this study describes the Classical theory of money demand and in the second section, this study describes the Post Keynesian theory of money demand.

3.1 Money Demand

In economics, demand for money is the holding of financial assets in the form of money such as bank deposits and cash rather than investment.

3.2 Classical Theory of Money Demand

In the classical theory of money demand, first of all, we discussed the (QTM) Quantity theory of

money. To describe the cataloging of the nearness of price in the classical theory. So we studied the role of money.

3.2.1 The Equation of Exchange

We discussed the theory of money, according to the Classical's is the exchange of the equation and identify the relating to the bulk of transaction at recent prices for the supply of money periods the incoming rate of the dollar. This incoming rate processes the middling number of spells dollar is used in transactions within the era of time is called the rapidity of money. The theory of Classical's (QTM) quantity theory of money is explained by Irving Fisher, which expresses equality as:

$$M_V T \equiv P_T T$$

Where "M" shows the amount of cash, "VT" shows the transaction rapidity of cash, PT shows the price catalog for the transacted goods, and "T" shows the measurements of trades. The relationship between these variables is unique due to the explanation of velocity. The transaction variables show not only sales and buyers of newly-produced goods, but also exchanges earlier goods and economic assets.

$$MV \equiv PY$$

"M" shows the currency and "V" shows the rapidity of money income. The equation expressed in income velocity as:

$$V \equiv PY/M$$

The equation of exchange is an axiom and does not explain the variables that are used in classical theory. Fisher and other quantity theorists assumed that the equilibrium of exchange is determined by other forces with the omission of the price level. The equation of exchange determines the price level. According to Fisher, under the conditions assumed, the price level fluctuates (1) directly as the QTM in circulation (M), (2) directly as the velocity of its circulation (v), (3) and inversely as the volume of trade. These three relations establish the quantity of money. First of all, money is assumed as Metallic money like gold, silver, etc. paper money and bank deposits. The important discussion is that the amount of demand for money is organized by monetary policy. According to the quantity theorist and Fishers, the level of equilibrium of velocity was resolute by official features and regarded as static in the short run. If the rapidity is fixed and not easily well-defined to associate MV and PY, the exchange of the equation is not simply a definition. The equation of exchange now states a relationship between the specified price level and the money supply.

$$MV = PY$$

Or

$$P = V/Y M$$

Where M doubles, P also doubles or a 20% increase in M, the price also increased to 20%. So the quantity theory of money regulates the price level.

3.3 The Cambridge Approach to the Quantity Theory

The name of Cambridge University, the academic home to its creators. A.C Pigou and Alfred Marshall also determined the proportionate relationship between the aggregate price level and quantity of money. The establishment of this relationship was less mechanistic than the transactions. Marshall focused on the individual decision because people want to hold money in cash to the convenience of the transaction as compared to the stores of value. Money also facilitates safety by the chance of troublesomeness and bankrupts. But Pigou noted, “Currency hold in the hand yields no income”. The equation of the Cambridge approach is written as:

$$M^d = KPY$$

The form of currency “K” is supposed to be stable in the short run. According to the equilibrium level. The money supply is equivalent to the total amount of money demand.

$$M = M^d = KPY$$

The equilibrium of Fisher’s version of the equation of exchange and the Cambridge equation is written as:

$$M1/K = PY$$

Both two equations are correspondent with V and 1/K. Keynes condemned the classical quantity theory by given that a new concept of demand for money. According to the linguistic of classical

economics, “There is too much money chasing too few goods”.

3.4 Money in the Keynesian System

We first describe the money demand in the Keynesian system.

3.4.1 Keynes Theory of Money Demand

Keynesian theory of money demand is the theory of Money demand. There are three different motives of money demand in the Keynesian system.

- Transaction Demand
- Precautionary Demand
- Speculative Demand

3.4.1.1 Transaction Demand

The first motive of the Keynesian theory of money demand is the transaction motive. It means money is the medium of exchange and individuals want to hold money for the transaction. Money is the bridge to make the gap between the receipts of expenditure and income. Income is the best measure of a transaction and this motive depends positively on income. Money is used to buy commodities and bonds also. Brokerage fees included in buying bonds so some transactions would make it not profitable to purchase bonds for a short period. Keynes did not emphasize the interest rate when defining the transaction motive for money holding. But especially it has proved for the business sector. The high volume of transactions in the firms by cash management to reduce their money holding.

