Pakistan's Balance of Payments as a Monetary Phenomenon: (Econometric Evidence)

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Abstract

This study examines the monetary approach to the Pakistan balance of payments for the period 1990–2008. Through the reserve flow equation, it tests whether excess money supply played a significant role as a disturbance by using co-integration tests and error-correction modeling. The empirical results showed that monetary variables do not play an overwhelming role in determining Pakistan's balance of payments. The significant relationships were found among net foreign assets, exchange rate, inflation and balance of payment, which reflected a strong positive relationship, while reflected a strongly negative relationship among money supply, domestic credit and balance of payments as posited by the monetary approach to balance of payments. But there is insignificant relationship between interest rate and Pakistan's balance of payments. The results evidently showed that, although some variables suggested by the monetary approach play significant roles in the disturbance, but the balance of payments is not a purely monetary phenomenon. Therefore disequilibrium in the Balance of payments cannot be corrected only through monetary actions by the authorities. Some other measure should also be kept under consideration like increase in exports, improving quality of products, sustained growth in industrial and agriculture sectors and decrease in imports.

Keywords: Foreign Assets, Exchange Rate, Inflation, Balance of Payment, Pakistan

Introduction

Pakistan is developing country. It achieved independence on 14 Aug, 1947, experiencing different policies regarding their economy. Pakistan is currently facing a large balance of payments deficit, which has given rise to many questions on the potential of the country as well as the causes of this imbalance. This is the main source of anxiety because like

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many other countries who are experiencing deficit in their balance of payment, Pakistan too, aims to preserve an unwavering stability in the balance of payments as one of the foundation objectives of macroeconomic policy. The International finance supports organizations such as the International Monetary Fund (IMF) and World Bank have been benevolent a great pact of concentration to stable balance of payments situations in Pakistan.

"Balance of payment" is the record of economic transaction of a country with the rest of the world during a year. It mainly consists of three accounts; current account, capital account and reserve account. Balance of payment keeps the complete record of a country trade, net foreign asset, imports and exports of goods, financial transfer and financial capital. Simply it summarizes international transaction for specific period, mainly a year.

Pakistan's situation of balance of payment has not been satisfactory since independence as stated earlier. The country with the exception of five years i.e. (1950-51, 1954-55, 1955-56, 1958-59 and 1959-60) has been running a persistent deficit in her current account. The deficit on current account is being met by short and long term loans and grants from the outside world. The government of Pakistan is making efforts to restore equilibrium in the balance of payment by increasing exports and minimizing imports but the efforts are still needed to be made more effective.

The balance of payment was in surplus of Rs. 578 crore in 1951-52, mainly due to the Korean War. There was a sharp rise in the demand of two primary goods, jute and cotton in the outside world. Due to increase in exports, the inflow of foreign currency increased and Pakistan had a surplus on current account.

The favorable balance of payment in the year 1954-55 amounting Rs. 9.9 crore was marginal. However, the surplus was due to devaluation of the rupee and greater restrictions on imports.
Pakistan again had a surplus in its balance of payment from 1958-1960 due to the introduction of bonus voucher scheme and placement of restriction on import commodities.

Excluding these five years Pakistan has been facing a deficit in its balance of payment. The deficit was Rs. 2.78 billion in 1972-73, rapidly mounting to Rs12.78 billion in 1975-76, Rs. 25.84 billion in 1978-89, Rs. 30.05 billion in 1979-80 and Rs. 31.62 billion in 1980-81.

The resource gap was being filled through loans and grants from various international agencies and friendly Muslim countries particularly Saudi Arabia. The current account deficit in the balance of payment for

the year 1996-97 was 3.28 billion dollars. It had been brought down to 1.92 billion dollars during 1997-98 and 1.14 billion dollars in 1999-2000.

Pakistan's current account balance was favorable from 2002 to 2004. However, it again slipped in to red in 2004-05 and 2006-07 due to higher import bills of oil and import of machinery etc.

