Money and Income Relationship in Pakistan: A Critical Review

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Abstract

Monetary policy has remained one of the most fundamental topics in macroeconomics. From the beginning of macroeconomic history, various arguments have been given on the role of money in affecting the real economic activity but in this regard the evidence is inconclusive. A lot of empirical work has been done on the stance of monetary policy with a variety of approaches and still this process is continued. The present study aims to critically analyze some important studies for Pakistan concerning the money and income relationship. The analysis in the study reveals that almost all these studies on the issue suffer from some methodological problems and their findings do not decide conclusively whether money responds to economic activity or monetary policy does not supplement the process of output growth in a significant way. It is not easy to diagnose how differences in statistical procedures affect these results.

Keywords: Money, Income, Macro-Economics, Pakistan

Introduction

> *"Though many macroeconomists would profess little uncertainty about it, the profession as a whole has no clear answer to the question of the size and nature of the effects of monetary policy upon aggregate activity."* [1]

Considerable empirical literature exists on explaining the links between monetary and real macroeconomic activities. This literature culminates in near consensus on the long term relationship between monetary and real economic activities as the long run neutrality of money is well established in economic literature. However, the short run interactions among the monetary and real variables, which are of vital importance for

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the conduct of monetary policy, are still widely debated by the economists. While the New Classical economists maintain that prices are flexible and adjust *quickly* to clear the markets, the New Keynesians argue that market-clearing models are unable to explain short run economic fluctuations and believe in *stickiness of prices*. Based on the *sluggish adjustment* of prices, both the Keynesians and the Monetarists recognize the effects of monetary policy on production activities in the short run.[2]

Economists divide money growth into two components: systematic or anticipated money growth and surprise or unanticipated money growth. Anticipated money growth, like anticipated changes in aggregate demand, in general, would already have been taken into consideration in the economic agent's behavior and as a result it would be unable to influence real variables. Its influence is confined to changes in price level. On the other hand, surprise money growth and growth in aggregate demand, in general, will positively influence the real economic variables with no effect on the rate of inflation.[3]

The rational expectations school of thought combines the monetary neutrality hypothesis with rational expectations hypothesis. They argue that neither monetary policy nor any other aggregate demand management policy is able to influence the real variables; however, these policies may be effective in controlling inflation.[4] Nevertheless this view of the rational expectations school of thought has not been universally accepted, many theorists and empiricists state that anticipated money has real effects. Monetary empiricists, claim that anticipated money may have real effects.[5] Other Theorists have constructed overlapping contract models, sticky price models, and limited participation models in which anticipated monetary shocks also have real effects.[6]

Mostly it happens that the policy makers at central banks are confronted with explicit policy questions like: what will be the effect of a one percentage point change in monetary policy instruments (interest rates or growth in money supply) on the prices and output in the economy? How the impact of monetary policy will differ in case of anticipated and unanticipated change in monetary policy? Similarly, the policy makers also seek information on the response pattern of prices and output as the impact of monetary policy always entails some lags. A huge volume of theoretical and empirical research has tried to answer these questions. However, the results tend to differ on account of differences in empirical methodologies, definitions of variables, different time periods, sampling intervals etc. Moreover, the results also differ due to country specific factors including the level of financial development and monetary policy regimes followed by the countries.

In a developed economy monetary management is relatively uncomplicated. If all the structural parameters are known, the policy maker can achieve the desired level of target variables simply by manipulating any set of instruments under his control according to the policy reaction function implied by the model. The problems of monetary management are more acute in developing countries than they are in developed countries and often they are the source of major political unrest. The survival of national governments in developing countries often depends on how these problems are addressed. Some peculiar characteristics of developing countries coupled with externally imposed policy prescriptions have made it interesting to investigate the impact of money on output and prices and examine whether the results are fundamentally different from that of developed countries. The objective of this paper is to review the existing studies on the subject to establish whether a dynamic relationship among key aggregate economic variables like output, price level, interest rate and the stock of money has been established in case of Pakistan.

Rest of study is organized as follows: section II presents a brief theoretical review on the subject; the review of existing literature on Pakistan is given in section III and finally section IV concludes the study.

Theoretical Perspective

Monetary policy has remained one of the most fundamental topics in macroeconomics and different schools of thought differ strongly in their stance on monetary policy. However, overtime many issues related to monetary policy have been settled theoretically. The differences in the choices of models have also been narrowed down and it is common to incorporate certain assumptions of one school of thought in the model of the other school of thought. Nevertheless, the empirical research has not yet found any conclusive answer for many money related issues. A lot of empirical work has been done on the monetary policy stance with a variety of approaches and still this process is continued.