3.4.1.2 Precautionary Demand

It is the second motive in the Keynesian theory of money demand. In this motive, people want to hold additional money for a precautionary purpose like medical, natural disasters like floods, famine, and repair bills. Keynes said that the amount held for precautionary demand for money depends positively on income. We shorten our discussion the subsuming the precautionary demand under the transaction demand. The transaction may be of expected or unexpected ones.

3.4.1.3 Speculative Demand

It is the third motive of speculative demand for money. According to Keynes, this motive is the idea of the nominal IR. The amount of demand for money for speculative demand for money depends on the current rate of interest compared to the normal rate of interest by several individuals. Keynes said that the relationship between the interest rate and money demand would not stable actively. It is an important result that has not been fully valued by the followers of Keynes. In the microeconomic Keynes theory of speculative demand discussed by Tobin in (1958). Keynes explained the speculative demand for an individual in the portfolio of money or bonds. This is different from experience. The liquidity preference is regulating as manners to possibility under uncertainty. An indefinite interest rate probability means some threat of assets loss. The amount of threat rises with a rise in bonds. Different money holders have different expectations of the interest rate.

4. Data and Methodology

In this study, the methodology is very important while selecting the variables to achieve suitable results. The current study observes the money demand function in Pakistan from 1975 to 2015. In this study, the data of all the variables are

taken from the World development indicator (WDI). Several previous studies used different independent variables to determine the money demand function. But the current study used GDP, INF, EXR, and PG as independent variables to determine the money demand function.

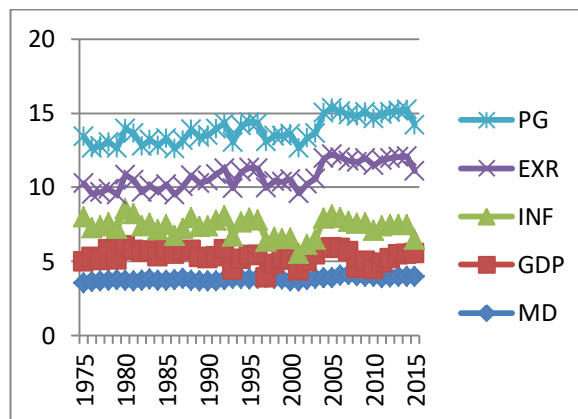
Table 1: Description of Variables

Variables	Description	Expected Sign	Measuring Units	Sources
MD	Money Demand		Annual	WDI
GDP	Gross Domestic Product	Positive	Annual %	WDI
INF	Inflation	Positive	Annual %	WDI
EXR	Exchange rate	Positive	Annual %	WDI
PG	Population Growth	Positive	Annual %	WDI

Source: The data are taken from World Development Indicators.

The above table shows the explanation of the variables selected for this paper. Further, the measuring units and sources from which the data are taken are also mentioned in the table. The expected signs column expressed the relation of MD with other variables, i.e MD has a positive relationship with all variables.

Figure 1 shows the trend of the dependent variable and independent variables.



The figure shows that the trend of all the variables like MD, GDP, INF, EXR, and PG over 41 years data as 1975 – 2015. In the above figure, all the independent variables are positively related to the dependent variable. All the variables fluctuate but positively increases.

4.1 Econometric Issues

The section of this study is used to explain the basics of econometric issues like the Auto-Regressive Distributed Lag model (ARDL), Stationarity of data, and the procedure of the bound testing approach. The (ADF) Augmented Dickey-Fuller test is recycled to the lagged length of the dependent variable to solve the problem of Autocorrelation in the model. It is also used to

check, the integration of the model. ARDL approach can be used if all the variables are used in both integrated of order I(0) and I(1). If all the variables are used only integrated in the order I(0) then OLS can be used. Johanson co-integration can be used only if variables are integrated of order I(1)

.Table 2: ADF Unit Root test

Variables	AT LEVEL		AT 1 st		Results
	I	I&T	I	I&T	
MD	-2.219733*	-3.776205*	-5.495991*	-5.407193*	I(0)
GDP	-4.149610*	-4.711670*	-9.497718 *	-9.370965*	I(0)
INF	-3.512439*	-3.412239*	-6.993881*	-6.80520*	I(0)
EXR	0.029977	-2.133895	-5.101353*	-4.997976*	I(1)
PG	-4.888864*	-4.656698*	-1.920602	-1.669024	I(0)

Source:1% Level of Significance=*

Table 2 is prepared with the help of E-Views Software 9.5 to check whether the variables, choose for this paper are stationary or not. To check the stationary level ADF (Augmented Dickey-Fuller) test is applied. The Stationary levels of variables are checked to avoid weakening the regression of the time series data used in this paper. The results of table 2 show that the dependent variable MD and other independent variables GDP, INF, EXR, and PG are stationary at a 1% level of significance.