As the primary objective of Pakistan is to control and minimize the deficit and disequilibrium in the balance of payment. Therefore, different adjustment mechanisms and approaches have been developed, adopted and used through different years. These approaches are, the monetary approach, the elasticity's approach, and the absorption approach. The main intend of this study is to examine the monetary approach to the balance of payments (MABP), which argues that the balance of payments is a "monetary phenomenon" (Salvatore, 1998:473). The study reveal that the dis-equilibrium in the balance of payment of Pakistan is mainly a monetary phenomenon that money plays a vital role in up-roaring in the balance of payment through price-specie-flow mechanism, developed by classical economist. This further argues that this approach also plays a key role in the correction and stabilization of the balance of payment.

The MABP model focused that as international reserve flows, with that the money stock also changes. If countries have a reverberation monetary policy, then fixed exchange will also be functioning lucratively, without devaluation of the currency. But, if the monetary policy fails then fixed exchange rate will not be working fruitfully and currency will be devaluated. This squabble divulges that disequilibrium in the balance of payment is a momentary situation which can be corrected by squabble strength in the money market. (Du Plessis et al., 1998:255)

The monetary approach to balance of payment provoked sever criticism from some economist that it only consider monetary phenomenon, ignoring other important factors of international trade in formatting balance of payment. Though, the MABP approach has been much-admired for the implications of balance of payment. It is also criticized for neglecting errors transpire in balance of payment as well as responsible for disregarding to fiscal and real that manipulate changes in the balance of payments. Others are of the view that it does not ignore other factors but mainly concentrate that balance of payment should be analyzed and observed from monetary theory. (Valinezhad, 1992:265)

Objective of the Study
The main objectives of the study are:

(i)   What are the factors and causes that bring disequilibrium in the balance of payment of Pakistan.
(ii) The monetary variables are responsible for creating disturbance of the balance of payment of Pakistan.
(iii) Whether excess of money supply has played a significant role in the disequilibrium of balance of payments in Pakistan.

Literature Review

The review of literature plays a significant role in identifying the backdrop of the study being conducted. It also gives direction about the problem and eradicates the possibility of needless repetition of the efforts. In addition, precious information on research skill is obtained from the previous research description. The main purpose of this section is to assess the related literature review.

Chacholidas(1990), studied the relationship between country's balance of payment and money supply as a "monetary phenomenon" through MABP approach. Further Stated that disequilibrium in the money market is due to the deficit in the balance of payment. If money supply exceeds money demand, then there will be deficit in the balance of payment, if money demand exceeds money supply than surplus in the balance of payment.

Howard and Mamingi(2002), emphasized that deficit in the balance of payment due to fluctuation in general price level, as the real value of nominal assets. Further, they argued that MABP specifies money supply identity, money demand identity and an equilibrium condition. They showed positive relationship of money demand with prices and income, while negative relationship of money demand and interest rate.

Dhliwayo(1996), concluded that increase in the domestic credit will have an equal and opposite change in the international reserve the co-efficient of change in domestic credit has known as offset co-efficient, because it has inverse effect on international reserve. Further, added that basic equation of MABP, the deficit in balance of payment mainly comes due to the divergence of growth of domestic credit and money demand.

Econometric Approach and Model

In this section we will describe the data, data source and sample size. Further the construction and testing of the model, and constructing the variables will be our main area of concern.

Data descriptions and source
In this study for the analysis of balance of payment of Pakistan, the time series data are used covering the period from 1990-2008. The secondary data are regress and obtained from state bank of Pakistan and Federal Bureau of Statistics.

Constructing of variables
The following variables have been used in this study. The dependent variable is the balance of payment of Pakistan, while the Independent variables are money supply (M1, M2 & M3), net foreign asset (NFA), exchange rate,   inflation at consumer price index, interest rate or discount rate, and domestic credit.

Money supply consist of printing new notes include M1, M2 and M3 by the state bank of Pakistan. M1 includes liquidity money like high powered money, coins, currency cash, assets as well as demand deposits and assets. M2 contains M1 plus time deposits and saving deposits. It mostly quantified the money circulation. M3 is the broader concept of money, which includes M2 with the addition of large demand deposits, money market funds and entire supply of money. Net foreign assets (NFA) are the value of all the assets of a country or its residence in foreign country minus the value of assets owned by foreigners in that country. A net foreign asset equals the sum of international reserves and gold. Domestic credit is the funds issued and allocated by central bank to their local or domestic borrower and government. It is the net claims of monetary sector on government and on private sector. The inflation represents the increase in the price level during a year. The interest rate is used for discount rate which is paid on the borrowed money.