The importance or irrelevance of money in explaining the real economy is often seen as a fundamental question in macroeconomics, yet the question remains largely unresolved. Representing thoroughly the different schools of thought or even the nuances existing within each school is well beyond the scope of this article. The following presentation should therefore be seen only as an overview of the various viewpoints on the importance of money with respect to the real economy.

Classical economics is widely regarded as the first modern school of economic thought. Adam Smith's *The Wealth of Nations* in

1776 is usually considered to mark the beginning of classical economics. The classical economists believed that only real factors can affect real output and employment, hence money was not important. They considered it to be only "a medium of exchange" that determined the nominal value but had no effect on real factors like real output, employment and real interest rate. Thus Fisher explained the role of money in classical system as solely to determine the price level. The classical system was based on the automatic price and wage adjustment, so in their view, economy tends to adjust quickly in response to changes in any government policy. According to Say's Law of markets, "*supply creates its own demand"* hence any increase in money supply will lead to increase in prices only but effect on output will remain unchanged.[7] In other words, there is no need for monetary policy in the classical system except for stabilizing the prices. Accordingly, there is true dichotomy between the real and the nominal sectors. However, the classical dichotomy between the real economy and monetary sector was disputed by Patinkin on the grounds that it did not take into account the real balance effect.[8]

In total contrast to the classical economists Keynesians regarded money as one of the several important determinants of economic activity because money affects income via the interest rate: when money supply increases, interest rate decreases which, in turn, increases aggregate demand and output. This is also known as liquidity effect. In the Keynesian framework, the effectiveness of the monetary policy crucially depends upon the aggregate demand sensitiveness to the change in interest rate. Keynesians believed that economy is unstable as a result of instability of aggregate demand, primarily due to the instability of private investment. In order to stimulate private investment, in their view, aggregate demand must be managed, hence, only aggregate demand management through monetary and fiscal policies can effect the real output and employment. Hence, Keynesians were the interventionists. Slow price adjustment was their basic assumption due to which it is possible to increase real output and employment by using proper monetary policy in the short run. However, by introducing liquidity trap, they assigned greater importance to the role of fiscal policy compared to the monetary policy. In the long run, Keynesians considered monetary policy as ineffective in determining output and unemployment. Keynesians cited the Great Depression as a proof of the limitations and ineffectiveness of monetary policy in steering the economy out of the recession. They proved the success of fiscal policy to overcome the Great Depression and promoted it as the focal point of control for the economy at the expense of monetary policy. Moreover, the Keynesian revolution

put aside preoccupations with the business cycle for the simpler problem of determining output, interest rates and prices at a point in time.

The 1960s saw the rise of "Monetarism" subsequent to the work of Friedman and Schwartz, Friedman and Meiselman, and Andersen and Jordan.[9] The debate on the relevance of money in affecting the real economy was reanimated in part by Friedman and Schwartz.[10] They reassessed the role of money with respect to the Great Depression. The Keynesian position was that monetary policy had been ineffective in getting the economy out of the Great Depression. But the interpretation of events given by Friedman and Schwartz suggests that the Depression was in fact a tragic testimonial to the importance of monetary forces. In their view, the failure of the Federal Reserve to deal with the Depression was not a sign that monetary policy was impotent, but that the Federal Reserve exercised the wrong policies. They did not claim that Fed caused the depression only that it failed to use policies that might have stopped a recession from turning into a depression. Friedman's contribution to the monetary debate is evidently much more sweeping than simply re-interpreting the events of the Great Depression. For instance, the natural rate hypothesis implies that in the long run the monetary authorities are not able to exploit any trade-off between inflation and unemployment on the grounds that economic agents cannot be fooled in the long run .Friedman's advice to the monetary authorities is to target monetary aggregates directly instead of interest rates. This is in order to focus on one objective of price stability. According to Freidman:

> "*We simply do not know enough to be able to recognize minor disturbances when they occur or to be able to predict either what their effect will be with any precision or what monetary policy is required to offset their effects".*[11]