4.2 Model Specification

The estimated equation of the demand for money function is as.

$$MD = \beta_0 + \beta_1(GDP) + \beta_2(INF) + \beta_3(EXR) + \beta_4(PG) + \mu_i$$

Where;

μ_i = error term

β_0 = intercept term

$\beta_1, \beta_2, \beta_3, \beta_4$ = slope of the coefficients

GDP=Gross domestic product

INF=Inflation rate

EXR=Exchange rate

PG=Population Growth

In this model, money demand function is positively and significantly related to all other independent variables like the Gross domestic product, Inflation, Exchange rate, and Population growth.

An ARDL model the following processing can be followed.

$$\begin{aligned}
 = & \gamma_0 + \sum_{i=1}^p \omega_{1i} \Delta GDP_{t-i} + \sum_{i=1}^p \omega_{2i} \Delta INF \\
 & + \sum_{i=1}^p \omega_{3i} \Delta EXR_{t-i} + \sum_{i=1}^p \omega_{4i} \Delta PG_{t-i} + \sigma_1 MD_{t-1} + \sigma_2 GDP_{t-1} \\
 & + \sigma_3 INF_{t-1} + \sigma_4 EXR_{t-1} + \sigma_5 PG_{t-1} + \mu_{1t}
 \end{aligned}$$

Table 3: Results of Bound Test for Co-integration

Equation	F-statistic	Upper Bound	Results
			Co-integration
MD /GDP, INF, EXR	4.997020	4.37	Subsist
PG			

Source: Deliberate and carry out with the help of E-Views 9.5 (Qualitative Software)

The above table is applied. As can be seen in the above table 3 the calculated value of F-statistic is 4.997020 which is greater than the upper Bound value or critical value is 4.37.

Table 4: Descriptive Analysis

	MD	GDP	INF	EXR	PG
Mean	3.799585	1.477192	2.044138	3.418341	3.104279
Median	3.781386	1.575430	2.069517	3.429137	3.105250
Maximum	4.075291	2.323926	3.039964	4.633369	3.137102
Minimum	3.516542	0.014293	0.931967	2.293544	3.075601
Std.Deviation	0.126383	0.505011	0.500211	0.809764	0.020615
Skewness	0.201777	-0.883155	-0.370149	-0.084284	-0.036661
Kurtosis	2.403466	3.546392	2.742846	1.585345	1.547220
Sum	155.7830	60.56487	83.80966	140.1520	127.2754
Sum Sq.Dev	0.638905	10.20144	10.00844	26.22870	0.016999

Source: Author’s calculation (E-VIEWS 9.5)

The descriptive data quantifies that MD is the dependent variable in the study of the time 1975-2015 is found in the range of 3.51642 to 4.075291 maximum with the mean of 3.799585 and the standard deviation of 0.126383.

Skewness is 0.201777 which is positively skewed.

In this section, the ARDL approach is used to measure the money demand function with GDP, INF, EXR, and PG. It is also used to measure the variables in the short run and long run.

5. Results and Discussion

Table 5: Short Run Estimates of Model

Variables	Coefficient	Std. Error	t. Statistics	Probability
D(MD(-1))	0.657889	0.097672	6.735724	0.0000
D(GDP(-2))	-0.027243	0.013040	-2.089250	0.0530
D(INF(-3))	-0.062152	0.014392	-4.318463	0.0005
D(EXR(-3))	0.361702	0.084469	4.282073	0.0006
D(PG(-2))	19.719712	7.012257	2.812177	0.0125
Cointeq = MD – (0.2673*GDP + 0.1037*INF + 0.1683*EXR + 0.9907*PG -0.5230)				
R-Squared	0.888868		AIC	3.736649
Adjusted R-Squared	0.749954		SBC	-2.822345
F-Statistics	6.398677		HOC	-3.414314
Prob. (F. Stat)	0.0000		Durbin- Watson Stat	2.456310

Source: (E.VIEWS 9.5)

The above table shows the short-run estimation of variables with a counter equation. The computed values of R-Squared and Adjusted R-Squared are 0.88 and 0.74 respectively. This means there is 88% and 74% variation in MD through

independent variables like GDP, INF, EXR, and PG. The value of the Durbin –Watson Test is 2.45 which means there is no auto co-relation between dependent and independent variables.