Model specification
The model aims to illustrate whether monetary variables are fundamental in determining the balance of payments of Pakistan. In order to test this role, the study employs the standard model of the MABP. The equation and expected signs of the coefficients are as follows:

$$BOP = \beta_0 + \beta_1 LMS_t + \beta_2 LNFA_t + \beta_3 INF_t + \beta_4 LEXGRATE + \beta_5 INT_t + \beta_6 LDCRE_t + \mu_t$$

Where,
BOP   = Balance of Payment
MS   = Money supply
 NFA   = Net foreign assets
EXRATE = Exchange rate
INF   = rate of inflation

INT   = Interest rate
DCRE = Domestic credit
μt =stochastic or error term

Estimation procedure
During the regression analysis estimating the econometric model, the researchers often face the problem of unit roots especially in time series data. Therefore, to test the reliability of some econometric models and theories, some of researchers then use data that are at least once differenced. Sometimes essential relationship has been ignored in the estimation. So the Engel-Granger approach and unit root test are applied firstly for the correction and to make the data stationary. But due to high fluctuation and trend it is impossible to make the whole data stationary.

For the results and estimation procedure, advanced statistical software E-Views are used. The null hypothesis states that monetary variables put significant effect on the balance of payment of Pakistan. The significance of results obtained from regression analysis is checked from *t*-statistics at 5% confidence level. If *t*-ratios are equal to or greater than two(2) in absolute than the estimator will be significant, if it is less than two (2) in absolute than estimator will be in significant and null hypothesis will be rejected.

Empirical Results and Analyses
This section explores the relationship of the variables, brief interpretation of the results and whether the deficit in the balance of payment is the sole cause. Further, the Monetary Approach to Balance of Payment is tested.

Dependent variable: BOP

Independent Variables	Coefficient	Standard error	t-Statistic
C	-10734.32	38070.50	-9.38173
LMS	-10.51596	64703.045	-16.22723
LNFA	129138.365	17469.696	29.76451
INFLATION	9469.0606	2339.9638	21.39742
LEXGRATE	2266.6276	11332.31	14.12114
INTEREST	-910575.8	612021.3	-1.487817
LDCRE	-91628.72	17465.3385	-26.53506

R-squared   0.945773
Adjusted R-squared   0.942919
Durbin-Watson   1.784

The result shows that inflation is insignificant with t-statistics 1.48, which is less than two (2). The value of R-squared is 0.94 which shows the variation between explanatory variable. It explain that the significant relationship between the explanatory variables are 94% and with it the overall model is highly fit means that power of the explanatory variable are quite high.

Net foreign assets are highly significant and play an important role in the balance of payment. It also plays a key role in the country's gross domestic products as well as in the country's income. However there are some variables which are negatively or inversely related to the balance of payment.

ADF test on the residual at level

Dependent variable: RESID BOP

Independent variables	Coefficient	Standard error	t-Statistic	Critical value
RESID NFA (-1)	-0.828094	0.113241	-6.332638	-3.98

R-squared   0.793
Adjusted R-squared   0.785
Durbin-Watson   1.939

The ADF test has shown that the critical value is less than the t-statistics in the regression. That's why; the series is non stationary which reflects that null hypothesis is rejected. Thus, the relationship of the variable series is non-stationary as well as their linear combination is also non-stationary. Usually, it shows the long-run relationship of the variable and the regression analysis is also correct. The short-run relationship and its further explanation are given below.

RESID BOP (-1) is the one year residua lagged value, showing the short term performance of balance of payment. The rate of adjustment is shown by coefficient. In the regression analysis, inflation is insignificant with t-statistics is less than 2, which does not have any significant impact on the balance of payment. So, inflation hasn't any relationship or association with balance of payment in the short-run.

The t-statistics of residual term is also insignificant which reflects that the variables other than monetary variables i.e. inflation, net foreign reserve, public debt, the reserves effect in short run, interest rates improved domestic credit, inflation which make goods expensive. The increase in exports and decrease in imports play a key role in the deficit of balance of payment. Other factors like the appreciation or

depreciation of currency and exchange rate are the key variables in the generating and determining the country's revenue and income. If the money supply increase and real assets of a country remain constant, then it also have adverse effect on the country's balance of payment.