Hence, the Monetarists are non-interventionists. The New Classicals who have their roots in the original classical school of thought are also the supporters of non-interventionist policy. In fact, the New Classical economists are more skeptical about the usefulness of the stabilization policies. Their basic theme is that stabilization of real variables such as output and unemployment cannot be achieved by aggregate demand management. The values of such variables in both the short run and the long run are insensitive to systematic aggregate demand management policies. They called it *New Classical Policy Ineffectiveness*. They criticize both the Keynesians and the Monetarists on their assumption concerning price expectations i.e., that labor suppliers form expectations of the current aggregate price level (or the future inflation rate) on the

basis of past behavior of prices-adaptive expectations. Furthermore, they assume that such price expectations adjust slowly and can be fixed for the purpose of analysis. The New Classicals argue that economic agents form rational expectations, rational in the sense that they will not make systematic errors. According to Muth, the originator of the idea, "expectations are formed on the basis of all available relevant information concerning the variable being predicted."[12] The basic difference between the Keynesians and the New Classical economists about the concept of expectations is that while the former maintain that the agents adjust their expectation of a variable to the past behavior of the variable slowly, the later focus on rational expectations where economic agents use all available information intelligently and assess the implication of the information for the future behavior of the variable.

Furthermore, with regard to wage determination the Keynesians supported the Phillips curve hypothesis of an inverse relationship between inflation rate and unemployment rate. They maintained that the rate of change of nominal wage is governed by the unemployment rate. As in steady state, nominal wage and inflation grow by equal proportion in response to growth in money stock, hence, they think that there exists a negative relationship between inflation and unemployment. However, the Phillips curve hypothesis is criticized by the Monetarists. Phelps and Freidman asserted that unemployment depends upon "real" not "nominal" wage. So may be, workers are misinformed about the economy's situation in the short run but, in the long run, their decisions are made in keeping the real wages in view. Hence they presented an Augmented Phillips Curve, which is vertical.[13] This idea was supported by the New Classical school of thought, when Lucas presented the *Monetary Misperception Theory*.[14] This theory asserts that in the short run, sellers have incomplete information about the situation of economy and if there is an increase in prices they cannot perceive whether it is increase in relative prices or an economy-wide average increase, so they cannot decide whether to increase output or not. In this way output and unemployment can be increased in response of change in money stock, but it is temporarily and in the long run, there is no inflation-output trade off. More recently Real Business Cycle proponents have returned to models where money plays no role in explaining real variables.[15]

The linkages among money, output, interest rate and prices have been the focus of extensive debate and analysis. Much of the debate among the New Keynesians and the New Classicals is centered on the relative effectiveness of monetary policy for influencing the economy. The discussion however is still inconclusive, past empirical evidence on the relative contributions of money and credit in the propagation of

monetary policy impulses still remains ambiguous. On one hand, evidences of monetary effect are presented by many.[16] On the other hand, results of money neutrality are also reported.[17]

While considerable evidence exists on the linkages between money and economic activity in developed countries, evidence for developing countries like Pakistan is limited to a few studies.[18] These studies suffer from several methodological and theoretical shortcomings and thus the findings of these studies cannot significantly help to frame future economic policies. The next section gives a critical review of these studies chronologically.

Review of Empirical Studies on Pakistan

Hussain is a pioneer investigation into the interrelationship among money, price and output in Pakistan. The study uses a single equation model to test the relative impacts of monetary and fiscal impulses on nominal income. Using annual data for the period 1949 to 1970, the study tests three related hypotheses. By comparing the sizes of the estimated impacts of fiscal and monetary policy on GNP, it accepts the hypothesis that output responds more to fiscal policy actions than to changes in the money stock. Secondly, comparison of the statistical significance of the coefficient estimates for fiscal and monetary policy actions led the author to accept the hypothesis that fiscal actions are more reliable in their impact on GNP than monetary actions. Finally, comparison of coefficient estimates on lagged monetary and fiscal policy actions has led the author to accept the hypothesis that fiscal actions affect GNP faster than do monetary policy actions. He concisely summed up that the response of economic activity to fiscal actions compared with that of monetary actions is larger, more predictable and faster.[19] However, it is important to note that while the single equation model is simple and easy to estimate, the equations are not derived explicitly from a larger model and therefore important feedback mechanism may be omitted. If the right hand side variables in the equations are not exogenous, the equation may be a part of system of equations where variables are interdependent. Therefore, the study is a pure academic exercise without taking into account these limitations of the single equation model .Fu2`rthermore, the study fails to relate the outcome of the model to the prevailing situation with regard to the working of the fiscal and monetary policies in Pakistan over the period of the study.