Table 6: Long Run Estimation of Model

Variables	Co-Efficient	Std. error	t. statistics	Probability
GDP	0.267291	0.117724	2.270476	0.0373
INF	0.103697	0.045802	2.264046	0.0378
EXR	0.168321	0.025936	6.489844	0.0000
PG	0.990687	0.941497	1.052246	0.0423
C	-0.523043	2.888279	-0.181092	0.8586

Source: Author Calculations (E-VIEWS 9.5)

Table 5 describes the long run estimation of the Model. In the table, the value of the co-efficient of GDP is 0.267291 and it is positive. The value of the co-efficient of GDP described that a 0.267% rise in GDP will increase the MD by 1%. Because the relationship between MD and GDP is positive. If the value of any variable is less than 0.05 then the variable stays important. And if the importance of any variable is superior to 0.05 then the variable is insignificant. But in this study all the variables are significant.

4.3 Stability Test

In this section, the Autoregressive distributed lag model (ARDL) is used to estimate the CUSUM test to check the stability of the data. In this model, all the variables are stable because the CUSUM test is on the significance of 5%. In this model CUSUM square test is also the significance of 5%.

Figure 2: Plot of Cumulative Sum of Recursive Residuals

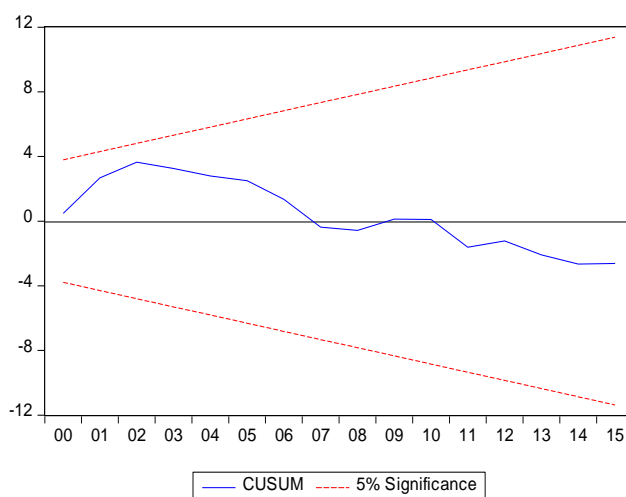
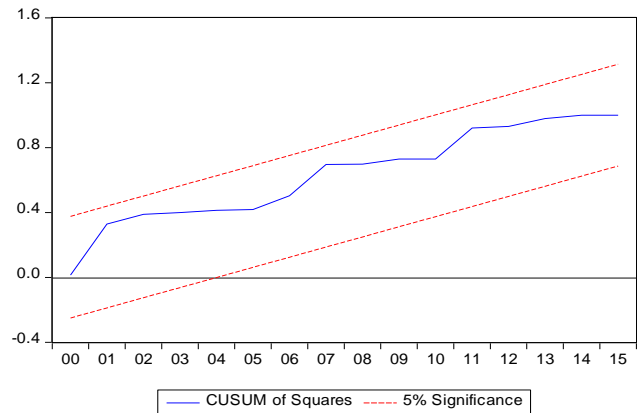


Figure 3: Plot of CUSUM Square Test



6. Conclusion and Policy

Recommendation

6.1 Conclusion

In this model, we conclude that in Pakistan money demand function has been estimated by using the Auto Regressive Distributed Lag Model (ARDL) in time series data from 1975-2015. In the first chapter that consists of the introduction in which discuss the money demand that how money demand plays an important role in our economy or monetary policy and the objectives of this study was to examine the determinants of money demand and to examine the relationship between the demand for money with Inflation, (GDP) Gross Domestic Product, Exchange rate and Population Growth. The third chapter is the theoretical framework in which discusses the relationship between MD, GDP, and EXR, and for this purpose study the Classical and Keynesian theories.

The results conclude that money demand is an important factor in our economy of Pakistan. In this model, the results show that money demand is positively related to Gross Domestic Product (GDP). In this model, the result shows that all the

independent variables are positively related to money demand in Pakistan. The study used the unit root and a regression model to analyze the effects and significance of variables on money demand and the overall efficiency of the model. The result shows that the CUSUM test co-integration analysis is statistically significant of 5%. This paper also concluded that money demand is a very important variable in monetary collections in the case of economic and monetary policy or program.

6.2 Policy Recommendations

In this study policy implication of money demand function is given below.

- The central bank of Pakistan should work on monetary policy to safeguard the circulation of money which does not surpass the money demand function.
- A policy recommendation of inviting private funds and more contributors to the market of money is very essential and make the money market more cooperative and dynamic to the monetary policy.
- In this implication, the policymakers of Pakistan should establish an appropriate monetary policy to determine the money demand function.

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