It is concluded from the above discussion that during formulation of policies, some other important tools are to be brought under consideration, not only focusing on the monetary tools to obtain stable balance of payment of country. This study implies that balance of payment problems could not be solved only through monetary policies. Therefore, money supply cannot solely maintain the balance of payment of Pakistan.

With the stationary tests, the Granger causality tests were also applied to examine the relationship between the variables. The Granger causality tests illustrate how much of the current dependent variable can be explained by its past values, and whether lagged values of the independent variable can improve the explanation of such a variable (Granger, 1969). The Granger causality tests do not show the effect of one variable over the other, nor the overlapping results of one variable over the other

The Granger causality test does not have any causal relationship between domestic credit, inflation, money supply and balance of payment. Furthermore, the test proves that interest rate does indeed (Granger) cause balance of payment. However, between balance of payment and interest rate does not run any causal relationship from the former to the latter. Hence, causality here is unidirectional. Bidirectional causality was found between the net foreign assets, exchange rate, inflation and balance of payment. Furthermore, there was no causal relationship between the domestic credit, money supply and balance of payment. It seems that, in Pakistan's balance of payment, interest rates do not play any important role in changing the level of reserves. This is interesting, but it may be due to the high instability in the country. It may lead to economic instability, political instability as well as low growth rate and high risk of currency devaluation and depreciation. Moreover, due to terrorism, the foreign investors feel threatened and are afraid to invest their equity funds here.

Policy Implications and Conclusion
This study is conducted to examine the balance of payment of Pakistan through monetary approach and tested whether this approach applies to Pakistan's balance of payment situation. The main objective is to find out that excess money supply can play an important role in the disturbance of the balance of payments in Pakistan.

The study also identifies the role of excess money supply and its role on balance of payment interruption. Moreover, the study also helped to analyze the relationship of monetary variables and balance of payment. One of the main finding of this study is that Central bank requires policies for sustainable balance of payments with stable exchange rate. The empirical investigation emphasizes that the balance of payments in Pakistan is not solely a monetary phenomenon, although but exchange rate, net foreign assets and inflation has a significant association with balance of payment with respect to MABP prediction. Additionally, excessive money supply is the loss of reserves, if real assets of a country do not change, which is also a fact for policy makers in case of Pakistan. So, monetary authorities should control money supply. Sustainable economic growth is necessary through money demand to get rid of the balance of payment deficit. The government of Pakistan must also decrease and control its internal borrowing specially deficit financing, which is mostly from the state bank of Pakistan.

The paper suggests that balance of payments is a self-adjusting mechanism; but the central bank has also a key role to play especially formulating the monetary policy, balance of payment will be kept under consideration. As Pakistan, already faces continuous deficit in their balance of payment, therefore making of policies the authorities should concentrate on some other factors and policy measures too rather than solely on monetary tools to achieve stability in the country's balance of payments to correct the disequilibrium. The results show that dis-equilibrium in the balance of payment of Pakistan is not merely a monetary phenomenon: the variables – namely net foreign assets, inflation and exchange rate seems to have a significant relationship with balance of payment. Although it is some what according of the predictions of Monetary Approach to Balance Payment, but the entire results of this study do not observe the strong assumptions of the latter approach.

The study finds that monetary variables are not the only cause of deficit in the balance of payment of Pakistan, but some other factors are also responsible for it like export which mainly consists of raw materials, agriculture products, cotton and rice etc. The second factor is that, the growth of industrial sector in Pakistan are very slow, which hardly fulfill the domestic requirements. Third the domestic and foreign investments are also very low.

Further the study suggests that Pakistan should take steps of anti-inflation (control inflation) increase the net foreign assets, improve the quality of their products which should compete with the international market products, increase the local production,(agriculture as well that of

industrial sector), like textile, machinery, plants, garments, and construction sectors etc. Fluctuation in the exchange rate needs to be removed and a sustained exchange rate is required for minimizing the deficit in balance of payment in economy.

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