In another study, Hussain applies Sims causality test procedure for the period 1971 to 1988 for determining the nature of relationship between money and income in Pakistan.M1,M2 and monetary base, MB, are used a money variables and GNP for income level. The F-tests are

conducted by choosing one year past value and one year future value of the Regressor. He sums up his results as follows: (i) a unidirectional causality runs from monetary base to GNP; (ii) a unidirectional causality runs from M2 to GNP; and (iii) a unidirectional causality runs from GNP to M1.The results of this study are weighed down by some limitations: (a) Sims test is particularly sensitive to the lag structure but Hussain has selected one period lag without any statistical and economic justification; (b) the F-test he has used to determine the direction of causality is actually a t-test of a single coefficient.[20]

In the early nineties research on monetary issues in Pakistan adopted the multivariate system. The first study to apply VAR model to the Pakistani data was Chishti et al. [21] The authors use annual data covering the period 1960 to 1988 and estimate a VAR model which included ten macroeconomic variables: real GDP, consumer price index, terms of trade between agriculture and manufacturing sectors, unemployment rate, real investment, real value of remittances, real exports, real external resources, money stock and real government expenditure. F-tests for causality find a unidirectional causality running from money to output. Price does not cause money but money does cause price. Impulse response analysis reveals that money produces a strong positive impact on real GDP and general price level. Forecast error variance decomposition (FEVD) shows that money can explain 33 percent of the variation in output and 40 percent in price at the end of the fifth year.[22] This finding unequivocally supports the Monetarists' position in Pakistan. A major limitation of the above study is that it includes too many variables when data on variables spans only from 1960 to 1988.The model includes ten variables with only 28 yearly observations. To save degree of freedom lag length is only truncated to only two periods, which is not sufficient to capture the dynamics of the issues involved. In addition, when too many variables are included in a VAR model, additional complications arise. The simultaneous relations among different variables and policy innovations make it difficult to correctly identify the shocks. There are several core macro variables that policy makers are most concerned about: interest rate, GDP, consumer price index, money stock, unemployment rate and exchange rate. Additions of more variables would certainly have some costs. Either it is more infeasible to obtain precise estimation of the model, as it grows larger or make judgmental adjustments to keep the size of the model manageable. This often leads to implausible policy implications.

For assessing the interaction among the rate of inflation, the rate of change in real gross domestic product, the rate of change in terms of trade, the rate of change in government expenditure and the rate of

change in money supply, Momen has conducted a study for ten industrial and agricultural countries including Pakistan. The study covers the time period from 1958 to 1985.The author constructs a reduced form VAR model where each of the five variables is regressed on past values of itself and past values of the other four variables in the system. He employs a likelihood ratio test to determine the lag length and then estimates the reduced form VAR model. He finds that the adjusted R^2 in all the equations for all the countries are very high and attributes it to the high explanatory power of the model and the correct selection of the variables. In addition, he conducts F-tests to determine causal relationship among the variables and concludes that in the industrialized countries causality runs from money supply to real GDP, which is in conformity with the Monetarists view. In agricultural economies including Pakistan, causality runs in the opposite direction. Finally, he computes 1-year, 3-year, 9-year and 15-year future forecast error variance decompositions of the variables due to shocks in the variables and tries to determine their endogeneity and exogeneity. He claims that ordering of the variables can be determined by looking at the initial impact on each variable due to shock in the variable itself. He finds that money supply is exogenous in the industrialized countries and real GDP is exogenous in predominantly agricultural economies.[23]

Though this study is theoretically sound but it is subject to some serious shortcomings: (a) serious questions can be raised about the data set used. The study has used data from 1958 to 1985 for all countries but Bangladesh gained independence in 1971, before that it was a part of Pakistan. Thus, the author uses the same data for both the countries up to 1971, which is faulty and definitely gives misleading conclusions for both Bangladesh and Pakistan; (b) he has used the results of variance decomposition to determine the ordering of the variables. But ordering of the variables in VAR is normally ad hoc. Forecast error variance decomposition (FEVD) is used to determine the relative strength of one variable in explaining all other variables in the system. Before computing FEVD, we need to order the variables only if we employ the recursive identification scheme; (c) he does not bother to orthogonalize the shocks which is very important to isolate their effects. He employs the reduced form innovations to compute variance decomposition to draw different conclusions. But if reduced form errors are correlated, which is most likely, this methodology may lead to erroneous conclusions and that the estimated variance-covariance matrix of the errors reflects the seriousness of the problem. The error term in the first equation is a linear combination of structural errors. But structural shocks are independent and should not be correlated with each other. We need to orthogonalize

the structural shocks to isolate the individual effects, but unfortunately, this study ignores this important issue.

The objective of the study by Ahmed is to investigate the issue of causality among key aggregate macro-variables in Bangladesh, India, and Pakistan; all are members of the South Asian Association for Regional Cooperation (SAARC). This is accomplished by conducting bivariate, multivariate and block causality tests. For Pakistan the study has used the quarterly data from1972-I to 1997-II. Causality tests suggest that a bi-directional causality exists between money and prices in Pakistan. The policy implication of such a result is that an increase in money stock fuels prices in Pakistan, which in turn leads to an increase in money stock.[24] It supports the view of real business cycle theorists who postulate that monetary changes only affect prices. Multivariate causality tests suggest that interest rate and money do not cause output in Pakistan. Block causality tests for Pakistan indicate that interest rate and money as a block do not cause output and price but output and price cause interest rate and money. It implies that the role of monetary policy is less obvious in Pakistan. In spite of the fact that this study has accurately conducted causality analysis among key aggregate macro-variables but not a single measure of dynamic analysis such as variance decompositions (VDCs) and impulse response functions (IRFs) has been used in the study.

In their study, Mehmood and Mohammad attempt to estimate the long run and the short run relationships among key macroeconomic variables *viz*., money, prices, interest rate and output in Pakistan. Annual observations for all the focused variables covering the period 1973 to 2003 have been used in the study.[25] Applying Johansen and Juselius cointegration, the study shows that there exists one cointegrating vector among the four variables. On the basis of error correction model (ECM), a unidirectional causality running from money to output has been discovered. Money and prices have been found to be independent in the short run .It is found that a unidirectional causality runs from money to interest rate and no causality exists between output and interest rate. In summary, the study shows that money supply is an appropriate intermediate target (with output growth being the final target) and not the interest rate.[26] While this study is an improvement over previous studies, it is subject to the following shortcomings: (a) though the authors have conducted the F-tests as multivariate tests but actually they are bi-variate causality tests because they consider lagged coefficients of a particular variable in a single equation of the system not the other equations of the model. Only a likelihood ratio test can do this job[27]; (b) the result of ECM indicates the exogeneity or endogeneity of a variable in the system

and the direction of Granger-causality within the sample period. However, it does not provide us with the dynamic properties of the system. The analysis of the dynamic interactions among the variables in the post-sample period should be conducted through variance decompositions (VDCs) and impulse response functions (IRFs) that are missing in the study.

Using an annual data set for fiscal years 1959 to 2003 and employing cointegration and error correction models as well as the standard Granger causality analysis Abbas and Fazal investigate the bi-variate and tri-variate causal relationships between money and income and between money and prices in Pakistan.[28] The cointegration analysis indicates, in general, a long run relationship among money, income and prices. The error correction and Granger causality frameworks suggest a one-way causation from income to money in. the long run. This implies that probably real factors rather than money supply have played a major role in increasing Pakistan's national income. Regarding the causal relationship between money and prices, the causality framework provides the evidence of bi-variate causality indicating that monetary expansion increases, and is also increased by inflation in Pakistan. However, money supply seems to be the leader in this case. But this study is beset with two weaknesses: (a) in the estimated regression equation lagged values of one variable are regressed on another variable. This is essentially a two variable single equation distributed lag model and is seriously subject to omitted variable bias; (b) the study has used the Engle-Granger cointegration approach but this approach has many defects that has been outlined in different text books.[29]

A study by Khan provides an empirical update on the impact of an unanticipated change in monetary policy on output growth and inflation in Pakistan.[30] The study has used monthly data for the period 1991-VII to 2006-IX and multivariate structural vector auto-regressions (SVAR) technique with long run restrictions based on standard aggregate demand and supply model of the economy. The results indicate that an unanticipated positive shock in monetary policy leads to: (i) an increase in industrial output, which revert to its original level over 23 to 32 months horizon; (ii) an increase in inflation; and (iii) nominal shocks remained the dominant factor in explaining variation in inflation as compared to supply disturbances. Transmission mechanism is much faster in case of Consumer Price Index (CPI) compared to Industrial Production Index (IPI), as over 75 percent increase in CPI is realized during 12 months after the shock and this impact reaches the level of over 90 percent during 18 months. Sensitivity of these results to another specification indicates that response patterns of both IPI and CPI remain

unchanged. Despite the fact that this study eliminates many of shortcomings of past studies, its findings are subject to a major data weakness. GDP has been proxied by Industrial Production Index (IPI) but IPI does not constitute a major share of GDP in developing countries like Pakistan. Knowing well that IPI covers only around 20 percent of GDP in Pakistan, it is erroneous to use this as a proxy for GDP. Thus, the policy implications of the study cannot be broad based.

More recently Husain and Rashid attempt to extend the analysis of causality between money and the two macroeconomic variables i.e., income and prices by Husain and Rashid by taking care of the shifts in the variables due to the price hikes in the early 1970s and the economic liberalization program in the early 1990s. The study covers the time period from 1959-60 to 2003-2004 and for introducing the expected shifts in the variables dummies have been used. The results indicate significant shifts in the variables during the sample period.[31] In this context, the shift that occurred due to price hikes in the early 1970s seems to be more important to be incorporated in the analysis. This study finds the active role of money as the leading variable in changing prices without any feedback and this relationship is not affected by the shifts during the sample period. For money –income relationship, real income seems to be the leading variable that affects real money in the long run. In the short run, the two real variables appear to be independent of each other. When money and income are taken in nominal terms, one way causality running from nominal income to nominal money has been found although the existence of a long run relationship between the variables is not clear. However, when both the shifts have been introduced in the analysis it is found that both the variables cause each other in the long run and they are independent of each other in the short run.[32] No doubt the motive behind the study to examine how income and price are causally related with money in Pakistan in the presence of some shifts seems to be quite inspiring. However, the way the study proceeds to achieve its objective is erroneous. The study suffers from serious methodological problems which have greatly affected the findings of the study. Some of the limitations of the study have been mentioned by the the authors themselves which include: (a) use of bi-variate causal analysis ;(b) inclusion of pre 1971 period in annual data set ;(c) use of OLS estimation technique. In addition to these acknowledged limitations, the authors fail to realize that with the inclusion of two dummies for the shifts in the money-income and money- price models, the regression analysis has become multiple in nature, while the use of Engel Granger cointegration technique only provides one cointegrating vector despite the possibility of more than one long run relationships among variables

in a multiple regression model. In this situation when there is absence of evidence provided by the authors that there does not exist more than one cointegration vectors, how can the findings of the study be validated? Moreover, the study is silent on the impact of unexpected component of one variable on the other variable in the causal analysis. Similarly the authors have not presented any theoretical reasoning that how the inclusion of the two shifts in the analysis is expected to affect the causality pattern and long run relationship between the variables[33]. It is most interesting to see that the authors have repeated their study of (2008) as it is and just introduced the shift related to price hikes in the early 1970s, thus restricting the entire study to the period 2003.This a serious flaw considering the study has been published in 2009.If the study had gone through the regular referral procedure of *The Pakistan Development Review*, this objection would have certainly been raised by the referee(s). [34]

The study can be improved if instead of using dummies for shifts , divide the whole sample into two sub-samples and estimate three regression models: one for whole time period ;second for the time period from 1972 to 1990 showing the impact of price hikes on the causal relationship between money and two other variables of the study; and third for the period 1991 to 2003 in order to examine the impact of macro economic reforms on the patterns of causality between money and two other variables of the study. However, with annual time series data the number of observations for the analysis will be reduced significantly especially for two sub-samples, therefore, use of quarterly data is recommended. Furthermore, as topic is interesting, so there is a need to repeat this exercise with quarterly data using some dynamic time series model like structural VAR (SVAR) model combined with variance decompositions (VDCs) and impulse response functions (IRFs).

Conclusion

Monetary policy plays an important role in boosting the economic growth of any country provided money is exogenously determined in the economy. Its impact on income and prices has been widely examined in the developed and developing countries in the context of Classicals, Monetarists and Keynesians controversies.Because of its great macroeconomic significance, the topic continues to draw a great deal of attention from researchers and policymakers alike.

Despite many studies on testing the money-income relationship for developed and developing economies, the topic remains relatively under explored in case of Pakistan. The review in the present study makes it clear that literature on Pakistan has not converged on any

specific conclusions regarding the effects of different variables. Evidence gathered so far makes it difficult to conclude whether money responds to economic activity or monetary policy does not supplement the process of output growth in a significant way. It is not easy to diagnose how differences in statistical procedures affect these results. There is ample room for improvement in the existing studies as well as undertaking more coherent new studies. Some modified estimation technique should be used for examining dynamic relationship between money and income level in Pakistan.

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